

**NUCLEAR REGULATORY COMMISSION  
ISSUANCES**

**OPINIONS AND DECISIONS OF THE  
NUCLEAR REGULATORY COMMISSION  
WITH SELECTED ORDERS**

January 1, 2007 – June 30, 2007

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## PREFACE

This is the sixty-fifth volume of issuances (1–658) of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Boards, Administrative Law Judges, and Office Directors. It covers the period from January 1, 2007, to June 30, 2007.

Atomic Safety and Licensing Boards are authorized by Section 191 of the Atomic Energy Act of 1954. These Boards, comprised of three members conduct adjudicatory hearings on applications to construct and operate nuclear power plants and related facilities and issue initial decisions which, subject to internal review and appellate procedures, become the final Commission action with respect to those applications. Boards are drawn from the Atomic Safety and Licensing Board Panel, comprised of lawyers, nuclear physicists and engineers, environmentalists, chemists, and economists. The Atomic Energy Commission (AEC) first established Licensing Boards in 1962 and the Panel in 1967.

Between 1969 and 1990, the AEC authorized Atomic Safety and Licensing Appeal Boards to exercise the authority and perform the review functions which would otherwise have been exercised and performed by the Commission in facility licensing proceedings. In 1972, that Commission created an Appeal Panel, from which were drawn the Appeal Boards assigned to each licensing proceeding. The functions performed by both Appeal Boards and Licensing Boards were transferred from the AEC to the Nuclear Regulatory Commission by the Energy Reorganization Act of 1974. Appeal Boards represented the final level in the administrative adjudicatory process to which parties could appeal. Parties, however, were permitted to seek discretionary Commission review of certain board rulings. The Commission also could decide to review, on its own motion, various decisions or actions of Appeal Boards.

On June 29, 1990, however, the Commission voted to abolish the Atomic Safety and Licensing Appeal Panel, and the Panel ceased to exist as of June 30, 1991. Since then, the Commission itself reviews Licensing Board and other adjudicatory decisions, as a matter of discretion. *See* 56 Fed. 29 & 403 (1991).

The Commission also has Administrative Law Judges appointed pursuant to the Administrative Procedure Act, who preside over proceedings as directed by the Commission.

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Issuances are referred to as follows: Commission—CLI, Atomic Safety and Licensing Boards—LBP, Administrative Law Judges—ALJ, Directors' Decisions—DD, and Decisions on Petitions for Rulemaking—DPRM.

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

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**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-271-LR**

**ENTERGY NUCLEAR VERMONT  
YANKEE, LLC, and ENTERGY  
NUCLEAR OPERATIONS, INC.  
(Vermont Yankee Nuclear Power  
Station)**

**January 11, 2007**

**RULES OF PRACTICE: DISCRETIONARY INTERLOCUTORY  
APPEALS**

The Commission customarily does not entertain discretionary interlocutory appeals, due in large part to a “general unwillingness to engage in ‘piecemeal interference in ongoing Licensing Board proceedings.’” *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-04-31, 60 NRC 461, 466 (2004), quoting *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-7, 55 NRC 205, 213 (2002).

**RULES OF PRACTICE: DISCRETIONARY INTERLOCUTORY  
APPEALS**

The Commission’s procedural rules set a high bar for interlocutory review petitions, viz, a petitioner must demonstrate that the licensing board’s ruling at issue either “[t]hreatens the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated

through a petition for review of the presiding officer's final decision; or . . . [a]ffects the basic structure of the proceeding in a pervasive or unusual manner." 10 C.F.R. § 2.341(f)(2)(i)-(ii).

**RULES OF PRACTICE: REFERRED QUESTIONS; CERTIFIED RULINGS**

Outside the context of petitions for interlocutory review, the Commission may also take interlocutory review of questions or rulings that a licensing board either refers or certifies to the Commission under 10 C.F.R. §§ 2.319(l) or 2.323(f), respectively. *See* 10 C.F.R. § 2.341(f)(1).

**RULES OF PRACTICE: SUA SPONTE REVIEW**

The Commission will occasionally take review of an issue on its own motion, or *sua sponte*, where that issue is not otherwise before it on appeal. The Commission has used *sua sponte* review as a vehicle to address unappealed issues or orders, to set a specific timetable or otherwise customize our procedures for individual adjudications, to suspend a proceeding, to vacate an unreviewed board order after withdrawal of the challenged application, to decide whether to disqualify a presiding officer, to address an issue of wide implication, and to provide guidance to a licensing board.

**RULES OF PRACTICE: SUA SPONTE REVIEW**

The Commission announced in its 1998 *Statement of Policy on Conduct of Adjudicatory Proceedings* that it would, where appropriate, exercise its authority to instruct the board to certify novel license renewal issues. CLI-98-12, 48 NRC 18, 23 (1998). The Commission's taking *sua sponte* review yields essentially the same result.

**MEMORANDUM AND ORDER**

Licenses Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc. (collectively "Entergy") seek interlocutory review of the Atomic

Safety and Licensing Board's Memorandum and Order, LBP-06-20<sup>1</sup> in this license renewal proceeding regarding the Vermont Yankee Nuclear Power Station.<sup>2</sup> The Board admitted for adjudication several contentions, but on appeal Entergy challenges only Intervenor New England Coalition's ("the Coalition") Contention 1.<sup>3</sup> That contention claims that Entergy's Environmental Report does not adequately address the impacts of increased thermal discharges into the Connecticut River during the 20-year license renewal period.

On appeal, Entergy asserts that the Board's admission of Contention 1 constitutes legal error,<sup>4</sup> raises substantial issues of law and policy,<sup>5</sup> threatens Entergy with immediate and serious irreparable harm that cannot later be rectified,<sup>6</sup> and will affect the proceeding in a pervasive and unusual manner.<sup>7</sup> Consequently, Entergy asks us to review the Board's admission of Contention 1, pursuant to the standards for discretionary interlocutory review set forth in 10 C.F.R. § 2.341(f)(2), and then to reverse the Board's ruling. We deny interlocutory review but take *sua sponte* review of the Board order.<sup>8</sup>

We customarily do not entertain interlocutory appeals of this kind, due in large part to our "general unwillingness to engage in 'piecemeal interference in ongoing Licensing Board proceedings.'" Our rules set a high bar for interlocutory review petitions, viz, a petitioner must demonstrate that the licensing board's ruling at issue either "[t]hreatens the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer's final decision; or . . .

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<sup>1</sup> 64 NRC 131 (2006), *reconsidered and denied*, unpublished decision (Oct. 30, 2006), ADAMS Accession No. ML063030484. (ADAMS is the acronym for the NRC's Agencywide Documents Access and Management System — a computerized storage and retrieval system for NRC documents, publicly accessible through the NRC's Web page at <http://www.nrc.gov>.)

<sup>2</sup> Entergy's Petition for Interlocutory Review of LBP-06-20 Admitting New England Coalition's Contention 1 (Oct. 10, 2006). Licensees seek a 20-year extension of the facility's licenses until March 21, 2032.

<sup>3</sup> The Board split 2-1 on Contention 1. Judges Karlin and Elleman joined in the majority opinion admitting the contention. Judge Wardwell filed a dissent (64 NRC at 211-18). The Board was unanimous on its other contention admissibility rulings.

<sup>4</sup> Petition at 1, 9-19.

<sup>5</sup> *Id.* at 19.

<sup>6</sup> *Id.* at 1, 19-21.

<sup>7</sup> *Id.* at 1, 21-22.

<sup>8</sup> Separately, we will address an appeal by the Massachusetts Attorney General, who challenges the Board's rejection of his contention raising assertedly new and significant information concerning the potential for fires in the spent fuel pool.

<sup>9</sup> *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-04-31, 60 NRC 461, 466 (2004), quoting *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-7, 55 NRC 205, 213 (2002).

[a]ffects the basic structure of the proceeding in a pervasive or unusual manner.’’<sup>10</sup> Entergy’s interlocutory appeal falls well outside this standard.

However, we will occasionally take review of an issue on our own motion, or *sua sponte*, where that issue is not otherwise before us on appeal. This “*sua sponte* review” provides an avenue for us to take various kinds of adjudicatory action. For instance, we have used *sua sponte* review as a vehicle to address unappealed issues<sup>11</sup> or orders,<sup>12</sup> to set a specific timetable<sup>13</sup> or otherwise customize our procedures for individual adjudications,<sup>14</sup> to suspend a proceeding,<sup>15</sup> to vacate an unreviewed board order after withdrawal of the challenged application,<sup>16</sup> to decide whether to disqualify a presiding officer,<sup>17</sup> to address an issue of wide implication,<sup>18</sup> and to provide guidance to a licensing

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<sup>10</sup> 10 C.F.R. § 2.341(f)(2)(i)-(ii). Outside the context of petitions for interlocutory review, the Commission may also take interlocutory review of questions or rulings that a licensing board either refers or certifies to the Commission under 10 C.F.R. §§ 2.319(l) or 2.323(f), respectively. See 10 C.F.R. § 2.341(f)(1). There has been no referral or certification here.

<sup>11</sup> See, e.g., *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-03-5, 57 NRC 279, 284 (2003); *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), CLI-99-5, 49 NRC 199, 200 (1999).

<sup>12</sup> See, e.g., *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-6, 59 NRC 62, 67, 74 (2004); *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-1, 49 NRC 1, 2 (1999); *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-98-18, 48 NRC 129, 130 (1998); *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), CLI-73-28, 6 AEC 995 (1973).

<sup>13</sup> *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-01-13, 53 NRC 478, 484-86 (2001); *Hydro Resources*, CLI-99-1, 49 NRC at 2; *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-15, 48 NRC 45, 52 (1998) (and cited authority), *aff’d sub nom. National Whistleblower Center v. NRC*, 208 F.3d 256 (D.C. Cir. 2000), *cert. denied*, 531 U.S. 1070 (2001); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 9-11 (1996); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-88-9, 28 NRC 567, 569-71 (1988).

<sup>14</sup> *Savannah River*, CLI-01-13, 53 NRC at 480; *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-18, 49 NRC 411, 412 (1999).

<sup>15</sup> *Ohio Edison Co.* (Perry Nuclear Power Plant, Unit 1), CLI-91-15, 34 NRC 269, 271 (1991), *reconsidered and denied*, CLI-92-6, 35 NRC 86, 88 (1992).

<sup>16</sup> *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-99-24, 50 NRC 219, 222 (1999).

<sup>17</sup> *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-98-9, 47 NRC 326, 332 (1998).

<sup>18</sup> *Seabrook*, CLI-98-18, 48 NRC at 130; *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 516-17 (1977), *aff’d sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 95-96 (1st Cir. 1978); *United States Energy Research and Development Administration* (Clinch River Breeder Reactor Plant), CLI-76-13, 4 NRC 67, 76 (1976). See generally 10 C.F.R. § 2.341(f)(1), authorizing presiding officers to certify to us “novel issue[s].”

board.<sup>19</sup> These last two reasons motivate us here to exercise our *sua sponte* review authority.

The sharply differing views of the majority and dissenting member of the Board on the regulatory requirements for environmental assessment of the impact of thermal discharge from a once-through cooling system raise significant issues of potentially broad impact and may well recur in the likely license renewal proceedings<sup>20</sup> for other plants that use such a cooling system but whose operating licenses have not been renewed.<sup>21</sup> Moreover, we announced in our 1998 *Statement of Policy on Conduct of Adjudicatory Proceedings* that we would, where appropriate, exercise our authority to instruct the board to certify novel license renewal issues to us.<sup>22</sup> Our taking *sua sponte* review yields essentially the same result.

In sum, given the important questions regarding the regulatory requirements at play in the analysis of the thermal discharge issue, and our policy of providing guidance to the licensing boards on such issues, we take *sua sponte* review of the Board's decision to admit the Coalition's Contention 1 for adjudication. To assist us in our review, we direct the parties to file briefs pursuant to the following schedule:

Within 14 days of this Order, all parties are to submit briefs supporting their positions on the admissibility of the Coalition's Contention 1.

Within 7 days thereafter, all parties are to submit reply briefs.

The Commission and the parties are to *receive* the briefs on the due date.

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<sup>19</sup> See, e.g., *Clinton ESP Site*, CLI-06-20, 64 NRC at 21; *Catawba*, CLI-04-6, 59 NRC at 74; *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 210 (1998); *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-98-16, 48 NRC 119, 120 (1998); *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 NRC 39, *passim*, *motion to vacate denied*, CLI-98-15, 48 NRC 45, 51 (1998), *aff'd sub nom. National Whistleblower Center v. NRC*, 208 F.3d 256 (D.C. Cir. 2000), *cert. denied*, 531 U.S. 1070 (2001).

<sup>20</sup> "The industry fully expects all U.S. [nuclear] plants to apply for . . . [20-year] extensions as their original license periods expire." James A. Lake (associate laboratory director for the nuclear program at the Idaho National Laboratory, and president of the American Nuclear Society in 2000-2001), *The Renaissance of Nuclear Energy*, eJournalUSA, available at <http://usinfo.state.gov/journals/ites/0706/ijee/lake.htm> (last visited July 11, 2006).

<sup>21</sup> The other plants using this kind of cooling system are identified in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," App. A (May 1996).

<sup>22</sup> CLI-98-12, 48 NRC 18, 23 (1998).

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 11th day of January 2007.

**Commissioner Peter B. Lyons, with Whom Commissioner Gregory B. Jaczko Joins, Respectfully Dissenting**

Entergy's interlocutory review Petition seeks Commission review of the Board's admission of only one of several contentions the Board admitted for litigation. Entergy asks that the Commission review the admissibility of the contention pursuant to either the discretionary interlocutory review standards of section 2.341(f)(2), which the majority decision refuses to do, or pursuant to the Commission's inherent supervisory authority over adjudications, which the majority decision does. We would deny the Petition.

We agree with the majority decision that Entergy's interlocutory appeal made pursuant to section 2.341(f)(2) "falls well outside" of the standards set forth in that regulation. There is a high bar for interlocutory review petitions, which must show "immediate and serious irreparable impact" or a "pervasive or unusual" impact on "the basic structure" of the proceeding. Entergy's claim of Board legal error and assertion of an increase in litigation burden caused by the admission of the contention do not rise to this level.

We disagree with the majority decision to grant Entergy's request to have the Commission exercise our inherent supervisory authority over the admissibility of this one contention. The Commission's supervisory authority does not constitute grounds for a *party's own request* for appellate review.<sup>23</sup> Were it otherwise, there would be no limit to the kinds of arguments parties could legitimately present on appeal, and particularly on *interlocutory* appeal — a result at odds with the

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<sup>23</sup> See *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-00-11, 51 NRC 297, 299 (2000) ("And the Commission itself may exercise its discretion to review a licensing board's interlocutory order if the *Commission* wants to address a novel or important issue . . . . However, the Commission's decision to do so in any particular proceeding stems from its inherent supervisory authority over adjudications and in no way implies that parties have a right to seek interlocutory review on that same ground") (emphasis in original).

Commission's oft-expressed intent to limit the availability of such appeals.<sup>24</sup> Thus, the exercise of this authority at the request of a party undercuts the integrity of the Commission's procedures.

In addition, the exercise of the Commission's inherent supervisory authority is not warranted in this instance. The majority decision implies that the issue of the impact of thermal discharge from a once-through cooling system is a new issue before the Commission and suggests that since industry expects all plants will seek license renewal, this issue "may well recur" in the "likely" license renewal proceedings. First, according to the NRC license renewal Web site, the NRC has completed its review on no less than twenty-three plant applications. Had this matter been indeed of substantial significance, it likely would have surfaced before. It hardly seems a worthwhile exercise of the Commission's supervisory authority to resolve a routine contention admissibility dispute.

With respect to the possible future litigation of this matter, a comparison of NUREG-1437, Appendix A (listing plants and their cooling systems) and the NRC Web site shows that there are ten plants that have not been renewed that have once-through cooling systems, of which less than half have been identified in letters of intent to seek renewal in the future, and, most importantly, of those, only one has the potential to reach the contention admissibility stage of a hearing before the conclusion of this proceeding. Consequently, this is not a novel issue of "wide application" or one with broad impacts. With one possible exception, the Commission will have already decided this question, if it is raised on appeal at the end of the case, and its decision is to be applied, as a matter of *stare decisis*, to all other instances in which this question is raised in litigation.

We note that the Board has set a schedule, which includes a deadline of June 15, 2007, for the filing of motions for summary disposition. See "Initial Scheduling Order," dated November 17, 2006, at 7 (ML063210212). Entergy's Petition raises arguments that would seem to make this contention a prime candidate for the use of this procedure.<sup>25</sup> Review on this question, as well as the other contentions admitted for adjudication, should abide the end of the case. However, now that the Commission has decided to take up this matter, we will participate

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<sup>24</sup> See *Entergy Nuclear Operation Inc.* (Pilgrim Nuclear Power Station), CLI-07-2, 65 NRC 10, 11 (2007) (rejecting interlocutory appeal by license renewal intervenor); *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 119 (2006).

<sup>25</sup> In response to Commissioner Merrifield's separate views, we recognize that to be granted summary disposition, a party must show that there is "no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law." 10 C.F.R. § 2.710(d)(2). A factual dispute adequate to support the admission of a contention, however, may not necessarily stand up under the rigor of summary disposition and, in any event, may be irrelevant to the legal theory propounded on summary disposition.



in that process as if the appeal had come before the Commission in the proper course.

**Commissioner Jeffrey S. Merrifield, with Whom Commissioner Edward McGaffigan, Jr. Joins, Concurring**

We agree with the majority decision to take review of this thermal impacts contention. We write separately to emphasize why, in our view, the Commission is exercising its inherent supervisory authority and taking review of the admissibility of this contention.

While we appreciate the views of our dissenting colleagues, and their desire to preserve our interlocutory review standards, we respectfully disagree with them. We agree with the dissent that the Commission's inherent supervisory authority does not constitute grounds for a party's review. However, in a situation that merits Commission review, the refusal to take review because a party asked us to would elevate form over substance. We would, in effect, be saying that if the Commission had noticed this issue on our own we would take review, but because one of our stakeholders called it to our attention, we will not take review. In our view, while we may agree or disagree with a particular matter, we nonetheless appreciate any stakeholder bringing something to the Commission's attention that merits Commission review. This is further reinforced by the fact that our Staff has raised the same concern. If we refused review in this situation we would place parties in adjudications in the untenable position of witnessing conduct before a licensing board that is clearly inconsistent with Commission policy, yet being unable to alert us for fear that by raising the issue, their chances of Commission action will be reduced. This would create a chilling effect that we believe is an unintended outgrowth of the position contained in the dissent.

Thus far, the Commission has done an excellent job at ensuring its license renewal process is effective, efficient, realistic, and timely. Part of the reason for this is the careful differentiation between Category 1 and Category 2 impacts in license renewal. Category 1 issues have been generically determined for all plants in the Generic Environmental Impact Statement (GEIS), NUREG-1427. Category 2 issues require a plant-specific analysis. The admission of this contention appears to require additional analysis of a Category 1 issue. In our 1998 policy statement on the conduct of adjudicatory proceedings we specifically emphasized that for a license renewal proceeding the review of environmental issues is limited by rule by the generic findings in the GEIS. Since, on its face, the admission of this contention appears to require analysis of findings that were generically determined, its admission is inconsistent with the policy statement. If we are not willing to enforce our policy statements, the statements become meaningless.

We disagree with our dissenting colleagues that the summary judgment procedure could resolve this dispute. While we agree that, as a theoretical matter,

presumably a contention that was inadmissible from the outset should be dismissed on summary disposition, it appears that the licensing board has a different view and would benefit from further guidance. Summary disposition is a procedure used when there are no genuine issues as to any material fact and the party is entitled to a decision as a matter of law. *See* 10 C.F.R. §§ 2.710, 2.1205. The Board decision admitting the contention asserts that “questions of both law and fact are sharply disputed.” *See* LBP-06-20, 64 NRC at 179. The Board decision suggests that in litigating this contention it will explore such issues as “Are the general ER [environmental report] requirements found at 10 C.F.R. §§ 51.45(c) and 51.53(c) displaced, or instead merely supplemented, by the more narrow 10 C.F.R. § 51.53(c)(3)(ii)(B)?” *See id.* at 181-82. The Board further suggests that the question of whether a national pollutant discharge elimination system (NPDES) permit that expires before the license renewal period is complete satisfies the National Environmental Policy Act (NEPA) is a factual dispute that supports admission of the contention. *See id.* at 182.

In our view, further exploration of either of the areas suggested by the Board may well be a completely unnecessary exercise and inconsistent with our longstanding goal of ensuring that agency proceedings are conducted efficiently and focus on issues germane to the proposed actions under consideration. The Commission stated in its 1998 policy statement that it intended to “monitor its proceedings to ensure that they are being concluded in a fair and timely fashion.” We further stated that we would “take action in individual proceedings, as appropriate, to provide guidance to the boards and parties and to decide issues in the interest of a prompt and effective resolution of the matters set for adjudication.” Taking review of this contention is clearly in keeping with our adjudicatory policy statement. It is for these reasons that we have joined in the majority decision to take review and respectfully disagree with our dissenting colleagues.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-293-LR**

**ENTERGY NUCLEAR GENERATION  
COMPANY and ENTERGY  
NUCLEAR OPERATIONS, INC.  
(Pilgrim Nuclear Power Station)**

**January 11, 2007**

The Commission denies an appeal by an admitted Intervenor who seeks interlocutory review of one rejected contention.

**RULES OF PRACTICE: APPEALS**

Under 10 C.F.R. § 2.311, appeals are permitted under three circumstances: (1) where a petitioner challenges an order “denying” a petition to intervene and/or request for hearing; (2) where a party other than a petitioner challenges an order granting a petition to intervene, claiming that the petition should have been “wholly denied”; and (3) where a party claims that an order selecting a hearing procedure “was in clear contravention” of applicable Commission hearing selection criteria. Section 2.311 does not provide for interlocutory appeals by an admitted intervenor, and the Commission generally disfavors interlocutory, piecemeal appeals.

**APPEALS: INTERLOCUTORY**

In exceptional instances, the Commission may in its discretion grant a petition

for interlocutory review, where a party demonstrates that a ruling threatens it with immediate and serious irreparable impact, or affects the basic structure of the proceeding in a pervasive or unusual manner.

## MEMORANDUM AND ORDER

Before the Commission is an appeal of LBP-06-23<sup>1</sup> filed by Intervenor Pilgrim Watch. In LBP-06-23, the Atomic Safety and Licensing Board granted Pilgrim Watch's hearing request, and admitted for hearing two of Pilgrim Watch's five contentions. In its appeal, Pilgrim Watch asks the Commission to "order the admission of Pilgrim Watch's contention 4," one of three Pilgrim Watch contentions that the Board rejected as inadmissible for hearing.<sup>2</sup> Both Entergy Nuclear Operations, Inc. and the NRC Staff oppose the appeal. For the reasons outlined below, we deny Pilgrim Watch's appeal.

Pilgrim Watch submits its appeal pursuant to 10 C.F.R. § 2.311, the NRC's rule allowing appeals of Presiding Officer or Board rulings on requests for hearing and petitions to intervene. The rule permits appeals as of right in three circumstances only: (1) where a petitioner challenges an order "denying" a petition to intervene and/or request for hearing; (2) where a party other than a petitioner challenges an order granting a petition to intervene, claiming that the petition should have been "wholly denied"; and (3) where a party claims that an order selecting a hearing procedure "was in clear contravention" of applicable Commission hearing selection criteria.<sup>3</sup> "No other appeals from rulings on requests for hearings are allowed."<sup>4</sup>

In short, our rules permit appeals of rejected contentions only where a petitioner "claims that the Board wrongly rejected all contentions."<sup>5</sup> Here, however, the Board *admitted* Pilgrim Watch as a party to this license renewal proceeding, admitting two of its contentions. Pilgrim Watch therefore will have the opportunity to appeal the Board's rejection of Contention 4 following the Board's merits decision in this proceeding. Section 2.311 does not provide for interlocutory

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<sup>1</sup> 64 NRC 255 (2006).

<sup>2</sup> Pilgrim Watch Brief on Appeal of LBP-06-23 (Oct. 31, 2006) at 16. Another petitioner for a hearing, the Massachusetts Attorney General, has appealed LBP-06-23. We will address the Attorney General's appeal in a separate decision.

<sup>3</sup> See 10 C.F.R. § 2.311(b)-(d).

<sup>4</sup> See 10 C.F.R. § 2.311(a).

<sup>5</sup> See *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 119 (2006); see also *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-04-31, 60 NRC 461, 468 (2004); *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-11, 59 NRC 203, 208 (2004).

appeals by an admitted intervenor, and the Commission generally “disfavor[s] interlocutory, piecemeal appeals.”<sup>6</sup>

In exceptional instances, the Commission may in its discretion grant a petition for interlocutory review, where a party demonstrates that a ruling threatens it “with immediate and serious irreparable impact” or “[a]ffects the basic structure of the proceeding in a pervasive or unusual matter.”<sup>7</sup> Here, Pilgrim Watch makes neither claim. Moreover, “[c]laims that a board has wrongly rejected a contention . . . are commonplace” and cannot without more “be said to affect a proceeding’s ‘basic structure’ . . . .”<sup>8</sup>

For the reasons provided in this decision, we *deny* Pilgrim Watch’s appeal of LBP-06-23.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 11th day of January 2007.

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<sup>6</sup> See *Clinton*, CLI-04-31, 60 NRC at 466.

<sup>7</sup> See 10 C.F.R. § 2.341(f)(2).

<sup>8</sup> See *Clinton*, CLI-04-31, 60 NRC at 467.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-271-LR**

**ENTERGY NUCLEAR VERMONT  
YANKEE, LLC, and ENTERGY  
NUCLEAR OPERATIONS, INC.**  
(Vermont Yankee Nuclear Power  
Station)

**In the Matter of**

**Docket No. 50-293-LR**

**ENTERGY NUCLEAR GENERATION  
COMPANY and ENTERGY  
NUCLEAR OPERATIONS, INC.**  
(Pilgrim Nuclear Power Station)

**January 22, 2007**

**GENERIC ISSUES**

**LICENSE RENEWAL**

**ENVIRONMENTAL IMPACT STATEMENT**

Generic environmental impacts analyzed in the GEIS for license renewal are designated “Category 1” issues, for which the license renewal applicant is generally excused from discussing. 10 C.F.R. § 51.53(c)(3)(i). Generic analysis is “clearly an appropriate method” of meeting the agency’s statutory obligations

under NEPA. *See Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 101 (1984).

**GENERIC ISSUES**

**LICENSE RENEWAL**

**ENVIRONMENTAL IMPACT STATEMENT**

The license renewal GEIS determined that the environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be “not significant.” *See* NUREG-1427, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants (May 1996),” at 6-72 to -75, 6-85. Accordingly, this finding was expressly incorporated into our regulations. *See* 10 C.F.R. Part 51, Subpart A, App. B, Table B-1, “Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants.” Because the generic environmental analysis was incorporated into a regulation, the conclusions of that analysis are not subject to attack in an individual adjudication unless the rule is waived or suspended. 10 C.F.R. § 2.335(a), (b); *see also Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 364 (2001).

**GENERIC ISSUES**

**LICENSE RENEWAL**

**ENVIRONMENTAL IMPACT STATEMENT**

**CONTENTIONS**

One way to challenge a generic finding, or “Category 1” issue, in a particular license proceeding is to apply for a waiver where “special circumstances . . . are such that the application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted.” 10 C.F.R. § 2.335(b). In theory, Commission approval of a waiver could allow a contention on a Category 1 issue to proceed where special circumstances exist.

**GENERIC ISSUES**

**LICENSE RENEWAL**

**ENVIRONMENTAL IMPACT STATEMENT**

**CONTENTIONS**

Adjudicating Category 1 issues site by site based merely on a claim of “new and significant information,” would defeat the purpose of resolving generic issues in a GEIS.

**GENERIC ISSUES**

**LICENSE RENEWAL**

**ENVIRONMENTAL IMPACT STATEMENT**

**RULEMAKING**

Where a petitioner argues that new information contradicts assumptions underlying the entire generic analysis for all facilities or a whole class of facilities, the appropriate remedy is a rulemaking petition. It makes more sense for the NRC to study whether, as a technical matter, the agency should modify its requirements for all plants across the board than to litigate in particular adjudications whether generic findings in the GEIS are impeached by a claim of new information.

**GENERIC ISSUES**

**LICENSE RENEWAL**

**ENVIRONMENTAL IMPACT STATEMENT**

**RULEMAKING**

Pending resolution of a rulemaking petition, the NRC Staff may, where appropriate, seek the Commission’s permission to suspend the generic determination of a Category 1 issue and include a new analysis in the plant-specific environmental impact statements. *See* Statement of Considerations, Final Rule: “Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,” 61 Fed. Reg. 28,467, 28,472 (June 5, 1996). If the rule is suspended for the analysis, each supplemental EIS would reflect the corrected analysis until such time as the rule is amended.



## GENERIC ISSUES

## LICENSE RENEWAL

## ENVIRONMENTAL IMPACT STATEMENT

## SEVERE ACCIDENT MITIGATION ANALYSIS

A license renewal applicant need not discuss severe accident mitigation alternatives for generic — or “Category 1” — issues. *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 21-22 (2001). This makes obvious sense since “for all issues designated as Category 1 the Commission has concluded that [generically] additional site-specific mitigation alternatives are unlikely to be beneficial.” *Id.* at 22.

## MEMORANDUM AND ORDER

Today we deny appeals by the Massachusetts Attorney General (Mass AG) and affirm two Atomic Safety and Licensing Board decisions rejecting his sole contention in two separate license renewal proceedings. The Mass AG proposed essentially identical contentions in the proceedings to renew the operating license at the Vermont Yankee Power Station in Windham County, Vermont,<sup>1</sup> and the Pilgrim Nuclear Power Station in Plymouth, Massachusetts.<sup>2</sup> The Mass AG’s contention says that new information calls into question previous NRC findings on the environmental impacts of fires in spent fuel pools. The Mass AG contention challenges one of the findings in the Generic Environmental Impact Statement (GEIS) for license renewal — namely, that storing spent fuel in pools for an additional 20 years would have insignificant environmental impacts. In each of the challenged decisions, the Licensing Board found the contention inadmissible. Both Boards found the GEIS finding controlling absent a waiver<sup>3</sup> of the NRC’s generic finding<sup>4</sup> or a successful petition for rulemaking.<sup>5</sup> We conclude that the Boards’ interpretation of the law and regulations concerning generic, or “Category 1,” environmental findings is consistent with *Turkey Point*<sup>6</sup> and we affirm both rulings.

The Mass AG has in fact filed a petition for rulemaking raising the same issues

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<sup>1</sup> LBP-06-20, 64 NRC 131 (2006).

<sup>2</sup> LBP-06-23, 64 NRC 255 (2006).

<sup>3</sup> 10 C.F.R. § 2.335.

<sup>4</sup> *See* 10 C.F.R. § 51.53(c)(3)(i).

<sup>5</sup> 10 C.F.R. § 2.802.

<sup>6</sup> *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3 (2001).

as his contention.<sup>7</sup> As he in essence acknowledges,<sup>8</sup> the petition for rulemaking is a more appropriate avenue for resolving his generic concerns about spent fuel fires than a site-specific contention in an adjudication.

## I. BACKGROUND

### A. Environmental Analysis for License Renewal

In 1996, the Commission amended the environmental review requirements in 10 C.F.R. Part 51 to address the scope of environmental review for license renewal applications.<sup>9</sup> The regulations divide the license renewal environmental review into generic and plant-specific issues. The generic impacts of operating a plant for an additional 20 years that are common to all plants, or to a specific subgroup of plants, were addressed in a 1996 GEIS.<sup>10</sup> Those generic impacts analyzed in the GEIS are designated “Category 1” issues. A license renewal applicant is generally excused from discussing Category 1 issues in its environmental report.<sup>11</sup> Generic analysis is “clearly an appropriate method” of meeting the agency’s statutory obligations under NEPA.<sup>12</sup>

The license renewal GEIS determined that the environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be “not significant.”<sup>13</sup> Accordingly, this finding was expressly incorporated into Part 51 of our regulations.<sup>14</sup> Because the generic environmental analysis was incorporated into a regulation, the conclusions of that analysis may not be challenged in

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<sup>7</sup> See Massachusetts Attorney General’s Petition for Rulemaking To Amend 10 C.F.R. Part 51 (Aug. 25, 2006), *see* 71 Fed. Reg. 64,169 (public notice).

<sup>8</sup> See, e.g., Massachusetts Attorney General’s Brief on Appeal of LBP-06-20 (Oct. 3, 2006), at 8 n.7, agreeing that the Mass AG’s contention does not fit the criteria for a rule waiver. See also Massachusetts’ Petition for Rulemaking at 18.

<sup>9</sup> Final Rule: “Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,” 61 Fed. Reg. 28,467 (1996).

<sup>10</sup> See NUREG-1437, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants,” Final Report, Vol. 1 (“GEIS”) (May 1996).

<sup>11</sup> 10 C.F.R. § 51.53(c)(3)(i).

<sup>12</sup> See *Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 101 (1984).

<sup>13</sup> See NUREG-1427, at 6-72 to -75 (“even under the worst probable cause of a loss of spent-fuel pool coolant (a severe seismic-generated accident causing a catastrophic failure of the pool), the likelihood of a fuel-cladding fire is highly remote”), at 6-85 (in a high-density pool, “risks due to accidents and their environmental effects are found to be not significant”).

<sup>14</sup> See 10 C.F.R. Part 51, Subpart A, App. B, Table B-1, “Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants” (“The expected increase in the volume of spent fuel from an additional 20 years of operation can be safely accommodated on site with small environmental effects”).

litigation unless the rule is waived by the Commission for a particular proceeding or the rule itself is suspended or altered in a rulemaking proceeding.<sup>15</sup>

## **B. The Mass AG's Contention**

In both license renewal proceedings before us today, the Mass AG submitted a petition for intervention and request for hearing on a single contention challenging Entergy's<sup>16</sup> environmental report for failing to include an analysis of the long-term environmental effects of storing spent fuel in high-density pools at the site. Specifically, the Mass AG cited studies issued subsequent to the GEIS claiming that even a partial loss of water in the spent fuel pool could lead to a severe fire.<sup>17</sup> The Mass AG argues that Entergy's failure to include the new information violated 10 C.F.R. § 51.53(c)(3)(iv)<sup>18</sup> and raises a litigable contention:

Significant new information now firmly establishes that (a) if the water level in a fuel storage pool drops to the point where the tops of the fuel assemblies are uncovered, the fuel will burn, (b) the fuel will burn regardless of its age, (c) the fire will propagate to other assemblies in the pool, and (d) the fire may be catastrophic.<sup>19</sup>

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<sup>15</sup> NRC regulations do not allow a contention to attack a regulation, unless the proponent requests a waiver from the Commission. 10 C.F.R. § 2.335(a), (b); *see also Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 364 (2001).

<sup>16</sup> Entergy Nuclear Operations, Inc., together with Entergy Nuclear Generation Company, holds the operating license for the Pilgrim Nuclear Power Station. Entergy Nuclear Operations, Inc., and Entergy Vermont Yankee, LLC, hold the license for the Vermont Yankee Nuclear Power Station. In today's decision we refer to the license applicants collectively as "Entergy."

<sup>17</sup> *See* NAS Committee on the Safety and Security of Commercial Spent Nuclear Fuel Storage, *Safety and Security of Commercial Spent Nuclear Fuel Storage* (National Academies Press, 2006); Dr. Gordon Thompson, *Risks and Risk-Reducing Options Associated with Pool Storage of Spent Nuclear Fuel at the Pilgrim and Vermont Yankee Nuclear Power Plants* (May 25, 2006); Dr. Jan Beyea, *Report to the Massachusetts Attorney General on the Potential Consequences of a Spent-Fuel Pool Fire at the Pilgrim or Vermont Yankee Nuclear Plant* (May 25, 2006).

<sup>18</sup> In response to concerns raised by the Council on Environmental Quality and others that the NRC's generic approach in the license renewal GEIS would not take into consideration new pertinent information on environmental impacts, the NRC adopted a rule, 10 C.F.R. § 51.53(c)(3)(iv), requiring a license renewal applicant to include "new and significant information" concerning environmental effects. This information would be included in the site-specific supplemental EIS (SEIS) for each power plant which is issued as part of the license renewal application review.

<sup>19</sup> *See* Massachusetts Attorney General's Request for a Hearing and Petition for Leave To Intervene with Respect to Entergy Nuclear Operations Inc.'s Application for Renewal of the Vermont Yankee Nuclear Power Plant Operating License and Petition for Backfit Order Requiring New Design Features To Protect Against Spent Fuel Pool Accidents (May 26, 2006) ("VY Hearing Request") at 22; *see also* Massachusetts Attorney General's Request for a Hearing and Petition for Leave To Intervene  
(Continued)

The Mass AG argued, therefore, that Entergy should have discussed consequences and mitigation of severe accidents in spent fuel pools (including those initiated by terrorist acts). In support of its claim that possible terrorist attacks increase the probability of an accident, the Mass AG pointed to the recent Ninth Circuit decision in *San Louis Obispo Mothers for Peace v. NRC*.<sup>20</sup> The Mass AG also claimed that NRC license renewal regulations require that the ER discuss severe accident mitigation alternatives for reducing the impact of a spent fuel accident, such as moving a portion of the fuel to dry storage to reduce density.<sup>21</sup>

The Mass AG also filed a petition for rulemaking to amend the applicable regulations. The Mass AG's petition covers somewhat broader grounds than his contention.<sup>22</sup> It asks NRC to consider the new information on pool fire risks, "revoke the regulations that codify the incorrect conclusion" that the environmental impacts of spent fuel storage are insignificant, issue a generic determination that the impacts of high-density pool storage are significant, and "order that any NRC licensing decision that approves high-density pool storage of spent fuel" (presumably in either a license renewal proceeding or any other license amendment proceeding) be accompanied by an environmental impact statement that discusses alternatives to avoid or mitigate the impacts. It also asks that no final decision issue on the *Vermont Yankee* and *Pilgrim* license renewal proceedings until the rulemaking petition is resolved.<sup>23</sup>

## II. DISCUSSION

### A. The Licensing Boards Correctly Found the Mass AG's Contention Not Admissible

#### 1. *Category 1 Findings Based on the GEIS Analysis Not Subject To Attack in an Individual Licensing Proceeding*

Both Licensing Boards determined that this case is controlled by our ruling in the *Turkey Point* license renewal proceeding. In *Turkey Point*, a petitioner proposed to litigate the issue of the possible environmental effects of an accident involving stored fuel, including an accident resulting from an attack by the Cuban

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with Respect to Entergy Nuclear Operations Inc.'s Application for Renewal of the Pilgrim Nuclear Power Plant Operating License and Petition for Backfit Order Requiring New Design Features To Protect Against Spent Fuel Pool Accidents (May 26, 2006) ("Pilgrim Hearing Request").

<sup>20</sup> 449 F.3d 1016 (9th Cir. 2006), *cert. denied*, No. 06-466 (Jan. 16, 2007).

<sup>21</sup> See VY Hearing Request at 23, *citing* 10 C.F.R. § 51.53(c)(3)(iii).

<sup>22</sup> See Massachusetts Attorney General's Petition for Rulemaking To Amend 10 C.F.R. Part 51 (Aug. 25, 2006).

<sup>23</sup> See Massachusetts Attorney General's Rulemaking Petition at 3.

Air Force.<sup>24</sup> The Commission agreed with the Board that this contention fell outside the scope of a license renewal proceeding, which focuses on those detrimental effects of aging that are not addressed as a matter of ongoing agency oversight and enforcement.<sup>25</sup> Our *Turkey Point* decision outlined the opportunity and procedures for presenting new and significant information that could undermine the findings in the GEIS, including asking for a rule waiver or filing a petition for rulemaking to change the GEIS finding.<sup>26</sup>

The Mass AG argues that *Turkey Point* is inapposite because, there, the petitioners did not argue that the license renewal applicant had violated the regulation requiring it to disclose “new and significant” information, whereas here the Mass AG does make that argument.<sup>27</sup> The Mass AG’s argument that its “new and significant information” distinguishes this case from *Turkey Point* is not convincing in light of the regulatory history of the license renewal rulemaking, as explained by the *Vermont Yankee* Board.<sup>28</sup>

Fundamentally, any contention on a “Category 1” issue amounts to a challenge to our regulation that bars challenges to generic environmental findings. There are, however, procedural steps available to make such a challenge. A rule can be waived in a particular license proceeding only where “special circumstances . . . are such that the application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted.”<sup>29</sup> In theory, Commission approval of a waiver could allow a contention on a Category 1 issue to proceed where special circumstances exist.

Here, the Mass AG does not argue that unique or unusual characteristics of the Pilgrim and Vermont Yankee facilities undermine the GEIS’s generic determinations, but instead argues that new information contradicts assumptions underlying the entire generic analysis for *all* spent fuel pools at all reactors, whether in a license renewal proceeding or not. It therefore appears that the Mass AG chose the appropriate way to challenge the GEIS when he filed his rulemaking petition. The Mass AG’s appeal, as well as his petition for rulemaking, appears to recognize as much.<sup>30</sup> It makes more sense for the NRC to study whether, as a technical matter, the agency should modify its requirements relating to spent fuel storage for all plants across the board than to litigate in particular adjudications

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<sup>24</sup> CLI-01-17, 54 NRC at 5-6.

<sup>25</sup> *See id.* at 7-8, 21-23.

<sup>26</sup> *See id.* at 11-13.

<sup>27</sup> Massachusetts Attorney General’s Brief on Appeal of LBP-06-20, at 12, *citing* 10 C.F.R. § 51.53(c)(3)(iv); *see* note 18, *supra*.

<sup>28</sup> *See* LBP-06-20, 64 NRC at 157-59.

<sup>29</sup> 10 C.F.R. § 2.335(b).

<sup>30</sup> *See, e.g.*, Massachusetts Attorney General’s Brief on Appeal of LBP-06-20, at 8. *See also* Petition for Rulemaking at 18.

whether generic findings in the GEIS are impeached by the Mass AG's claims of new information.<sup>31</sup> Adjudicating Category 1 issues site by site based merely on a claim of "new and significant information," would defeat the purpose of resolving generic issues in a GEIS.

## **2. *No Discussion of Severe Accident Mitigation Alternatives Necessary for Category 1***

The Boards were correct to disregard the Mass AG's argument that Entergy's environmental report was required to discuss severe accident mitigation alternatives such as reducing the density of fuel in the pool by moving some of it to dry storage.<sup>32</sup> The Commission held in *Turkey Point* that no discussion of mitigation alternatives is needed in a license renewal application for a Category 1 issue.<sup>33</sup> This makes obvious sense since "for all issues designated as Category 1, the Commission has concluded that [generically] additional site-specific mitigation alternatives are unlikely to be beneficial."<sup>34</sup> Both Boards found that license renewal applicants need only to discuss such alternatives with respect to "Category 2" issues (that is, environmental issues *not* generically resolved in the GEIS).

As we explained in *Turkey Point*, it is not necessary to discuss mitigation alternatives when the GEIS has already determined that, due to existing regulatory requirements, the probability of a spent fuel pool accident causing significant harm is remote.<sup>35</sup> The Mass AG's rulemaking petition, of course, has challenged the GEIS determination. If the NRC should find the Mass AG's concerns well founded, then one result might be that the GEIS designation is changed and a discussion of mitigation alternatives required. Another result might be that mitigation measures already put in place as a result of NRC's post-9/11 security review could be generically determined to be adequate and consistent with the existing GEIS designation.

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<sup>31</sup> The Mass AG claims that the Ninth Circuit's decision in *San Louis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016 (9th Cir. 2006), requires admitting its spent fuel contention. But that decision — which calls on NRC to consider the environmental effects of terrorist attacks when licensing nuclear facilities — is also raised in the Mass AG's rulemaking petition and can be considered in that context. The Ninth Circuit decision nowhere says or implies that the NRC cannot consider spent fuel pool or other environmental issues generically.

<sup>32</sup> See LBP-06-20, 64 NRC at 161; LBP-06-23, 64 NRC at 288, 289-93.

<sup>33</sup> See *Turkey Point*, CLI-01-17, 54 NRC at 21-22.

<sup>34</sup> *Id.* at 22.

<sup>35</sup> See License Renewal GEIS at 6-86 ("The need for the consideration of mitigation alternatives within the context of renewal of a power reactor license has been considered, and the Commission concludes that its regulatory requirements already in place provide adequate mitigation incentives for on-site storage of spent fuel"); see also *id.* at 6-91.

## **B. Effect of Rulemaking Petition**

The NRC posted a notice of receipt of the Mass AG's rulemaking petition on November 1, 2006, and has requested public comments by March 19, 2007.<sup>36</sup> After considering the petition and public comments, the NRC will make a decision on whether to deny the petition or proceed to make necessary revisions to the GEIS. The license renewal proceeding is not suspended during this period.<sup>37</sup> Nonetheless, depending on the timing and outcome of the NRC Staff's resolution of the Mass AG's rulemaking petition, it is possible that the NRC Staff could seek the Commission's permission to suspend the generic determination and include a new analysis in the Pilgrim and Vermont Yankee plant-specific environmental impact statements. This approach is described in the statement of considerations for our license renewal regulations, where the Commission noted:

b. If a commenter provides new information which is relevant to the plant and is also relevant to other plants (i.e., generic information) and that information demonstrates that the analysis of an impact codified in the final rule is incorrect, the NRC staff will seek Commission approval to either suspend the application of the rule on a generic basis with respect to the analysis or delay granting the renewal application (and possibly other renewal applications) until the analysis in the GEIS is updated and the rule amended. If the rule is suspended for the analysis, each supplemental EIS would reflect the corrected analysis until such time as the rule is amended.<sup>38</sup>

The Commission, in short, has in place various procedures for considering new and significant environmental information. Thus, whatever the ultimate fate of the Mass AG's "new information" claim, admitting the Mass AG's contention for an adjudicatory hearing is not necessary to ensure that the claim receives a full and fair airing.

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<sup>36</sup> 71 Fed. Reg. 64,169; deadline for public comments extended to March 19, 2007, *see* 72 Fed. Reg. 24 (Jan. 19, 2007).

<sup>37</sup> The Mass AG's rulemaking petition (at 3) asked the NRC to withhold final decisions in the *Vermont Yankee* and *Pilgrim* license renewal proceedings until the rulemaking petition is resolved. But final decisions in those proceedings are not expected for another year or more. Those proceedings involve many issues unrelated to the Mass AG's rulemaking petition. It is therefore premature to consider suspending proceedings or delaying final decisions. NRC regulations provide that a petitioner who has filed a petition for rulemaking "may request the Commission to suspend all or any part of any licensing proceeding to which the petitioner is a party pending disposition of the petition for rulemaking." 10 C.F.R. § 2.802(d). An interested governmental entity participating under 10 C.F.R. § 2.315 could also make this request.

<sup>38</sup> Statement of Considerations, Final Rule: "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," 61 Fed. Reg. 28,467, 28,472 (June 5, 1996).

### III. CONCLUSION

We find that the Licensing Boards were correct to reject the Mass AG's sole contention in the two cases, and therefore *affirm* the Boards' decisions.  
IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 22d day of January 2007.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 52-007-ESP**

**EXELON GENERATION COMPANY, LLC**  
**(Early Site Permit for Clinton**  
**ESP Site)**

**January 22, 2007**

**ORDER**

Before the Early Site Permit for the Clinton ESP site can be made effective, the Commission must review and approve the Atomic Safety and Licensing Board's Initial Decision authorizing its issuance.<sup>1</sup> In support of our review, we direct the NRC Staff and Applicant Exelon Generation Company, LLC, to respond to two specific issues raised by that order and to submit any other comments they deem pertinent to our review:

First, the Board issued its decision in LBP-06-28 subject to the modification of Permit Condition 3.<sup>2</sup> According to the Board's order, the Applicant agreed to this but the NRC Staff did not. Comments on the review should include the parties' position on this modification.

Second, the Board indicated that, had it not been constrained by our direction that the Board must defer to the NRC Staff in factfinding matters, it would not have approved a review where the NRC Staff did not independently verify certain

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<sup>1</sup> LBP-06-28, 64 NRC 460 (2006). See 10 C.F.R. § 2.340(f)(2).

<sup>2</sup> See LBP-06-28, 64 NRC at 495.

factual assertions made by the Applicant.<sup>3</sup> Comments on the review should also address this matter raised by the Board.

The NRC Staff and Applicant are encouraged to include any other views on the Board's decision. Comments should be limited to twenty-five pages and filed no more than 10 days from the date of this Order.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 22d day of January 2007.

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<sup>3</sup> See *id.* at 491-93.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:**

**Lawrence G. McDade**, Chairman  
**Nicholas G. Trikouros**  
**Dr. Richard E. Wardwell**

**In the Matter of**

**Docket No. 52-009-ESP**  
**(ASLBP No. 04-823-03-ESP)**

**SYSTEM ENERGY RESOURCES, INC.**  
**(Early Site Permit for Grand Gulf**  
**ESP Site)**

**January 26, 2007**

**ATOMIC ENERGY ACT: SECTION 189a (MANDATORY HEARING)**  
**CONSTRUCTION PERMIT(S): EARLY SITE PERMIT(S)**

Under section 189a of the Atomic Energy Act (AEA), the Commission “shall hold a hearing . . . on each application under Section 103 or 104b for a construction permit for a facility.” 42 U.S.C. § 2239(a)(1)(A) (2000). NRC regulations define Early Site Permits as “partial construction permits” and, as such, they are subject to the hearing requirements that are mandated under section 189a of the AEA and “to all procedural requirements in 10 C.F.R. Part 2 which are applicable to construction permits.” 10 C.F.R. § 52.21.

**MANDATORY HEARING: SCOPE OF REVIEW (UNCONTESTED MATTERS)**

When a proceeding involving an application for a construction permit is uncontested the Board will not conduct a “*de novo* review”; rather it “conduct[s] a simple ‘sufficiency’ review of [the] uncontested issues.” *Exelon Generation*

*Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005). The Board will “inquire whether the NRC Staff performed an adequate review and made findings with reasonable support in logic and fact.” *Id.*

**MANDATORY HEARING: SCOPE OF REVIEW (UNCONTESTED MATTERS)**

The Board “must narrow its inquiry to those topics or sections in [NRC] Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance.” *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-06-20, 64 NRC 15, 21-22 (2006).

**MANDATORY HEARING: SCOPE OF REVIEW (SAFETY)**

With respect to matters involving safety — i.e., issues pursuant to the Atomic Energy Act — the Board will determine whether the application and the record of the proceeding contain sufficient information and the review of the application by the NRC Staff has been adequate to assure that: (1) the issuance of an ESP will not be inimical to the common defense and security or to the health and safety of the public (Safety Issue 1); and (2) taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having characteristics that fall within the parameters for the site, can be constructed and operated without undue risk to the health and safety of the public (Safety Issue 2). 69 Fed. Reg. 2636 (Jan. 16, 2004).

**MANDATORY HEARING: SCOPE OF REVIEW (ENVIRONMENT)**

With respect to matters involving the environment — i.e., issues arising from the National Environmental Policy Act (NEPA) — the Board will: (1) determine whether the requirements of section 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have been complied with in the proceeding; (2) independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; (3) determine, after considering reasonable alternatives, whether the ESP should be issued, denied, or appropriately conditioned to protect environmental values; (4) determine whether the record of these proceedings contains sufficient information to conclude that the NEPA review conducted by the NRC Staff has been adequate. 69 Fed. Reg. 2636 (Jan. 16, 2004).

## **ENVIRONMENTAL IMPACT STATEMENT: ANALYSIS OF ALTERNATIVES**

For purposes of the Environmental Impact Statement, the potential construction and operation of the Early Site Permit plant or plants is the proposed action that must be the focus of the Board's review under the National Environmental Policy Act (42 U.S.C. § 4332(2)(C)).

## **EARLY SITE PERMIT: NATIONAL ENVIRONMENTAL POLICY ACT (ENVIRONMENTAL IMPACT STATEMENT)**

The NRC Staff is required to prepare an Environmental Impact Statement (EIS) during its review of an Early Site Permit (ESP) application (10 C.F.R. § 52.18) in accordance with 10 C.F.R. Part 51. The EIS must focus on the environmental effects of construction and operation of reactors that have the characteristics of the postulated site parameters, and must include an evaluation of alternatives to determine whether there are any obviously superior options to the proposed action. The Staff's EIS analysis for the ESP need not, however, include an assessment of the benefits (e.g., need for power). *See* 10 C.F.R. §§ 52.17, 52.18.

## **EARLY SITE PERMIT: NATIONAL ENVIRONMENTAL POLICY ACT (ENVIRONMENTAL IMPACT STATEMENT)**

Even where an Early Site Permit does not authorize any construction activity, the NRC Staff is required by Council on Environmental Quality regulations to consider actions that are related to other actions that could lead to a significant impact on the environment. *See* 40 C.F.R. § 1508.27(b)(7); *see also* 10 C.F.R. § 51.10.

## **LICENSING BOARDS: NATIONAL ENVIRONMENTAL POLICY ACT REVIEW**

The Board — in reaching its determinations on the “baseline” National Environmental Policy Act issues — will not second-guess the underlying technical or factual findings of the NRC Staff. When, however, the reviewing Board finds that the Staff's review is incomplete or that the Staff findings lack sufficient explanation, it will make its own determination of technical and factual findings.

## **NATIONAL ENVIRONMENTAL POLICY ACT: SCOPE OF ENVIRONMENTAL ANALYSIS**

Under section 102(2)(A) of the National Environmental Policy Act, agencies

are required to use a ‘‘systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man’s environment.’’ 42 U.S.C. § 4332(2)(A).

**NATIONAL ENVIRONMENTAL POLICY ACT: SCOPE OF ENVIRONMENTAL ANALYSIS**

Under section 102(2)(C) of the National Environmental Policy Act, agencies are required to include a detailed statement on: (1) ‘‘the environmental impact of the proposed action’’; (2) ‘‘any [unavoidable] adverse environmental effects’’; (3) ‘‘alternatives to the proposed action’’; (4) ‘‘the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity’’; and (5) ‘‘irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.’’ 42 U.S.C. § 4332(2)(C)(i)-(v).

**NATIONAL ENVIRONMENTAL POLICY ACT: SCOPE OF ENVIRONMENTAL ANALYSIS**

Under section 102(2)(E) of the National Environmental Policy Act, agencies are required to ‘‘study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.’’ 42 U.S.C. § 4332(E).

**LICENSING BOARDS: NATIONAL ENVIRONMENTAL POLICY ACT REVIEW**

In an uncontested proceeding for an Early Site Permit (ESP), the Board will independently consider the final balance among the conflicting factors, which include: (1) relative magnitude of the environmental impacts of the proposed action (i.e., construction and operation of one or more ESP base load nuclear plants at the proposed site) as compared to other energy, plant design, and site alternatives; (2) unavoidable adverse environmental impacts during construction and operation of the plant or plants and the mitigative actions proposed to minimize their effects; (3) potential cumulative impacts in the context of past, present, and future actions at the proposed site; (4) magnitude of the irreversible and irretrievable commitment of resources; and (5) relationship between short-term uses and long-term productivity of the human environment.

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**INITIAL DECISION**  
**(Authorizing the Issuance of the Grand Gulf Early Site Permit)**

**I. INTRODUCTION**

On October 16, 2003, System Energy Resources, Inc. (SERI) filed an application for a 10 C.F.R. Part 52, Subpart A Early Site Permit (ESP).<sup>1</sup> The ESP Application seeks approval of the site at the existing Grand Gulf Nuclear Station (GGNS) in Claiborne County, Mississippi, for the possible future

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<sup>1</sup>An ESP proceeding allows an applicant to secure early review and approval of specific siting and environmental issues as a preliminary to the submission of an application for a construction permit or combined operating license (COL). *See* 10 C.F.R. § 52.39. Those issues resolved in an ESP proceeding may be banked (i.e., relied on at the COL stage) for up to 20 years after an ESP is issued. However, any issues not expressly resolved during an ESP proceeding must be addressed by the applicant and resolved by the Nuclear Regulatory Commission at the COL stage.

construction of new nuclear power generation facilities.<sup>2</sup> Thereafter, in response to the Notice of Opportunity for a Hearing published in the *Federal Register*,<sup>3</sup> the National Association for the Advancement of Colored People (Claiborne County, Mississippi Branch), Nuclear Information and Resource Service, Public Citizen, and the Mississippi Chapter of the Sierra Club (Petitioners) filed a request for hearing and petition to intervene. Based on the pleadings submitted, and after hearing argument regarding the standing of the Petitioners and the admissibility of their seven proffered contentions, a prior Atomic Safety and Licensing Board determined that, although the Petitioners established the requisite standing to intervene in this proceeding, they failed to submit any admissible contentions.<sup>4</sup> The Petitioners collectively appealed the Board's Order and, on January 18, 2005, the Nuclear Regulatory Commission (NRC or Commission) affirmed the Board's rulings.<sup>5</sup> Therefore, the only matter remaining before this Board is satisfaction of the Mandatory Hearing requirement with regard to SERI's ESP Application.<sup>6</sup>

This Initial Decision embodies this Licensing Board's findings regarding uncontested matters in the above-captioned proceeding. It is based on the Board's review of the record of this proceeding including, but not limited to, the evidentiary hearing that was held from November 29 to December 1, 2006. This Initial Decision, absent further direction or action from the Commission, is the final action by the Board in this proceeding, and authorizes the Director, Office of Nuclear Reactor Regulation, to issue to SERI an ESP for the Grand Gulf site consistent with the provisions of the Atomic Energy Act of 1954 (AEA) as amended, NRC regulations, and this Initial Decision.

As described below, the Board has found that the NRC Staff's review of SERI's ESP Application has been adequate and, having performed an evaluation of the "baseline" issues under the National Environmental Policy Act of 1969 (NEPA), we have made an independent determination that, subject to the commitments and assumptions specified in (1) the Permit Conditions, COL Action Items, Site Characteristics, and Bounding Parameters specified in Appendix A of the Final Safety Evaluation Report (FSER) (NRC Staff Exhibit 44, ADAMS Accession No. ML0635603312), (2) Appendix J of the Final Environmental Impact Statement (FEIS) (NRC Staff Exhibit 45, ADAMS Accession No. ML063560332), (3) the table of Resolved Safety and Environmental Issues (NRC Staff Exhibit 3,

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<sup>2</sup>The site is on the east side of the Mississippi River, approximately 25 miles south of Vicksburg, Mississippi, and 6 miles northwest of Port Gibson, Mississippi, and consists of approximately 2100 acres. The proposed ESP site is adjacent to a single nuclear generating plant, which is capable of producing approximately 1350 MWe.

<sup>3</sup>69 Fed. Reg. 2636 (Jan. 16, 2004).

<sup>4</sup>See LBP-04-19, 60 NRC 277 (2004).

<sup>5</sup>See CLI-05-4, 61 NRC 10 (2005).

<sup>6</sup>See 42 U.S.C. § 2235 (2000); 10 C.F.R. §§ 52.18, 52.21, 52.24.

ADAMS Accession No. ML063560116), and (4) the Summary of Issues for Which Cumulative Effects Were Analyzed (NRC Staff Exhibit 9, ADAMS Accession No. ML063560097), that the Grand Gulf ESP should be issued.

## II. LEGAL STANDARDS GOVERNING THIS PROCEEDING

The AEA, as amended, requires that “[t]he Commission shall hold a hearing . . . on each application under section 103 or 104b for a construction permit for a facility.”<sup>7</sup> NRC regulations define ESPs as “partial construction permits” and, as such, they are subject to the hearing requirements that are mandated under section 189a of the AEA and “to all procedural requirements in 10 C.F.R. Part 2 which are applicable to construction permits.” 10 C.F.R. § 52.21.

When a proceeding involving an application for a construction permit is uncontested — as is the case here — the procedures to be followed by the Licensing Board to ensure compliance with section 52.21, are described in 10 C.F.R. § 2.104(b)(3) and the Commission’s 2005 answers to a series of certified questions submitted by the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel (*Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5 (2005)). In uncontested proceedings, Boards are directed not to conduct a “*de novo* review”; rather they “should conduct a simple ‘sufficiency’ review of [the] uncontested issues.”<sup>8</sup> More specifically, the Commission has directed Boards to decide “whether the safety and environmental record is ‘sufficient’ to support license issuance. In other words, [B]oards should inquire whether the NRC Staff performed an adequate review and made findings with reasonable support in logic and fact.”<sup>9</sup> Recently, the Commission reiterated the depth of the Licensing Board’s review, in its decision granting, in part, an appeal filed by the NRC Staff in this proceeding.<sup>10</sup> In that decision the Commission explained that Boards “must narrow its inquiry to those topics or sections in Staff documents that it deems most important and should concentrate on portions of

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<sup>7</sup> Atomic Energy Act of 1954, § 189a, 42 U.S.C. § 2239(a)(1)(A) (2000). The Commission delegated its responsibility to hold a hearing in this matter to the Atomic Safety and Licensing Board Panel. *See* Establishment of Atomic Safety and Licensing Board (Mar. 22, 2004) (unpublished). Thereafter, the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel reconstituted the Atomic Safety and Licensing Board presiding over this matter, appointing Administrative Judges Lawrence G. McDade, Chair, Nicholas G. Trikouros, and Richard E. Wardwell, in place of Administrative Judges G. Paul Bollwerk, Chair, Paul B. Abramson, and Anthony J. Baratta. *See* Notice of Reconstitution (Dec. 15, 2005) (unpublished).

<sup>8</sup> *Clinton*, CLI-05-17, 62 NRC at 39.

<sup>9</sup> *Id.*

<sup>10</sup> *See* CLI-06-20, 64 NRC 15 (2006).

the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance.”<sup>11</sup>

In conducting its “sufficiency” review, Licensing Boards are directed to make specific findings.<sup>12</sup> First, with respect to matters involving safety — i.e., issues pursuant to the AEA — Boards must determine whether the application and the record of the proceedings contain sufficient information and the review of the application by the NRC Staff has been adequate to assure that:

- (1) the issuance of an ESP will not be inimical to the common defense and security or to the health and safety of the public (Safety Issue 1); and
- (2) taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having characteristics that fall within the parameters for the site, can be constructed and operated without undue risk to the health and safety of the public (Safety Issue 2).<sup>13</sup>

Second, with respect to matters involving the environment — i.e., issues arising from NEPA — Boards must:

- (1) Determine whether the requirements of Section 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have been complied with in the proceeding.
- (2) Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken.
- (3) Determine, after considering reasonable alternatives, whether the ESP should be issued, denied, or appropriately conditioned to protect environmental values.
- (4) Determine whether the record of these proceedings contains sufficient information to conclude that the NEPA review conducted by the NRC Staff has been adequate.<sup>14</sup>

With regard to the first three (baseline) NEPA issues, the Board must do more than pass on the adequacy of the NRC Staff’s NEPA review. In addition to finding that the Staff has conducted an adequate NEPA review, the Board must determine

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<sup>11</sup> *Id.* at 21-22.

<sup>12</sup> *See* 69 Fed. Reg. at 2636; *see also* 10 C.F.R. §§ 2.104(b)(2), 51.105, 52.21.

<sup>13</sup> *See* 69 Fed. Reg. at 2636.

<sup>14</sup> *See id.*; *see also* 10 C.F.R. § 2.104(b)(3)(i)-(iii) and 10 C.F.R. § 51.105(a)(4). With regard to reasonable alternatives, at the ESP stage a discussion of the benefits, including need for power, is not necessary. *See* 10 C.F.R. § 52.17(a)(2). Further, the Commission has made clear that at the ESP stage “the boards’ ‘reasonable alternatives’ responsibilities are limited” and focus on the consideration and comparison of alternative sites. *Clinton*, CLI-05-17, 62 NRC at 48.

whether the applicable requirements of NEPA have been complied with and, after considering the final balance among conflicting factors, independently determine whether the ESP should be issued, denied, or appropriately conditioned to protect environmental values.<sup>15</sup>

### III. PROCEDURAL BACKGROUND OF THIS PROCEEDING

After this Board received the NRC Staff's FSER<sup>16</sup> and FEIS,<sup>17</sup> we issued an Order requesting additional documents and briefings from the NRC Staff.<sup>18</sup> Specifically, we directed the Staff to provide the following: (1) Site Safety Analysis Report (SSAR); (2) emergency planning information; (3) Environmental Report (ER); (4) NRC Staff Requests for Additional Information (RAI) and SERI's replies thereto, including any written analyses of those replies that were prepared by the NRC Staff; and (5) minutes and/or transcripts of any Advisory Committee on Reactor Safeguards (ACRS) meetings relevant to SERI's ESP Application, and any reports, letters, or memoranda prepared by or on behalf of the ACRS which relate to SERI's ESP Application.<sup>19</sup>

In addition, the Board directed the NRC Staff to provide "a narrative summary identifying all regulatory guidance documents that were used, or are being used, in its review of SERI's ESP Application," and where applicable, to explain "those areas where relevant portions of the published guidance documents were not used" and "why the chosen course of review was followed."<sup>20</sup> Finally, the

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<sup>15</sup> See *id.* at 45.

<sup>16</sup> NUREG-1840, "Safety Evaluation Report for an Early Site Permit (ESP) at the Grand Gulf Site" (Apr. 2006) (NRC Staff Exh. 44) [hereinafter FSER].

<sup>17</sup> NUREG-1817, "Environmental Impact Statement for an Early Site Permit (ESP) at the Grand Gulf ESP Site" (Apr. 2006) (NRC Staff Exh. 45) [hereinafter FEIS].

<sup>18</sup> See Licensing Board Order (Request for Documents and Briefings) (Apr. 19, 2006) (unpublished) [hereinafter April 19 Order].

<sup>19</sup> See *id.* at 2. The NRC Staff sought interlocutory review of, *inter alia*, our request for any written Staff analyses of SERI's replies to RAIs, and our request for any documents prepared by or on behalf of the ACRS which relate to SERI's ESP Application. See NRC Staff Petition for Interlocutory Review of the Licensing Board's May 31, 2006 Order (June 15, 2006). The Commission granted the Staff's request for relief, in part, holding that the Staff need not submit to the Board any predecisional documents relating to SERI's responses to RAIs or any documents produced by the ACRS that the Staff had not reviewed in its consideration of SERI's Application. See CLI-06-20, 64 NRC at 24-26. This Board subsequently issued a Scheduling Order establishing a tentative schedule for the remainder of the proceeding. See Licensing Board Order (Establishing Tentative Case Schedule) (Aug. 1, 2006) (unpublished) [hereinafter August Scheduling Order].

<sup>20</sup> April 19 Order at 2-3. In response to an NRC Staff Motion for Reconsideration and Clarification, we deferred our request for this narrative summary based on representations by the Staff that the FSER

(Continued)

Board directed the Staff to file proposed findings of fact and conclusions of law — to which SERI would be allowed an opportunity to comment — “relevant to the findings which the Board must make in the Mandatory Hearing.”<sup>21</sup>

Following its review of the documents submitted by the NRC Staff and SERI,<sup>22</sup> the Board issued two sets of questions to the Staff regarding its analyses in the FSER and the FEIS. The focus of these questions was perceived inadequacies or inconsistencies with the Staff’s analyses, and/or inconsistencies between statements made by SERI in its own application and statements made by the Staff in the FSER or FEIS.<sup>23</sup> SERI was provided an opportunity to comment on the Staff’s responses to these questions.

With respect to the FEIS, in addition to the specific questions, we directed that the NRC Staff and SERI brief the Board on what they each believed to be our responsibilities under NEPA. Specifically, the Board asked both parties to address

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and FEIS already contained the summary information requested by the Board. *See* NRC Staff Motion for Reconsideration and Clarification of Board Order (Request for Documents and Briefing) Dated April 19, 2006 (May 1, 2006) [hereinafter NRC Staff Motion]; Licensing Board Memorandum and Order (Ruling on Motions for Reconsideration and Clarification) at 7-8 (May 31, 2006) (unpublished). Ultimately, we determined that, while such a narrative summary would have been helpful, and would have facilitated and expedited the Board’s review of the record, it was not essential and we did not require that it be produced.

<sup>21</sup> April 19 Order at 4. *See* NRC Staff’s Proposed Findings of Fact and Conclusions of Law in the Mandatory Hearing (Aug. 11, 2006); System Energy Resources, Inc. Comments on NRC Staff’s Proposed Findings of Fact and Conclusions of Law in the Mandatory Hearing (Aug. 25, 2006).

<sup>22</sup> The SSAR, emergency planning information, the ER, and SERI’s replies to the NRC Staff’s RAIs were all provided by SERI, instead of the Staff. *See* NRC Staff Motion at 4.

<sup>23</sup> *See* Licensing Board Order (Issuing Questions Relating to the Grand Gulf Early Site Permit Safety Evaluation Report) (Sept. 13, 2006) (unpublished) [hereinafter Order on FSER]; Licensing Board Order (Issuing Questions Relating to the Grand Gulf ESP Environmental Impact Statement, Requesting Briefing on Environmental Issues, and Addressing Scheduling Issues) (Oct. 3, 2006) (unpublished) [hereinafter Order on FEIS]. The NRC Staff timely submitted its answers to the Board’s questions pertaining to the FSER. *See* NRC Staff Response to Licensing Board’s Order of September 13, 2006 (Sept. 29, 2006); System Energy Resources, Inc. Comments on NRC Staff Response to Licensing Board’s Order of September 13, 2006 (Oct. 10, 2006).

On October 10, 2006, the NRC Staff filed a Motion for an Extension of Time in which to submit its answers to the Board’s questions relating to the FEIS. The Board granted the Staff’s motion, but given the delay sought, we deemed it necessary to revise the tentative schedule set forth in our August Scheduling Order. *See* Licensing Board Order (Granting the NRC Staff’s Motion for an Extension of Time and Revising Case Schedule) at 2 (Oct. 11, 2006) (unpublished) [hereinafter October Scheduling Order]; Licensing Board Notice (Change in Schedule) (Oct. 17, 2006) (unpublished). The Staff then timely submitted its answers pursuant to our October Scheduling Order. *See* NRC Staff Response to Licensing Board’s Order of October 3, 2006 (Oct. 23, 2006); System Energy Resources, Inc. Comments on NRC Staff Response to Licensing Board’s Order of October 3, 2006 (Oct. 30, 2006).

how the record of *this proceeding* demonstrates that the requirements of Section 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have been satisfied. In addition these briefs shall identify and describe the conflicting environmental factors contained in the record of this proceeding, and analyze the balance among those conflicting environmental factors, with a view toward assisting the Board to determine the appropriate action to be taken regarding whether the ESP should be issued, denied, or appropriately conditioned to protect environmental values.<sup>24</sup>

In addition, the Board requested the parties to discuss

whether, given the number of Staff assumptions and unresolved matters that are documented in the EIS, the Board has been presented with sufficient information to properly balance the harms and benefits of the proposed action so that it may carefully consider the potential significant environmental effects, or to give this project the required “hard look” envisioned by NEPA.<sup>25</sup>

Finally, the Board directed the parties “to describe whether, and if so how, the Board (on the record before us) can conduct the independent assessment and weighing of environmental factors, and the consideration of reasonable alternatives.”<sup>26</sup>

After reviewing the NRC Staff’s answers to our specific questions, SERI’s additional comments, and the requested briefings, the Board set forth nine “hearing issues” that it believed should be addressed by the Staff in its prefiled direct testimony for the evidentiary hearing,<sup>27</sup> and thereafter, during the hearing through live testimony.<sup>28</sup> These nine issues were as follows: (A) site characterization; (B) monitorability of inadvertent radiological releases; (C) seismic impacts; (D) slope and foundation stability; (E) alternative analyses; (F) evaluation of cumulative site impacts; (G) evaluation of plant parameter envelope; (H) continuity between the ESP stage and COL stage; and (I) radiological reviews and confirmatory analyses.

On November 20, 2006, the NRC Staff filed its prefiled testimony on each of

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<sup>24</sup> Order on FEIS at 2-3.

<sup>25</sup> *Id.* at 3.

<sup>26</sup> *Id.*

<sup>27</sup> Although the Board allowed SERI the opportunity to file its own prefiled testimony — after the Board received the NRC Staff’s prefiled testimony — SERI was strongly “urge[d] . . . to work together [with the Staff] in compiling [the Staff’s] testimony,” and that any additional testimony SERI submitted should be supplemental in nature. Tr. at 7-8 (Oct. 31, 2006 prehearing conference).

<sup>28</sup> See Licensing Board Order (Requesting Specific Summary Exhibits and Supplemental Briefs; Identifying Hearing Issues and Requesting Evidentiary Presentations on Specific Issues) (Nov. 6, 2006) (unpublished) [hereinafter Hearing Issues Order].

the nine hearing issues set forth in our November 6, 2006 Order. This written testimony was accompanied by twelve unmarked exhibits. On November 22, 2006, SERI submitted written testimony and exhibits to supplement the Staff's submissions.<sup>29</sup> Thereafter, between November 29 and December 1, 2006, the Board conducted an evidentiary hearing in Rockville, Maryland, in accordance with the provisions of section 189a of the AEA. As noted above, this Initial Decision sets forth the Board's findings of fact and conclusions of law with regard to the uncontested safety and environmental matters relevant to this proceeding, is the final ruling by this Board in this proceeding, and authorizes the Director of Nuclear Reactor Regulation to issue to SERI the ESP for the Grand Gulf site, subject to the conditions set forth herein.<sup>30</sup>

#### IV. FINDINGS OF FACT

##### A. Hearing Issue: Site Characterization

The NRC Staff documented its review of SERI's Application with respect to site characteristics in Chapter 2 of the FSER. The characteristics addressed included: geography and demography; nearby industrial, transportation, and military facilities; meteorology; hydrology; and geology, seismology, and geotechnical engineering. After reviewing SERI's information on site characterization in accordance with the applicable Nuclear Regulatory Commission Issuances (NUREG) and Regulatory Guides (RG), the Staff concluded that SERI's Application included sufficient site characterization details to meet the relevant requirements of 10 C.F.R. § 52.17 and 10 C.F.R. Part 100.<sup>31</sup>

SERI based its descriptions of the regional and site geology, hydrogeology, and geotechnical engineering characteristics on information contained in the GGNS Updated Final Safety Analysis Report (UFSAR), and on three additional borings, four cone penetrometer soundings, two downhole geophysical surveys, and geological field observations made for its ESP Application.<sup>32</sup> Based on its

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<sup>29</sup> We note that the guidance given by the Board during the prehearing conference regarding the form in which the prefiled testimony and exhibits were to be submitted was not followed by the parties. See Tr. at 12-14 (Oct. 31, 2006 prehearing conference). If, in future proceedings, prefiled testimony and exhibits are submitted in disregard to the Board's directions, the parties should anticipate that the hearing may be postponed and, thereafter rescheduled, only after the testimony and exhibits are submitted in accordance with the Board's direction.

<sup>30</sup> See *supra* pp. 34-35; *infra* p. 107.

<sup>31</sup> See FSER at 2-3, 2-6, 2-11 to 2-12, 2-14, 2-24, 2-41, 2-48, 2-58, 2-63, 2-80, 2-118, 2-126, 2-165, 2-189, 2-193, 2-241, 2-246.

<sup>32</sup> See *id.* at 2-126; see also Pre-Filed Testimony of Lori M. Evans, William R. Lettis, and Jeffrey L. Bachhuber on Behalf of [SERI] Concerning Hearing Issue A (Site Characterization) (Nov. 22, 2006) (fol. Tr. at 86) at 7 [hereinafter SERI PFT/HI-A].



review, the NRC Staff determined that SERI's description of regional geology, hydrogeology, and geotechnical engineering factors was adequate, and the Application sufficiently described onsite and offsite ground water use. Accordingly, the Staff concluded that the Application satisfied the requirements set forth in 10 C.F.R. §§ 52.17(a) and 100.20(c)(3).<sup>33</sup>

The Board sought to verify that the applicable guidance documents had been followed and that the requirements of 10 C.F.R. § 52.17 and 10 C.F.R. Part 100 had been met. In evaluating whether the NRC Staff's review was adequate to support its conclusions regarding SERI's site characterization, the Board determined that further clarification of some items was necessary.<sup>34</sup>

### ***1. Regulations and Guidelines Relating to Site Characterization***

By reference to other regulations, 10 C.F.R. § 52.17 requires an ESP applicant to submit, *inter alia*, the information required by 10 C.F.R. § 50.34(a)(12) and (b)(10) and to demonstrate that the characteristics of the proposed site comply with 10 C.F.R. Part 100. The NRC Staff's review of the topics addressed in Hearing Issue A is summarized in FSER § 2.4.12 (Ground Water), § 2.4.14 (Site Characteristics Related to Hydrology), § 2.5.1 (Regional and Site Geology), and § 2.5.4 (Stability of Subsurface Materials and Foundations).<sup>35</sup>

### ***2. Witnesses***

To address the Board's questions relating to site characterization, the NRC Staff and SERI proffered expert witnesses who provided both written and oral testimony.

The NRC Staff presented five witnesses:<sup>36</sup> (1) Mr. Goutam Bagchi, Senior Level Advisor, Civil Engineering and Geoscience, Division of Engineering (DE), Office of Nuclear Reactor Regulation (NRR); (2) Dr. Thomas M. Cheng, Senior Structural/Geotechnical Engineer, Geosciences and Civil Engineering Branch A,

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<sup>33</sup> See FSER at 2-132.

<sup>34</sup> These matters included: (1) geologic stratification; (2) site suitability; (3) hydrogeologic characterization of the site aquifers; (4) slope and foundation stability; and (5) delineation of the aquifer properties.

<sup>35</sup> The NRC Staff utilized a number of guidance documents in its review that are referenced where applicable.

<sup>36</sup> The professional qualifications of Mr. Bagchi, Dr. Cheng, Mr. Klementowicz, and Mr. Vail are set out in NRC Staff Exhibit 13. Dr. Costantino's professional qualifications are set out in NRC Staff Exhibit 14. Dr. Costantino and Mr. Klementowicz did not submit prefiled testimony for Hearing Issue A. See NRC Staff Pre-Filed Testimony Concerning Hearing Issue A: Site Characterization (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-A].

DE, NRR; (3) Dr. Carl J. Costantino, Consulting Engineer, Professor Emeritus, Department of Civil Engineering, The City College of the City University of New York; (4) Mr. Stephen P. Klementowicz, Senior Health Physicist, Division of License Renewal, NRR; and (5) Mr. Lance W. Vail, Senior Research Engineer II, Environmental Technology Division, Pacific Northwest National Laboratory (PNNL). SERI presented six witnesses:<sup>37</sup> (1) Mr. Jeffery L. Bachhuber, Vice President and Senior Principal Engineering Geologist, William Lettis & Associates, Inc.; (2) Ms. Lori M. Evans, Senior Project Manager, ENERCON Services, Inc.; (3) Dr. William R. Lettis, President and Principal Geologist, William Lettis & Associates, Inc.; (4) Mr. Marvin Morris, Consulting Engineer and Analyst, ENERCON Services, Inc.; (5) Mr. Alcuin J. Schneider, Manager of Projects for the New Plant Services Division, ENERCON Services, Inc.; and (6) Mr. George A. Zinke, Project Manager, Business Development, Entergy Nuclear, Inc.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding site characterization relative to SERI's ESP Application.

### ***3. Evidence Presented***

With respect to a general description of site geology, SERI described the “geologic information of both the site area (within an 8 kilometer radius) and the site location (within a 1 kilometer radius) in terms of the (1) site physiography and geomorphology, (2) site geologic history, (3) site geologic conditions, (4) site structure, and (5) geotechnical properties of subsurface materials.”<sup>38</sup>

The NRC Staff reviewed SERI's description of the geologic strata beneath the ESP site and extending west to the Mississippi River in FSER §§ 2.5.1.1.2 (Site Geology)<sup>39</sup> and 2.5.4.1.1 (Detailed Site Investigation Programs).<sup>40</sup> It concluded that SERI provided a thorough and accurate description of the surface features and characteristics for the ESP site. The Staff also concluded that SERI provided an accurate and thorough description of the site area stratigraphy, with emphasis on the younger layers of rock and soils. The Staff, therefore, found that SERI's description of the geological structures was adequate.<sup>41</sup> Nonetheless, the Staff stated that, based on RG 1.132, “Site Investigations for Foundations of Nuclear

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<sup>37</sup>The professional qualifications of each of SERI's six witnesses for Hearing Issue A are set out in SERI Exhibit 1. Mr. Morris, Mr. Schneider, and Mr. Zinke did not submit prefiled testimony for Hearing Issue A. See SERI PFT/HI-A.

<sup>38</sup>NRC Staff Pre-Filed Testimony Concerning Hearing Issue C: Seismic Impacts (Nov. 20, 2006) (fol. Tr. at 78) at 4 [hereinafter NRC Staff PFT/HI-C] (citing FSER at 2-159 to 2-162).

<sup>39</sup>FSER at 2-159 to 2-162.

<sup>40</sup>*Id.* at 2-194 to 2-226.

<sup>41</sup>See NRC Staff PFT/HI-C at 4 (citing FSER at 2-164 to 2-165).

Power Plants,’’ any excavation made during construction will provide an opportunity to obtain additional geologic and geotechnical data. Accordingly, the Staff determined that SERI must perform ‘‘geologic mapping of any future excavations for safety-related structures, evaluate any unforeseen geologic features that are encountered, and notify the NRC no less than 30 days before any excavations for safety-related structures are opened.’’<sup>42</sup> The Staff proposed to document this requirement as Permit Condition 3.<sup>43</sup>

The NRC Staff summarized its review of SERI’s hydrogeologic description of regional and local ground water aquifers in FSER §§ 2.4.12 (Ground Water)<sup>44</sup> and 2.5.4.1.2 (Site Ground Water Occurrence),<sup>45</sup> including the sources and sinks, and the present and projected local and regional ground water use. SERI’s descriptions were based in large part on the GGNS database developed for the UFSAR, and included information from three additional borings, four cone penetrometer soundings, two downhole geophysical surveys, and geological field observations made for its ESP Application.<sup>46</sup>

*a. Clarification of Geologic Stratification*

It appeared to the Board that there were some discrepancies between the nomenclature used in the UFSAR and that used in the more recent ESP investigations, and between the geologic conditions used to describe the seismic and geotechnical engineering parameters, and the hydrogeologic conditions used to describe the site aquifers.<sup>47</sup> These differences were clarified by the testimony of Drs. Costantino and Lettis<sup>48</sup> and summarized in SERI Exhibit 4.<sup>49</sup>

As shown in NRC Staff Exhibits 40<sup>50</sup> and 41,<sup>51</sup> the ESP site is underlain by approximately 60 to 70 feet of loess (windblown deposited sands, silts, and clay). During construction of GGNS Unit 1, uncontrolled earthen fill was placed in the areas where the northern and southern drainage basin swales incised the loess in places where these water courses crossed the site.<sup>52</sup> The loess is underlain by the

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<sup>42</sup> *Id.* at 5 (citing FSER at 2-165).

<sup>43</sup> *See* FSER at 2-164 to 2-165.

<sup>44</sup> *Id.* at 2-126 to 2-132.

<sup>45</sup> *Id.* at 2-226 to 2-227.

<sup>46</sup> *See id.* at 2-126; SERI PFT/HI-A at 7.

<sup>47</sup> *See* Tr. at 103-09.

<sup>48</sup> Drs. Costantino and Lettis explained that the differences were due, in part, to the subtle change in classifications used by the different investigators. Tr. at 104-07.

<sup>49</sup> SERI Exh. 4 (Geologic Correlation Table).

<sup>50</sup> NRC Staff Exh. 40 (SSAR Fig. 2.5-75).

<sup>51</sup> NRC Staff Exh. 41 (SSAR Fig. 2.5-76).

<sup>52</sup> *See* NRC Staff Exh. 40, *supra* note 50; NRC Staff Exh. 41, *supra* note 51.

Upland Complex Alluvium (water-deposited gravel, sand, and finer grained soil), which, in turn, is divided up into two zones — the young alluvium overlying the old alluvium. The old alluvium is denser, stronger material than the young alluvium. The Catahoula Formation, a very stiff, very dense siltstone/claystone sedimentary deposit, is encountered below the Upland Complex at depths of 200 to 225 feet below plant grade. This depth is equivalent to an elevation of approximately 70 feet mean sea level (ft msl).<sup>53</sup>

SERI, through the testimony of Dr. Lettis, clarified that the terrace deposit, shown on the cross sections in NRC Staff Exhibit 24<sup>54</sup> is actually the young alluvium of the Upland Complex and the old alluvium extends part way into what was then termed as the Catahoula Formation in NRC Staff Exhibit 24.<sup>55</sup> The dense alluvium gravels that exist on top of the siltstone and claystone of the Catahoula Formation were originally classified as the top of this formation. The more recent logging conventions group these gravels with the old alluvium to better reflect the actual depositional environment.<sup>56</sup>

For the hydrogeologic conditions, Ms. Evans testified on behalf of SERI that the terms Mississippi River Alluvium, Holocene Alluvium, and Flood Plain Alluvium all describe the same formations. This Holocene Alluvium is composed of a clay/silt alluvium of varying thickness overlying the sand/gravel alluvium.<sup>57</sup> According to the Staff, SERI estimated that the depth of the ground water level ranges from 70 to 100 feet below the ground surface. Regional ground water flow near the ESP site is southwest toward the Mississippi River floodplain at a hydraulic gradient of 0.008 to 0.01.<sup>58</sup>

The NRC Staff accepted SERI's deferral of some parameter measurements to the COL stage and identified COL Action Items 2.5-1 to 2.5-9, which, in whole or in part, will help assure that additional geologic, hydrogeologic, and geotechnical engineering data will be taken at the COL stage to support design analyses.<sup>59</sup>

*b. Potential for Differential Settlements*

The Board questioned whether adverse differential settlements could develop at the ESP site because of: (1) transitioning between native soils and uncontrolled fill placed at the site during GGNS Unit 1 construction; (2) undetected zones of

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<sup>53</sup> See Tr. at 102 (statement of Dr. Lettis).

<sup>54</sup> NRC Staff Exh. 24 (SSAR Fig. 2.4-37).

<sup>55</sup> See Tr. at 134-35.

<sup>56</sup> See *id.* The Board interprets this testimony to mean the same reclassification applies to the upper portion of the Catahoula Formation identified in NRC Staff Exhibits 40 and 41.

<sup>57</sup> See *id.* at 125-26.

<sup>58</sup> See FSER at 2-137.

<sup>59</sup> See *id.* at 2-232 to 2-233, 2-237 to 2-238, 2-240 to 2-241; *id.*, App. A.2, at A-7 to A-8.

foundation soil that do not achieve the required density and strength to support the power plant; (3) the collapse of undetected karst formations; or (4) blast-induced liquefaction from a river barge accident or premeditated action.<sup>60</sup> As mentioned *supra* page 43, uncontrolled earthen fill was placed during construction of GGNS Unit 1 in the northern and southern drainage basin swales that cross the Grand Gulf site. As uncontrolled construction, there is no information on the composition, strength and stiffness properties, or expected behavior of the material under design load conditions.<sup>61</sup> SERI testified, through Mr. Bachhuber, that all of the fill material will be removed from below the footprint areas of safety-related facilities. He also testified that the use of the fill to support non-safety-related facilities, like parking areas and warehouses, will be evaluated at the COL stage to determine its suitability for its proposed purpose.<sup>62</sup>

Dr. Cheng testified, on behalf of the NRC Staff, that SERI committed to satisfying the requirement — listed in the design certification document for several light water reactors — of using a minimum shear wave velocity ( $v_s$ )<sup>63</sup> of 1000 feet per second (fps) as the required strength parameter for an adequate foundation support.<sup>64</sup> Based on the data SERI presented in its ESP Application, Dr. Cheng testified that the old alluvium (at the maximum Plant Parameter Envelope (PPE) bounding embedment foundation depth of about 130 to 140 feet below existing plant grade (elev. -5 ft msl)) has a  $v_s > 1000$  fps.<sup>65</sup> Dr. Cheng further testified that the  $v_s$  of 1000 fps is a site characteristic in the FSER, and noted that SSAR § 2.5.4.6 states that SERI has committed to improving soil beneath the elevation of a selected plant foundation that is found to have a  $v_s$  below the design requirement of 1000 fps.<sup>66</sup>

SERI's witness, Dr. Lettis, clarified that the Upland Complex Alluvium at or below the bottom of the loess deposits — elev. 97 ft msl — can be used to support the proposed power block area (PPBA) on material where the  $v_s$  exceeds 1000 fps.<sup>67</sup> In addition, if the shear velocity criteria are not met at the desired foundation depth, the soils would need to be overexcavated to material exhibiting the 1000 fps criterion or, alternatively, in-situ improvement would have to be applied to the unsuitable layer to provide the equivalent density and strength indicated by

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<sup>60</sup> See Tr. at 137-38.

<sup>61</sup> See NRC Staff PFT/HI-A at 7.

<sup>62</sup> See Tr. at 129.

<sup>63</sup> The shear wave velocity is a geophysical field test parameter that can be used to evaluate the ability of geologic strata to support structures.

<sup>64</sup> See Tr. at 110.

<sup>65</sup> See *id.* at 111-12 (citing NRC Staff Exh. 40, *supra* note 50; NRC Staff Exh. 41, *supra* note 51; NRC Staff Exh. 42 (SSAR Fig. 2.5-77)).

<sup>66</sup> See *id.* at 116-19.

<sup>67</sup> See SERI PFT/HI-A at 7 (citing SERI Exh. 3 (SSAR Site Exploration Locations)).

the desired shear wave velocity.<sup>68</sup> Dr. Lettis also testified that, in accordance with COL Action Item 2.5-3, RG 1.132, and RG 1.138, “Laboratory Investigations of Soils and Rocks for Engineering Analysis and Design of Nuclear Power Plants,” additional investigations will be required at the COL stage to, among other things, measure the variation of  $v_s$  with depth beneath the PPBA to better quantify the depth at which that the Upland Complex Alluvium achieves the minimum  $v_s$  of 1000 fps required for foundation support of the PPBA.<sup>69</sup> The NRC Staff accepted SERI’s deferral of some analyses at the ESP stage and identified COL Action Item 2.5-9, which, in whole or in part, is intended to assure that specific design criteria will be established at the COL stage to incorporate the updated site  $v_s$  values.<sup>70</sup>

The NRC Staff testified that data in SERI’s Engineering Report-02 (ER-02)<sup>71</sup> indicated that some calcareous materials below the plant foundation could be susceptible to the effects of dissolution.<sup>72</sup> The Staff stated that the potential for a karst formation should be determined by (1) searching and investigating the available database of known site materials, and (2) seeking the opinions of recognized experts versed in the area.<sup>73</sup> Likewise, additional borings and laboratory testing should be conducted by SERI at the COL stage to further determine the potential for karst formation beneath the footprint of the power plant foundation.<sup>74</sup> SERI agreed with this approach, but pointed out that calcareous deposits beneath the site are at a minimum depth of 200 feet below the deepest foundation grade considered in the ESP Application.<sup>75</sup> Dr. Lettis and Mr. Bachhuber stated that SERI has already performed a three-part investigation including evaluating: (1) the presence or absence of karst features in the site area; (2) the presence or absence of karst features in outcrop areas of the Vicksburg Group in the site area and site region, including discussions with geologic experts; and (3) the zone of influence of any new proposed foundation on the Vicksburg Group, assuming that dissolution might occur.<sup>76</sup> Each of these evaluations showed that karst development is not present in the site area, that the Glendon Limestone within

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<sup>68</sup> See *id.* at 8; see also Pre-Filed Testimony of William R. Lettis and Jeffrey L. Bachhuber on Behalf of [SERI] Concerning Hearing Issue D (Slope and Foundation Stability) at 7-8 (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/HI-D].

<sup>69</sup> See Tr. at 122-23.

<sup>70</sup> See FSER at 2-241; *id.*, App. A-2, at A-8.

<sup>71</sup> SERI Exh. 8 (Engineering Report: ENTO002-ER-02, Geologic, Geotechnical, and Geophysical Field Exploration and Laboratory Testing, Grand Gulf Nuclear Station, Early Site Permit (Oct. 6, 2003) [hereinafter ER-02]).

<sup>72</sup> See NRC Staff PFT/HI-A at 8.

<sup>73</sup> See *id.* at 8-9.

<sup>74</sup> See *id.* at 9 (citing FSER at 2-233).

<sup>75</sup> See SERI PFT/HI-A at 4-5.

<sup>76</sup> See *id.* at 5.

the Vicksburg Group is not susceptible to dissolution, and, even if it were, it would not affect the power plant at the depths encountered.<sup>77</sup>

The NRC Staff's witness, Dr. Costantino, testified that while nothing presented to date indicates that dissolution of carbonate material is a problem at the ESP site, this potential should be investigated further at the COL stage because, even at the anticipated depth of the limestone, a karst formation could still affect the PPBA due to the size of the plant foundation.<sup>78</sup> Accordingly, SERI must perform a deep boring program in accordance with COL Action Item 2.5-8 to search for purity of the carbonate, and any evidence of dissolution in the Glendon limestone. Specifically, this boring will sample materials below the plant foundation grade to look for any calcareous units, which will then be sampled and chemically analyzed to determine their potential for dissolution. SERI will also look at carbonate-rich zones, like the Glendon limestone, for evidence of historic dissolution.<sup>79</sup> The Staff agrees with the approach that SERI will take in performing the deeper boring program required of COL Action Item 2.5-8.<sup>80</sup>

In regard to blast-induced liquefaction, Dr. Costantino testified that: (1) the soils below the foundation depth are overconsolidated; (2) the foundation depth is deeper than what is normally considered as the cutoff for seismic-induced liquefaction; (3) blast loadings are single-cycle loadings which are much lower than the generally accepted threshold of fifteen cycles required for liquefaction; and (4) there is a very restricted zone due to the long distance between the ESP site and the river where the blast is postulated to occur.<sup>81</sup> While these conditions minimize the likelihood of the facility being affected by soil liquefaction due to seismic vibrations and blasting, Dr. Costantino agreed that this does not rule out buoyant effects on the power plant due to excess pore pressures developed during blast loadings. Dr. Costantino testified, however, that these pressures would only develop in a limited area very close to the blast, but would not be a factor at this site due to the low magnitude of potential blast and the distance between the plant and the river.<sup>82</sup>

Mr. Bachhuber testified that the overconsolidation ratios were based on: (1) laboratory consolidation tests on the Catahoula Formation; (2) cone penetrometer tests through the loess and Upland Complex Alluvium; (3) dynamic testing, including resonant column and torsional shear tests; and (4) the geologic siting of the plant where the materials show higher loadings in the past from alluvium that

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<sup>77</sup> *See id.*

<sup>78</sup> *See Tr.* at 139-43.

<sup>79</sup> *See id.* at 147-48.

<sup>80</sup> *See id.* at 153-56.

<sup>81</sup> *See id.* at 169-71.

<sup>82</sup> *See id.* at 178.

has subsequently eroded from the surface due to historic river incision.<sup>83</sup> While little testing was performed on the loess, Mr. Bachhuber testified that this layer demonstrates cementation due to its fine particle size, and that this true cohesion is supported by his site observations of the stability exhibited in the existing bluff and drainage way slopes. In addition to the factors presented above, Mr. Bachhuber stated that foundation uplift, in the unlikely event that excess pore water pressures did develop, would be counteracted by the frictional resistance against the side walls of the plant foundation.<sup>84</sup>

*c. Hydrogeologic Characterization of Site Aquifers*

The Board questioned the adequacy of the hydrogeologic characterization at the Grand Gulf site to ascertain if sufficient site information is available to determine (1) the need for and effectiveness of operational dewatering, and (2) the impacts on existing structural support for GGNS Unit 1 with construction and operational dewatering.<sup>85</sup>

The NRC Staff indicated that SERI anticipates that some dewatering will be required during construction at the ESP site.<sup>86</sup> The Staff stated that the effects of dewatering during construction on the existing structures will be reviewed during the COL stage under the requirements of 10 C.F.R. Parts 50 and 52, and that there are many engineered solutions to resolve specific dewatering conditions that might arise during construction. Based on the fact that the duration of construction dewatering will be short term and that the safety-related systems, structures, and components (SSCs) of the existing plant are distant from the ESP site boundary, the Staff expects that the potential effect on the structural integrity of GGNS Unit 1 from ground subsidence during dewatering at the ESP site would be temporary and minimal. In addition, the Staff indicated that a dewatering system can be adapted to assure that its impacts on surrounding structures are minimized.<sup>87</sup>

At the hearing, Dr. Costantino testified for the NRC Staff that the inferred ground water table is at an approximate elevation of 60 ft msl.<sup>88</sup> SERI, through the testimony of Dr. Lettis and Mr. Bachhuber, stated that the ESP explorations and logging indicate that the water table is in the Upland Complex Alluvium and that any water in the loess would tend to be perched. Mr. Bachhuber testified further that this information matches with the fact that he did not detect any sign

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<sup>83</sup> See *id.* at 173-79.

<sup>84</sup> See *id.* at 177, 179.

<sup>85</sup> See *id.* at 180-81.

<sup>86</sup> See NRC Staff PFT/HI-A at 6.

<sup>87</sup> See *id.* at 6-7.

<sup>88</sup> See Tr. at 194.



of ground water seepage along the loess slopes of the bluff and perimeter drainage swales.<sup>89</sup>

The NRC Staff confirmed, through the testimony of Mr. Bagchi, that construction dewatering would be likely, but that the need for a permanent dewatering system for operations is going to be reviewed at the COL stage.<sup>90</sup> Ms. Evans, on behalf of SERI, explained that, without knowing the reactor type and footprint of the structure, it would be difficult to say at this point whether or not a permanent drain will be necessary.<sup>91</sup> Ms. Evans and Mr. Bachhuber went on to testify that the ground water inflows for GGNS Unit 1 were controlled with sumps, and that the existing plant has a permanent dewatering system that is only operated on an intermittent basis. As a result, in their opinion, inflow rates for any new facility (shown through precedent excavations for the existing plant), can be handled with conventional techniques.<sup>92</sup> In addition, they testified that the surface elevation of the Catahoula Formation, which controls the level of the unconfined aquifer in the alluvium, is lower under the ESP PPBA, which would cause slightly lower ground water levels and smaller inflows for a possible plant or plants.<sup>93</sup>

According to the NRC Staff, the design of the proposed ESP plant or plants will be based on the ground water elevation at plant grade as a conservative approach. Therefore, there is a large safety factor, even with no dewatering, and larger still if any dewatering is implemented.<sup>94</sup>

The NRC Staff accepted SERI's deferral of some parameter measurements to the COL stage and identified COL Action Items 2.4-2 and 2.4-9 to help assure that, if dewatering will be necessary for the operation of the proposed ESP facility, appropriate steps will take place at the COL stage and beyond.<sup>95</sup>

#### *d. Mississippi River Sediment Characterization*

The Board questioned whether the sediments in the Mississippi River may need to be dredged during construction of the intake and/or outfall structures, and, if so, whether the sediment characteristics need to be specified at the ESP stage to assure there are no economic barriers to handling and disposing of these materials.<sup>96</sup>

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<sup>89</sup> See *id.* at 193-97.

<sup>90</sup> See *id.* at 186-87.

<sup>91</sup> See *id.* at 187.

<sup>92</sup> See *id.* at 188-89.

<sup>93</sup> See *id.* at 189-90.

<sup>94</sup> See *id.* at 190-91 (statement of Dr. Costantino).

<sup>95</sup> See FSER at 2-78, 2-132; *id.*, App. A at A-5, A-6.

<sup>96</sup> See Hearing Issues Order at 4.

The NRC Staff stated that the river intake and outfall are related to the normal operations of the existing plant and are not safety related. Accordingly, the Staff represented that it is not necessary to characterize the sediment deposition rate or associated data.<sup>97</sup> Mr. Bagchi testified that the intake and outfall structures could be constructed without any dredging.<sup>98</sup> Mr. Vail stated that, while there would be some dredging in the embayment area, the construction of a surface diffuser would not necessarily require dredging activities.<sup>99</sup> Mr. Klementowicz testified that sediments in the discharge channel have been sampled as part of the Radiological Environmental Monitoring Program (REMP) and have been tested for plant-produced radionuclides. Several years worth of data were reviewed as part of his testimony.<sup>100</sup> In addition, Staff and SERI witnesses — Mr. Bagchi, Mr. Klementowicz, and Mr. Zinke — testified that if the Mississippi River could not be used for direct intake and outfall due to unfavorable sediment characterization, there are alternative designs that could avoid the use of the river if necessary.<sup>101</sup>

*e. Delineation of Aquifer Parameters To Ascertain Impacts to the Catahoula Aquifer*

The Board questioned whether the characterization of the Catahoula Aquifer should be performed at the ESP stage to assure that impacts to ground water quality that could be caused by ground water extraction would not be a site-limiting factor for the Grand Gulf ESP.<sup>102</sup> To address the Board's concerns, Mr. Vail testified on behalf of the NRC Staff that (1) the Catahoula is a sole-source aquifer that has a special designation within Environmental Protection Agency (EPA) regulations, and that these regulations have specific restrictions on the activities of federal agencies, and (2) the limited characterization data available for this aquifer are insufficient to provide an adequate basis to determine the potential impact.<sup>103</sup> Mr. Vail stated that, in its Application, SERI provided information on the impacts of the existing wells that were understood to be completed into the Catahoula, but there was insufficient information for the Staff to determine whether the drawdowns associated with the incremental water use might induce water of lower quality to enter, either from above or below the Catahoula Aquifer. If, however, the extraction rate was shown to affect the Catahoula, then an alternative

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<sup>97</sup> See NRC Staff PFT/HI-A at 10.

<sup>98</sup> See Tr. at 203-04.

<sup>99</sup> See *id.* at 204-05.

<sup>100</sup> See *id.* at 210.

<sup>101</sup> See *id.* at 212-16.

<sup>102</sup> See *id.* at 216-17.

<sup>103</sup> See *id.* at 217-18.

source of water would need to be identified to replace the incidental water needs at the plant.<sup>104</sup>

SERI, through the testimony of Ms. Evans, stated that there are several alternative options to provide the plant water, including radial wells in the Mississippi River Alluvium aquifer or extracting water directly from the Mississippi River. In addition, Ms. Evans noted that the State of Mississippi requires a withdrawal permit for pumping out of the Catahoula Aquifer. This permit supplements the EPA's requirements as an additional safeguard to protect the aquifer.<sup>105</sup> Mr. Schneider, also on behalf of SERI, testified that the miscellaneous water requirements are approximately 3570 gallons per minute (gpm), and that one radial well could produce approximately 8000 gpm.<sup>106</sup>

The NRC Staff accepted SERI's deferral of the characterization data needed to evaluate the drawdown rates to the COL stage, and identified COL Action Items 2.4-8 and 2.4-9 to assure that this issue is addressed at the COL stage.<sup>107</sup>

#### **4. Board Findings Relating to Site Characterization**

The Board has reviewed the NRC Staff's analysis of SERI's site characterization data, and finds that the Staff has done an adequate review utilizing guidance contained in Review Standard RS-002 (RS-002), "Processing Applications for Early Site Permits," for geography and demography; nearby industrial, transportation, and military facilities; and meteorology. The Board finds that the Staff's review in these areas, as documented in the FSER, meets the requirements of 10 C.F.R. Parts 52 and 100.

The Board notes that SERI has adequately clarified the geologic strata at the site to include loess, Upland Complex Alluvium (consisting of young and old alluvium), and the Catahoula Formation. The dense gravel layer on top of the Catahoula siltstone/claystone was reclassified to be part of the old alluvium to better match its depositional process. The Board also notes that SERI clarified that (1) the strata beneath the Mississippi River Alluvium consists of a clay/silt alluvium overlying the sand/gravel alluvium, (2) the ground water elevation ranges from 70 feet to 100 feet deep below the ground surface, and (3) the ground water flow near the ESP site is toward the Mississippi River floodplain southwest of the ESP site at a hydraulic gradient of about 0.01.

The Board finds that the NRC Staff adequately reviewed SERI's site characterization in accordance with the regulatory guidelines, and agrees that their

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<sup>104</sup> See *id.*

<sup>105</sup> See *id.* at 220-22.

<sup>106</sup> See *id.* at 222-24.

<sup>107</sup> See FSER at 2-131 to 2-132; *id.*, App. A.2, at A-6.

assessment of the geologic and hydrogeologic descriptions provided by SERI are adequate.

In addition, the Board finds that NRC Staff was justified in requiring additional geologic mapping of construction excavations for safety-related structures documented in Permit Condition 3. The Board further finds that the plant foundation can be placed on the Upland Complex below a grade of 97 ft msl (i.e., a depth of about 37 feet below plant grade) wherever the strata meet the design requirement of a  $v_s$  exceeding 1000 fps. We also note that: (1) uncontrolled fill will be removed from all safety-related facilities and evaluated for use at the COL stage for other non-safety-related purposes; (2) a program is in place to assure that the design requirements for foundation support will be verified in the field at the COL stage; (3) the potential for karst formation is minimal based on the existing site investigations, and that this potential will be further confirmed with additional site explorations and testing at the COL stage; and (4) blast-induced liquefaction from a river barge explosion would not likely occur in the site soils. Based on this information, the Board finds that whatever questions remain concerning the potential for differential settlements affecting the integrity of the plant structures may appropriately be investigated at the COL stage and that plant designs can be implemented to minimize any adverse structural impact.

With respect to ground water, the Board notes that SERI has clarified how the site borings and logging indicate that the ground water table under the PPBA is in the Upland Complex Alluvium and that any water encountered in the loess will be isolated and perched. The Board finds that the NRC Staff's review of SERI's Application establishes that ground water control for the proposed ESP plant or plants would be no more, and possibly less, than what was implemented for GGNS Unit 1 (e.g., routine sump pumping for construction control and intermittent underdrain control during operations). The testimony presented was persuasive in demonstrating that any effects of drawdown from the proposed ESP plant or plants should have minimal impact on GGNS Unit 1 due to the limited drawdown and distance between the facilities. If needed, the effects of drawdown can be mitigated with design.

In regard to sediment characterization, the Board finds that there are other design options for providing makeup water and disposing of liquid effluents in the unlikely event that the use of the Mississippi River is precluded due to unfavorable conditions. Therefore, the NRC Staff's conclusion to allow sediment characterization to be deferred to the COL stage is not unreasonable. Thus, the Board finds that the Staff's review was adequate and in accordance with regulatory guidelines.

The Board finds that the Catahoula Aquifer is a sole-source aquifer that has institutional controls, federal and state oversight, and specific requirements on allowable activities to protect the aquifer. We find that this designation will effectively preclude any activities that might impact this sensitive aquifer. The

Board also finds that the NRC Staff's conclusion that there are other options to provide the 3570 gpm of miscellaneous water requirements that could impact the aquifer is well rooted in fact and logic. These options include the Mississippi River and pumping from radial wells in the Mississippi River Alluvium aquifer. The Board finds that the Staff's review was adequate and acceptable in regard to addressing the incidental water needs for the plant, and SERI has adequately described the aquifer characteristics.

In regard to SERI's deferral of some site characterization data and analyses to the COL stage, the Board finds that the NRC Staff appropriately identified COL Action Items 2.4-2, 2.4-8, 2.4-9, and 2.5-1 to 2.5-9, which, in whole or in part, help assure that additional data will be obtained at the COL stage and that specific design criteria will be established to incorporate the updated site characterization values.

In summary, the Board finds that the NRC Staff has adequately reviewed the site characterization data in SERI's ESP Application. The NRC Staff verified that SERI addressed the criteria of RS-002, which are used to assure that the Application meets the requirements of 10 C.F.R. Parts 52 and 100. The Staff accepted SERI's deferral of some parameter measurements to the COL stage and developed appropriate COL Action Items relating to geology, hydrogeology, and geotechnical engineering that will help assure the site characterization outlined in RS-002 will take place at the COL stage. The Board finds that the hearing record described above is sufficient for the Staff to make the conclusions documented in FSER §§ 2.4.12 (Ground Water), 2.4.14 (Site Characteristics Related to Hydrology), 2.5.1 (Regional and Site Geology), and 2.5.4 (Stability of Subsurface Materials and Foundations).

Further, the Board finds that the Staff's review provides reasonable logic to support their conclusions in the following issues: (1) clarification of geologic stratification; (2) site suitability relating to (a) differential settlements in the transition zone between fill material at the site and native geologic strata, (b) undetected zones of foundation material that do not achieve the required density and strength, (c) collapse of undetected karst formation, and (d) blast-induced liquefaction; (3) hydrogeologic characterization of the site aquifers for evaluating construction and operational foundation dewatering needs and impacts; (4) need for and adequacy of Mississippi River sediment characterization; and (5) delineation of the Catahoula Aquifer properties to evaluate water quality impacts caused by proposed ground water extraction of 3570 gpm for incidental plant water needs.<sup>108</sup>

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<sup>108</sup> Other topics related to and initially presented in Hearing Issue A were discussed in separate hearing issues including: (1) evaluating the hydrogeologic radionuclide transport through the subsurface  
(Continued)

Where information in SERI's Application was not sufficient to meet the standards in RS-002, the NRC Staff has verified that it is reasonable and, oftentimes, advantageous to defer collection of the data to the COL stage, and has developed COL Action Items to assure that it will be accomplished prior to an applicant receiving a construction and operating license for this proposed site. Accordingly, the Board finds that the Staff's review of these issues is adequate to conclude that these aspects of the site characterization as presented by SERI are acceptable and meets the requirements of 10 C.F.R. §§ 52.17(a)(1), 100.23(c), and 100.23(d)(4).

#### **B. Hearing Issue: Monitorability of Inadvertent Radiological Releases**

The NRC Staff concluded that, while significant uncertainty exists in SERI's characterization of radionuclide migration — due, in part, to incomplete knowledge of subsurface hydrological properties — this issue can be adequately addressed by eliminating releases of radionuclides to the ground water through the use of proposed Permit Condition 2 (PC-2). PC-2 will require that SERI's design of any new unit's(s') radwaste systems include “features to preclude any and all accidental releases of radionuclides into any potential liquid pathway.”<sup>109</sup>

In evaluating whether the NRC Staff's review was adequate to support its conclusions with respect to SERI's site characterization relating to the hydrogeologic parameters that could affect the transport of radionuclides from accidental releases,<sup>110</sup> the Board questioned whether the suitability of the Grand Gulf site for construction of additional plant or plants hinged on SERI's ability to (1) detect inadvertent releases of radionuclides from plant equipment into the ground and surface water (which, in turn, might also end up impacting site soils and sediments), and (2) determine whether any future detections of radionuclides in these media are the result of historic impacts from the existing facility or are a result of new releases from the proposed plant or plants.<sup>111</sup> If so, it seemed logical to the Board that the existing conditions and transport parameters may need to be

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liquid pathways at the site (*see infra* Part IV.B); (2) review of site characteristics meeting the seismic criteria presented in 10 C.F.R. § 100.23 (*see infra* Part IV.C); and (3) slope and foundation stability of the perimeter bluff (*see infra* Part IV.D).

<sup>109</sup> FSER, App. A.1, at A-2.

<sup>110</sup> To satisfy 10 C.F.R. § 100.20(c)(3), RS-002 indicates that the following hydrological parameters should be identified and described: (1) ground water coefficients of dispersion and adsorption, ground water velocities, travel times, gradients, permeabilities, porosities, and water table elevations or piezometric levels; (2) surface water transport parameters; and (3) potential pathways of contamination to ground water and surface water users. RS-002, Attach 2, at 2.4.13.-2.

<sup>111</sup> *See* Hearing Issues Order at 4-5.

better defined at the ESP stage to assure that there will be a viable mechanism to determine whether the existing plant or any future ESP plant or plants are responsible for potential future impacts.

### ***1. Regulations and Guidelines Relating to Inadvertent Radionuclide Releases***

In accordance with 10 C.F.R. Part 52 and 10 C.F.R. § 100.20(c), in determining the acceptability of an ESP site, the NRC Staff must consider hydrogeologic characteristics. More specifically, 10 C.F.R. § 100.20(c)(3) requires the Staff to address factors important to hydrologic radionuclide transport in the ground water using onsite measurements of the relevant characteristics, including, but not limited to, adsorption and retention coefficients of the geologic strata, ground water velocities, and travel distances to discharge zones. Compliance with 10 C.F.R. Parts 52 and 100 requires that local geologic and hydrological characteristics must be defined, because these parameters may bear on the potential consequences of radioactive materials escaping from a plant.<sup>112</sup>

Section 2.4.13 of Attachment 2 to RS-002 provides guidance to the NRC Staff relating to the issue of hydrogeologic site characterization.<sup>113</sup> This section addresses the ability of the geologic media to delay, disperse, dilute, or concentrate radiological releases (presumably from any source within the plant) with an emphasis on relating the effects of such releases to existing and known future uses of ground water and surface water resources.<sup>114</sup> The Staff's review procedures include independent calculations of transport capabilities and potential pathways for ground water and surface water contamination, and independent calculations of concentrations of radionuclides in the receiving water body.<sup>115</sup>

### ***2. Witnesses***

To address the Board's questions relating to monitorability of inadvertent radiological releases, the NRC Staff and SERI proffered expert witnesses who provided both written and oral testimony.

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<sup>112</sup> See RS-002, Att. 2, at 2.4.13-1.

<sup>113</sup> See *id.*

<sup>114</sup> Section 2.4.13 does not limit this release from the radwaste system, rather it encompasses any accidental release of radioactive liquid effluent from the plant including, among others, the spent fuel storage pool.

<sup>115</sup> See RS-002, Attach. 2, at 2.4.13-2 to -3. RS-002 also states that the Staff should summarize an applicant's and the Staff's estimates of transport functions, compare the resulting values for consistency, and include a statement of the Staff's bases, if necessary.

The NRC Staff presented two witnesses:<sup>116</sup> (1) Mr. Goutam Bagchi; and (2) Mr. Stephen P. Klementowicz. SERI presented three witnesses:<sup>117</sup> (1) Ms. Lori M. Evans; (2) Dr. William R. Lettis; and (3) Mr. Marvin Morris.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the impacts of accidental releases of liquid effluents to ground and surface water relative to SERI's ESP Application.

### **3. Evidence Presented**

The NRC Staff reported in FSER § 2.4.13 that SERI used the GGNS UFSAR analysis for accidental releases of liquid effluents, even though the proposed ESP site is almost one-half mile west of GGNS Unit 1 toward the Mississippi River. SERI argued that the hydrogeologic characteristics of the site have not changed since the GGNS UFSAR and that the data therein were adequate to characterize the ESP site at this time.<sup>118</sup> The Staff stated that SERI performed a new screening analysis to identify the radionuclides of interest that should be considered in a more detailed accidental release analysis at the COL stage. SERI estimated general transport pathways and travel times for the radionuclides of interest, using either aquifer values from the UFSAR (Sr-90 and Cs-134/137) or literature values for the other radionuclides of interest (Co-60, Fe-55, and Ni-63).<sup>119</sup>

Even with this information, however, the NRC Staff concluded that significant uncertainty exists in the characterization of radionuclide migration due to the “incomplete knowledge of subsurface hydrological and chemical properties and the likely composition of the radwaste effluent.”<sup>120</sup> The Staff added that a more reliable estimation of radionuclide migration to surface waters via subsurface pathways should be made at the COL stage when the reactor design is selected, and additional detail related to the design and locations of the relevant structures and components are known. The Staff stated that SERI should be required to

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<sup>116</sup>The professional qualifications of both of the NRC Staff's witnesses for Hearing Issue B are set out in NRC Staff Exhibit 13. *See also* NRC Staff Pre-Filed Testimony Concerning Hearing Issue B: Monitorability of Inadvertent Radiological Releases (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-B].

<sup>117</sup>The professional qualifications of each of SERI's three witnesses for Hearing Issue B are set out in SERI Exhibit 1. *See also* Pre-Filed Testimony of Lori M. Evans, William R. Lettis, and Marvin Morris on Behalf of [SERI] Concerning Hearing Issue B (Monitorability of Inadvertent Radiological Releases) (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/HI-B].

<sup>118</sup>*See* FSER at 2-132.

<sup>119</sup>*See id.* at 2-135, 2-137 to 2-139.

<sup>120</sup>*Id.* at 2-139.



perform updated screening of radionuclides at that time, and that the appropriate subsurface hydrological characterization be completed.<sup>121</sup>

The NRC Staff determined that these issues — identified in FSER § 2.4.13 — could be resolved if there were no releases of radionuclides to the ground water. The Staff proposed to achieve this goal by including PC-2 in the ESP for the Grand Gulf site. This permit condition will require SERI to include in any facility to be built design features that will preclude any and all radionuclide releases into any liquid pathway. With this condition, the Staff concluded that SERI would meet the requirements set forth in 10 C.F.R. §§ 52.17(a) and 100.20(c)(3).<sup>122</sup>

With respect to the feasibility of SERI satisfying the requirements of PC-2, the NRC Staff stated its belief that it would be technically feasible to design engineered barriers and other hydraulic conditions to preclude any and all accidental releases into any liquid pathway from the radwaste systems.<sup>123</sup> However, when questioned by the Board, Mr. Bagchi, for the NRC Staff, was not able to indicate how the absolute requirement in PC-2, i.e., that “any and all” releases be precluded, could be attained.

Mr. Bagchi stated that “in reality,” PC-2 “can be achieved through design,”<sup>124</sup> and that a robust design and facility location will provide “reasonable assurance” that the radwaste facility will not fail and that locating the facility on the PPBA “enhances containment” of spillage.<sup>125</sup> Mr. Bagchi, however, then seemingly contradicted this statement, when he later said that, if the design is based on RG 1.143, “Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants,” it would achieve ALARA (“as low as reasonably achievable”), a criterion that falls short of precluding “any and all” releases as stated in PC-2.<sup>126</sup> He also admitted that the requirement to preclude “any and all” radionuclide releases was “probably a little too strong.”<sup>127</sup>

A number of potential engineered features to assist in containment were described by Mr. Bagchi, including intermediate sumps, curbs, retention dykes, elevated thresholds with flow drains routed to the liquid radwaste treatment system, and guard pipes.<sup>128</sup> He testified that, with over several thousand reactor years’ worth of operating experience to date, there has never been any accidental liquid radioactive release from radwaste facilities, and any such release would be

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<sup>121</sup> See *id.* at 2-139 to 2-140.

<sup>122</sup> See *id.* at 2-140.

<sup>123</sup> See NRC Staff PFT/HI-B at 3.

<sup>124</sup> Tr. at 237, 243.

<sup>125</sup> *Id.* at 230.

<sup>126</sup> *Id.* at 262-63.

<sup>127</sup> *Id.* at 237.

<sup>128</sup> See *id.* at 232.

so rare of an event that it could not be directly associated with the plant where the event occurred.<sup>129</sup> It was Mr. Bagchi's position that it is not appropriate at the ESP stage to establish a plan to monitor ground water, and that the need for a ground water monitoring system should be reviewed at the COL stage.<sup>130</sup>

#### **4. Board Findings Relating to Monitorability of Inadvertent Radiological Releases**

The NRC Staff proposes to rely on PC-2 to overcome the uncertainty in the characterization of radionuclide migration that is caused, in part, by the lack of updated site-specific measurements that pertain specifically to the ESP site. The Board finds that the NRC Staff's conclusion that, with respect to PC-2, a robust design will provide "reasonable assurance" that the radwaste facility will not fail, and that there is a high likelihood the radionuclides will not contaminate the ground or surface water, is well founded in logic and fact. Also, PC-2 is consistent with 10 C.F.R. Part 50, Appendix A — General Design Criteria for Nuclear Power Plants (GDC) — which requires a design to include measures to "control suitably" the release of radioactive materials,<sup>131</sup> and RG 1.143, which recommends that design and construction of the radwaste and steam generator blowdown systems provide assurances that radiation exposures are as low as reasonably achievable and that the systems are designed to quality standards that enhance reliability, operability, and availability.<sup>132</sup>

However, the anticipated performance expressed by the Staff in the hearing and the language of the regulations are far less rigorous than the absolute nature of PC-2 — which precludes "any and all" radionuclide release.<sup>133</sup> Based on this, the Board concludes that the design requirements stated in PC-2 are meant to be a goal of the design feature rather than specific performance criteria. Accepted in that context, the Board supports this design goal as a step to protect the safety and health of onsite and offsite personnel. With this understanding of the meaning of PC-2, the Board finds that PC-2 does not fully resolve the uncertainty in the

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<sup>129</sup> See *id.* at 230-31. Nonetheless, it is not clear to the Board how to reconcile this testimony with the reported releases documented by the NRC Staff in the September 1, 2006 *Liquid Radioactive Release Lessons Learned Task Force Final Report*, of which the NRC Staff's witness, Mr. Klementowicz, was a member.

<sup>130</sup> See *id.* at 232, 240.

<sup>131</sup> 10 C.F.R. Part 50, App. A, GDC 60.

<sup>132</sup> See Tr. at 262-63.

<sup>133</sup> The Board could not find any statement or reference in RG 1.143 that sets a goal of precluding radionuclide release. In fact, the introduction to RG 1.143 references GDC 60, which as noted in text, requires the design to "include means to control suitably" the release of radioactive materials. The language in GDC 60 (see *supra* note 131 and accompanying text) more closely mirrors the "ALARA" standard, rather than the "preclude any and all" standard found in PC-2.

characterization required to address radionuclide transport, and as such, PC-2 does not inherently resolve the issues discussed in FSER § 2.4.13.<sup>134</sup>

The Board questioned the feasibility of deferring further testing of aquifer characterization and/or the precise wording of PC-2 to the COL stage when the reactor design will be selected. At that point, the likely composition of the radwaste effluent will be known and additional details related to the design and locations of the relevant structures and components will be available to focus the characterization studies needed to resolve the transport issue.<sup>135</sup> The Staff believes that there may be instances when it is impossible to discriminate between existing impacts and future releases.<sup>136</sup> However, SERI's witness, Mr. Morris, testified that two offsite REMP monitoring wells — located approximately 2100 feet west of GGNS Unit 1 and approximately 285 feet outside the western boundary of the proposed reactor building envelope<sup>137</sup> — had not measured any radiological concentrations above the laboratory detection levels.<sup>138</sup> It was the expert opinion of Mr. Klementowicz, based on this site experience, that potential ground water impacts from a new plant referencing an ESP license from this application could be separated from any impacts from the existing plant.<sup>139</sup>

Based on the expert opinion that ground water impacts could be traced to the responsible plant, the Board finds that there is no immediate need at the ESP stage to quantify the aquifer parameters beyond the characterization that was done for the GGNS ESP (i.e., summary of the information from the initial plant design as documented in the UFSAR and the additional data obtained as a result of the ESP investigations). The Board also finds that it is not unreasonable and, in fact, possibly advantageous to defer further characterization of radionuclide transport to the COL stage when design details and facility locations are available to focus the additional investigations.

The Board notes that PC-2, as now written, only applies to radwaste systems.<sup>140</sup>

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<sup>134</sup> *Contra* FSER at 2-139 to 2-140.

<sup>135</sup> As a starting point, the Board believes that the principal reason to require detailed characterization at the ESP stage is to be sure that the existing impacts and transport characteristics at the proposed site are not so unfavorable that they would preclude the use of the site for an ESP plant or plants, and to assure that potential future releases can be traced to the responsible plant (i.e., either the existing GGNS Unit 1 or an ESP plant) and to the specific source within the responsible plant.

<sup>136</sup> *See* Tr. at 258 (statement of Mr. Klementowicz).

<sup>137</sup> *See* SERI Exhibit 31 (SSAR Site Exploration Locations).

<sup>138</sup> *See* Tr. at 274-75.

<sup>139</sup> *See id.* at 276-78.

<sup>140</sup> The Board assumes that the "radwaste systems" in PC-2 includes all the storage facilities and conveyance systems to which RG 1.143 applies, including the effluent discharge line and the steam generator blowdown system. As presented in RG 1.143, other systems that might contribute to the release of radionuclides to liquid pathways would include condensate storage tank for Boiling Water

(Continued)

It seems likely that the vast majority of potential radiological releases at a plant would be associated with the radwaste systems,<sup>141</sup> and that the design of the radwaste components in accordance with the goals of PC-2 will help to assure that radiological exposures to the public would be as low as reasonably achievable.

The restriction of PC-2 to only the radwaste systems, however, raises a dichotomy between its stated goal of precluding “any and all” radionuclide releases, on the one hand, and its application to only those releases from the radwaste system, on the other. But more importantly, it is not clear from the evidence presented to the Board that the review requirements in RS-002 have been followed. RS-002 does not include a limitation on the source of radionuclides to be considered, and, as such, its review encompasses the release from any storage facility or conveyance system containing radioactive material that has the potential to release radionuclides to liquid pathways. Therefore, even with PC-2, the review criteria of RS-002 still applies to SERI’s proposed ESP, because there are other storage facilities and conveyance systems that contain radioactive materials that might, eventually, lead to a release of radionuclides to liquid pathways.

The NRC Staff’s testimony at the hearing demonstrates to the Board, however, that the uncertainty relating to the inadvertent releases of radionuclides discussed in FSER § 2.4.13 is still unresolved, even with the proposed PC-2. Based on a review of the record and the Staff’s testimony, the Board deems it reasonable and preferable to defer to the COL stage the radiological transport characterization required by 10 C.F.R. § 100.20(c)(3), and the independent Staff calculations recommended in RS-002, Attachment 2, § 2.4.13. To be consistent with 10 C.F.R. §§ 52.17(a) and 100.20(c)(3), and to help achieve the goals of PC-2, it seems logical to the Board that the design requirements of this permit condition should be expanded beyond just the radwaste systems to include all storage facilities and conveyance systems outside of containment that contain radionuclide material, and that an evaluation of the need for further site characterization with regard to possible ground water contamination by radwaste be added as a COL Action Item.<sup>142</sup>

The NRC Staff represented that ground water monitoring will not be required at the ESP stage for any proposed new plant or plants.<sup>143</sup> The Staff stated that all

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Reactors, spent fuel handling and storage systems, fuel pool water cleanup system, reactor water cleanup system, condensate cleanup system, CVCC system, reactor coolant and auxiliary building equipment drain tanks, sumps and floor drains for collecting liquid wastes, boron recovery system, building ventilation systems, main condenser circulating or component cooling water systems, whose components, if any, are outside primary containment.

<sup>141</sup> See RG 1.143.

<sup>142</sup> While the Board believes that it would be logical to expand the design requirements of PC-2 beyond the radwaste systems, we are only suggesting, not ordering, that it be done, because we do not believe that such action is required by existing law and regulations.

<sup>143</sup> See Tr. at 231-33 (statement of Mr. Bagchi) (citing NRC Staff Exh. 19, at 51-52 (Hearing Issue I

radwaste tanks — both inside and outside the plant — will have provisions to monitor liquid levels, but there was no elaboration as to how this monitoring would preclude releases, rather than simply indicating when a release occurred. Nor was it explained how effective these monitoring devices would be in detecting a small leak or weep from tanks and ancillary pipelines. In fact, the Staff's witnesses admitted that the radwaste systems would not be leakproof, and that even with design-in-depth and other types of safeguards, accidents might happen.<sup>144</sup> Nonetheless, given that there are no indications of existing site impacts from radwaste effluents, the Board concludes that it is not necessary to perform further site characterization of radionuclide transport parameters at the ESP stage, because, based on the compelling testimony from the Staff, any impacts will be traceable back to the responsible plant.

In all other criteria related to FSER § 2.4.13, the NRC Staff demonstrated that SERI has provided sufficient information to meet the requirements of 10 C.F.R. §§ 52.17(a) and 100.20(c)(3).

### C. Hearing Issue: Seismic Impacts

The Board sought additional information regarding the NRC Staff's review and analysis of site seismicity. In the FSER, the Staff documented that SERI provided a detailed description of seismological properties in SSAR § 2.5.<sup>145</sup> This description included documentation of ESP site characteristics relating to: (1) regional and site geology associated with seismic activity; (2) ground motions resulting from possible earthquakes inside and outside the site region; and (3) potential for tectonic fault rupture.<sup>146</sup> To better understand the depth and extent of the Staff's review of seismology, the Board directed the Staff to summarize and discuss their analysis in each of these three areas.<sup>147</sup>

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Hearing Presentation)). However, the Board believes that there is a reasonable likelihood that onsite ground water monitoring — downgradient of the radwaste system and other radiological storage facilities and conveyance systems — might be a necessary tool during operations to verify compliance with PC-2. The Board notes that nothing in the written or oral testimony refutes this possibility.

<sup>144</sup> See *id.* at 235-36. Although the Board is not suggesting that a groundwater monitoring plan *must* be developed at the ESP stage, potentially such a plan may be needed in the future to verify SERI's compliance with PC-2. In this regard, while it seems apparent that it is not the goal of a ground water monitoring program to compensate for design deficiencies or to prevent radionuclide releases, its purpose is to verify compliance with PC-2 and help identify the specific sources of any resulting impacts for implementation of corrective actions.

<sup>145</sup> See FSER at 2-143.

<sup>146</sup> See *id.* (citing SSAR §§ 2.5.1 to 2.5.3).

<sup>147</sup> See Hearing Issues Order at 5.

### **1. Regulations and Guidelines Relating to Seismology**

ESP applicants must provide a thorough characterization of the seismological characteristics of a proposed site and its environs to allow, *inter alia*, an estimate of the Safe Shutdown Earthquake (SSE) ground motion and “to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site.”<sup>148</sup> The seismic siting factors for design must also include the potential for surface tectonic deformations.<sup>149</sup>

### **2. Witnesses**

To provide summary and discussion relating to seismic impacts, the NRC Staff and SERI proffered expert witnesses who provided both written and oral testimony.

The NRC Staff presented one witness, Dr. Yong Li, Senior Geophysicist, DE, NRR.<sup>150</sup> SERI presented two witnesses:<sup>151</sup> (1) Mr. Jeffery L. Bachhuber; and (2) Dr. William R. Lettis.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding regional and site geology relative to SERI’s ESP Application.

### **3. Evidence Presented**

Dr. Li testified that in its review, the NRC Staff sought to determine whether SERI had complied with applicable regulations and conducted its investigations with the level of thoroughness required by 10 C.F.R. § 100.23.<sup>152</sup> The NRC Staff performed its review of the site seismology in accordance with the applicable sections of NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants,” and RG 1.165, “Identification and Characterization of Seismic Sources and Determination of [SSE] Ground

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<sup>148</sup> 10 C.F.R. § 100.23(c).

<sup>149</sup> See 10 C.F.R. § 100.23(d).

<sup>150</sup> Dr. Li’s professional qualifications are set out in NRC Staff Exhibit 13. See also NRC Staff PFT/HI-C.

<sup>151</sup> The professional qualifications of both of SERI’s witnesses for Hearing Issue C are set out in SERI Exhibit 1. See also Pre-Filed Testimony of William R. Lettis and Jeffrey L. Bachhuber on Behalf of [SERI] Concerning Hearing Issue C (Seismic Impacts) (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/HI-C].

<sup>152</sup> See NRC Staff PFT/HI-C at 3.

Motion.’’ As presented in the FSER, SERI provided detailed information on the regional and site geology, vibratory ground motion, and surface faulting.<sup>153</sup>

*a. Regional and Site Geology*

According to RG 1.165, to develop the vibratory ground motion design for a new nuclear power plant, applicants should ‘‘update the[ir] geological, seismological, and geophysical database and evaluate any new data to determine whether revisions’’ to their selected seismic source models are necessary.<sup>154</sup> The NRC Staff, therefore, focused its review on data published since the late 1980s that could indicate a need for change to SERI’s selected seismic source model.<sup>155</sup> To thoroughly evaluate the geological and seismological information, Dr. Li testified that the Staff obtained the assistance of the U.S. Geological Survey (USGS).<sup>156</sup>

Dr. Li explained that the NRC Staff reviewed SERI’s descriptions of ‘‘physiographic provinces within the site region, the Mississippi [River] embayment and Gulf Coast Basin, tectonic evolution for major geologic features, and the stratigraphy of the site region.’’<sup>157</sup> SERI discussed eight seismic source zones and associated seismic activities and nontectonic structural features surrounding the ESP site. As part of this, SERI considered the Saline River Seismic Zone (SRSZ) and the New Madrid Seismic Zone (NMSZ) in its investigation, even though the latter is outside the 200-mile radius recommend in RG 1.165. Dr. Li testified that the Staff reviewed SERI’s characterization of the tectonic features in the Electric Power Research Institute (EPRI) seismic source model from the late 1980s focusing on these two seismic zones, and found them to be acceptable.<sup>158</sup>

According to Dr. Li, the geologic and seismic information presented in support of the vibratory ground motion analysis in SSAR § 2.5.1 and the SSE spectrum provided in SSAR § 2.5.2, resulted from SERI’s geologic investigations performed in progressively greater detail as they approached the site. As a result of their investigations, no geologic faults were identified within the 8-kilometer radius of the site area.<sup>159</sup>

Dr. Li testified that based on the well-documented regional and local geological descriptions, the NRC Staff concluded that SERI had provided a relevant, accurate, and thorough description of the regional site geology and seismology, and that the addition of two seismic sources — SRSZ and NMSZ — to the site seismic hazards

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<sup>153</sup> See FSER at 2-144 to 2-162.

<sup>154</sup> NRC Staff PFT/HI-C at 3 (citing FSER at 2-163).

<sup>155</sup> See *id.* (citing FSER at 2-163).

<sup>156</sup> See *id.*

<sup>157</sup> *Id.* at 4 (citing FSER at 2-163).

<sup>158</sup> See *id.* (citing FSER at 2-163 to 2-164).

<sup>159</sup> See *id.* (citing FSER at 2-159 to 2-162).

estimate further enhanced the conservative assessment of ground motions for the ESP site. Based on this, the Staff concluded that SERI “accurately characterized the tectonic features and their correlations with the regional seismicity.”<sup>160</sup> Also, according to Dr. Li, the Staff considered a seismic catalog, which SERI revised in response to a Staff question, “and determined that SERI had provided an accurate and thorough description of the regional seismicity.”<sup>161</sup>

*b. Vibratory Ground Motion*

Dr. Li testified that SERI outlined the major seismotectonic sources and materials in the site region, and described: “(1) its determination of the ground motions at the ESP site resulting from possible earthquakes inside or outside the site region; (2) the characteristics of seismic sources used in the ESP site seismic hazard calculation; (3) the procedure for the probabilistic seismic hazard analysis (PSHA) and its results; (4) site characteristics in seismic wave transmission; and (5) site responses at the ESP site.”<sup>162</sup> Dr. Li stated further that SERI adequately “summarized the development of the SSE and operating-basis earthquake ground motion for the ESP site.”<sup>163</sup>

In addition to describing the characteristics of all seismic sources in the ESP site region, Dr. Li testified that SERI: (1) “reviewed the original 1986 EPRI earthquake source model related to the ESP site and found that the model adequately captures the regional earthquake source characteristics and the uncertainty associated with the source model at the time the model was developed”; (2) “addressed the SRSZ and updated NMSZ and their associated parameters resulting from recent studies”; (3) “summarized the EPRI seismic source model and the seismic source information for the seismic sources in the site region, [including the] maximum magnitude, closest distance to the ESP site, probability of activity, and an indication as to whether new information regarding the seismic source has been identified since the original EPRI seismic hazard analysis”; and (4) “described the effect of updating the earthquake catalog on the EPRI-Seismicity Owners Group seismicity parameters.”<sup>164</sup>

The SSE for a site “is characterized by both horizontal and vertical free-field ground motion response spectra at the free ground surface.”<sup>165</sup> In its review, Dr. Li testified that the NRC Staff considered the regulatory requirements of 10 C.F.R. §§ 52.17(a)(1)(vi), 100.23(c), and 100.23(d), and used the applicable

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<sup>160</sup> *Id.* (citing FSER at 2-164).

<sup>161</sup> *Id.* (citing FSER at 2-164).

<sup>162</sup> *Id.* at 6 (citing FSER at 2-166).

<sup>163</sup> *Id.* (citing FSER at 2-166).

<sup>164</sup> *Id.* at 6-7 (citing FSER at 2-166 to 2-170).

<sup>165</sup> 10 C.F.R. § 100.23(d)(1).



sections of NUREG-0800 and RG 1.165 to guide its review. According to Dr. Li, section 2.5.2 of NUREG-0800 provides guidance concerning the evaluation of the proposed SSE, and RG 1.165 provides guidance regarding the use of PSHA to address the uncertainties inherent in estimating ground motion at the ESP site.<sup>166</sup>

Based on the facts and reasoning set forth above with respect to vibratory ground motion, the NRC Staff concluded that: (1) SERI provided a thorough characterization of the seismic sources surrounding the site, as required by 10 C.F.R. § 100.23; (2) SERI adequately addressed the uncertainties inherent in the characterization of these seismic sources through a PSHA, which follows the guidance provided in RG 1.165; (3) the controlling earthquakes and associated ground motion derived from SERI's PSHA are generally consistent with the seismogenic region surrounding the ESP site; and (4) SERI's SSE was determined in accordance with RG 1.165 and section 2.5.2 of NUREG-0800. Accordingly, the Staff concluded that the proposed ESP site is acceptable from a geological and seismological standpoint and meets the requirements of 10 C.F.R. § 100.23.<sup>167</sup>

### *c. Surface Faulting*

Dr. Li described the investigations that SERI performed to determine the potential for surface faulting at and within an 8-kilometer radius of the ESP site. Specifically, he noted that the information SERI used in its surface faulting studies came from three primary sources: (1) previous research for the existing GGNS; (2) published and unpublished geologic maps from USGS, the State of Mississippi, and the University of Memphis; and (3) seismicity data compiled from published journal articles.<sup>168</sup> Dr. Li also indicated that SERI performed field reconnaissance and interpreted aerial photography, which it then used to produce an updated map of surficial deposits and geomorphology for the site location. The new map was then used in combination with other preexisting maps to verify the absence of subsurface faulting or other forms of tectonic and nontectonic deformation by showing the surface of buried stratigraphic layers.<sup>169</sup>

Dr. Li stated that the NRC Staff and its USGS advisors “visited the ESP site and met with [SERI] to assist in confirming [SERI’s] interpretations, assumptions, and conclusions concerning potential surface deformation.”<sup>170</sup> Specific areas of the Staff’s review included the geological evidence or absence of evidence of surface deformation, correlation of an earthquake with capable tectonic sources,

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<sup>166</sup> See NRC Staff PFT/HI-C at 7.

<sup>167</sup> See *id.* at 8-9 (citing FSER at 2-189).

<sup>168</sup> See *id.* at 9 (citing FSER at 2-190).

<sup>169</sup> See *id.* at 9-10 (citing FSER at 2-190).

<sup>170</sup> *Id.* at 10 (citing FSER at 2-192).

characterization of capable tectonic sources, zones of Quaternary deformation requiring detailed fault investigation, and the potential for surface tectonic deformation at the site.<sup>171</sup> Dr. Li testified that the Staff reviewed SERI's summary of previous site investigations — recorded in the UFSAR — along with SERI's recent investigations. The Staff did not observe any evidence of Quaternary tectonic activity near the site and concluded that SERI had adequately investigated the potential for surface deformation in the site area.<sup>172</sup> The Staff and USGS also “concluded with [SERI's] conclusion that no evidence of Quaternary folding or faulting can be associated with these local faults.”<sup>173</sup>

In its review of the geological and seismological aspects of the ESP site, the NRC Staff considered the pertinent information gathered by SERI during the regional and site-specific geological, seismological, and geophysical investigations. The Staff concluded that SERI performed its investigations in accordance with 10 C.F.R. § 100.23 and RG 1.165, and provided an adequate basis to establish that no capable tectonic sources exist in the site vicinity that would cause surface deformation in the site area. The Staff concluded that the ESP site is suitable from the perspective of tectonic surface deformation. In addition, the Staff found that SERI appropriately considered the most severe surface deformation historically reported for the site and surrounding area, with sufficient margin for uncertainties, and that the Application satisfies GDC 2 in that respect.<sup>174</sup>

#### **4. Board Findings Relating to Seismic Impacts**

We find that the NRC Staff appropriately reviewed SERI's description of regional and local geology specifically related to seismology, and had an adequate basis to conclude that SERI's Application provided a relevant, accurate, and thorough description of the site characteristics in this matter. Based on the facts and reasoning set forth above, we find that the Staff had sufficient basis to conclude that SERI identified and appropriately characterized all the significant seismic sources for determining the SSE for the ESP site — in accordance with RG 1.165 and NUREG-0800 § 2.5.1 — and, therefore, satisfied the associated requirements of 10 C.F.R. § 100.23(c) and GDC 2 of 10 C.F.R. Part 50, Appendix A. The Staff reasonably concluded that the proposed ESP site meets the requirements of 10 C.F.R. § 100.23, and is acceptable from a geological and seismological standpoint.

We further find that with respect to vibratory ground motion, the NRC Staff

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<sup>171</sup> See *id.* (citing FSER at 2-193).

<sup>172</sup> See *id.* (citing FSER at 2-193).

<sup>173</sup> *Id.* (citing FSER at 2-193).

<sup>174</sup> See *id.* at 10-11 (citing FSER at 2-193); see also 10 C.F.R. Part 50, App. A, GDC 2.

reasonably concluded that: (1) SERI adequately followed the guidance provided in RG 1.165 in addressing the uncertainties in the seismic sources through a PSHA; (2) the derived earthquakes and associated ground motion are generally consistent with the seismogenic region surrounding the ESP site; and (3) SERI's SSE was determined in accordance with RG 1.165 and section 2.5.2 of NUREG-0800.

Also, the Board finds that the NRC Staff had a sound basis to conclude that SERI performed site seismology investigations in accordance with 10 C.F.R. § 100.23 and RG 1.165 and provided an adequate basis to establish that no capable tectonic sources exist in the site vicinity that would cause surface deformation in the site area. We also find that it was appropriate for the Staff to conclude that the site is suitable from the perspective of tectonic surface deformation, that SERI appropriately considered the most severe surface deformation historically reported for the site and surrounding area, and that the Application satisfies the requirements of 10 C.F.R. § 100.23 and GDC 2 of 10 C.F.R. Part 50, Appendix A.

Based on the facts and reasoning set forth above, we find that FSER § 2.5 adequately considered all factors relevant to seismology for the Grand Gulf ESP site. Further, we find that the NRC Staff's evaluation has reasonable basis in logic to support its findings. Accordingly, we find that the Staff's review of these matters was adequate.

#### **D. Hearing Issue: Slope and Foundation Stability**

The Board sought further information regarding the NRC Staff's review and analysis of the geotechnical stability of the bearing strata at the ESP PPBA and the exposed earthen slopes surrounding and crossing the ESP PPBA.<sup>175</sup> Relating to foundation support, the Staff reviewed SERI's Application in accordance with RS-002 guidelines, and concluded that SERI's description of liquefaction potential, seismic stability, bearing capacity, potential for settlement, and lateral earth pressure for the ESP site meets the regulatory guidance and was, therefore, acceptable.<sup>176</sup> With regard to slope stability, the Staff considered the regulatory requirements in 10 C.F.R. § 100.23 and specific guidance in section 2.5.5 of Attachment 2 to RS-002 to evaluate SERI's characterization. Based on this review, the Staff found that SERI provided a sufficient description of the slopes to support its Application, and concluded that the slope stability assessment presented in SSAR § 2.5.5 was acceptable.<sup>177</sup>

With respect to the NRC Staff's safety review of slope and foundation stability,

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<sup>175</sup> See Hearing Issues Order at 5-6.

<sup>176</sup> See FSER at 2-240 (citing SSAR §§ 2.5.4.4 to 2.5.4.5).

<sup>177</sup> See *id.* at 2-243 to 2-246.

the Board sought to verify that the guidance in RS-002 had been followed, and that the requirements of 10 C.F.R. §§ 52.17(a)(1), 100.23(c), and (d)(4) had been met. Specifically, the Board directed the Staff to summarize the geotechnical information that supported its conclusions regarding the slope and foundation stability of the ESP site. The Board also sought to verify that the Staff had reviewed the potential for retrogressive slope displacements of the 60-foot-high bluff surrounding the PPBA, which could potentially impact the integrity of the proposed power plant, storage facilities, and pipelines and, in turn, could lead to inadvertent releases of radionuclides to liquid pathways. Accordingly, the Board also directed the Staff to provide the following: (1) a comprehensive summary of the geologic conditions at the site; (2) a summary of the geotechnical information on the shear strength, creep, and consolidation characteristics of the loess, alluvium, and Catahoula Formation; (3) a discussion of the potential for slope deformations of the bluff due to creep and subsequent retrogressive movements toward the PPBA; (4) a description of the impacts of erosion from the flooded Mississippi River and the potential for this action to accelerate slope displacement; and (5) a presentation of technical analyses supporting its conclusions in FSER §§ 2.5.4 and 2.5.5.<sup>178</sup>

### ***1. Regulations and Guidelines Relating to Slope and Foundation Stability***

Pursuant to 10 C.F.R. § 100.23(c), the “engineering characteristics of a site and its environs must be investigated in sufficient scope and detail to permit an adequate evaluation of the proposed site.” In addition, 10 C.F.R. § 100.23(d)(4) requires evaluation of siting factors such as “soil and rock stability, liquefaction potential, [and] natural and artificial slope stability.” Section 2.5.4 of Attachment 2 to RS-002 provides specific guidance concerning the evaluation of information characterizing the stability of subsurface materials, including the need for geotechnical field and laboratory tests as well as the geophysical investigations.

### ***2. Witnesses***

To address the Board’s questions relating to slope and foundation stability, the NRC Staff and SERI proffered expert witnesses who provided both written and oral testimony.

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<sup>178</sup> See Hearing Issues Order at 5-6.

The NRC Staff presented two witnesses:<sup>179</sup> (1) Dr. Thomas M. Cheng; and (2) Dr. Carl J. Costantino. SERI presented two witnesses:<sup>180</sup> (1) Mr. Jeffery L. Bachhuber; and (2) Dr. William R. Lettis.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding slope and foundation stability relative to SERI's ESP Application.

### 3. Evidence Presented

In accordance with RS-002, the NRC Staff reviewed the soil structure interaction (SSI) for the power plant foundations and underlying geologic strata, and concluded that SERI's description was acceptable since it was consistent with the approach generally taken by industry. However, to ensure that SERI's foundation design assumptions contain an adequate margin of safety, the Staff identified COL Action Item 2.5-5.<sup>181</sup> This Action Item will require SERI "to correlate plot plans and profiles of each seismic Category I facility with the subsurface profiles and material properties to ascertain the sufficiency of selected borings to represent soil variations under each structure" prior to receiving a COL.<sup>182</sup>

In his written testimony for the NRC Staff, Dr. Cheng stated that SERI provided adequate details of the ESP site's geotechnical characteristics, and based on those data, the Staff concluded: (1) for static stability, a bluff standoff distance would minimize the potential effect of a slope failure on the plant, based on a stability calculation using the estimated shear strength parameter indicated by SERI for the loess material; and (2) while ground water flow estimates were not made for this Application, previous site data indicate no unusual ground water conditions that could not be handled with normal construction activities.<sup>183</sup> Dr. Cheng further stated that, presuming the plant is founded on Upland Complex Alluvium material or the Catahoula Formation, the loss of any lateral support for the west foundation wall by a slope failure through the loess material would not, in his professional judgment, affect the integrity of the plant.<sup>184</sup>

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<sup>179</sup> Dr. Cheng's professional qualifications are set out in NRC Staff Exhibit 13. Dr. Costantino's professional qualifications are set out in NRC Staff Exhibit 14. Dr. Costantino did not submit prefiled testimony for Hearing Issue D. See NRC Staff Pre-Filed Testimony Concerning Hearing Issue D: [Slope and Foundation Stability] (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-D].

<sup>180</sup> The professional qualifications of both of SERI's witnesses for Hearing Issue D are set out in SERI Exhibit 1. See also SERI PFT/HI-D.

<sup>181</sup> See FSER at 2-237 to 2-238; *id.*, App. A.2, at A-7.

<sup>182</sup> *Id.*, App. A.2, at A-7.

<sup>183</sup> See NRC Staff PFT/HI-D at 8.

<sup>184</sup> See *id.* at 9.

In response to the Board's questions, Dr. Costantino, on behalf of the NRC Staff, stated that SERI reported friction angles of the loess on the order of 33° to 34°, and that the underlying Upland Complex Alluvium and Catahoula Formation were much stronger than the loess based on his evaluation of Standard Penetration Test (SPT) blow counts. Accordingly, he concluded that if there were a slope failure, it would be restricted to the loess deposit.<sup>185</sup> SERI, through the testimony of Mr. Bachhuber, noted that the depth of the loess extends below the base of the slopes for both the river bluff and the tributary slope for Drainage Basin A — which is located north of the PPBA — and that loess is exposed along the north-south cut slope that runs across the PPBA. This fact, in the judgment of Mr. Bachhuber, supports the premise that the loess deposit is the critical material for slope stability considerations at the site.<sup>186</sup>

Mr. Bachhuber also confirmed that the strength of the loess was based on a number of triaxial shear strength tests performed on samples from the borings made for the ESP Application, and also from four CPT soundings that were extended all the way through the loess. Each of these soundings indicated strong undrained strengths of 2000 to 8000 pounds per square foot (psf).<sup>187</sup> Dr. Costantino noted, however, that all but one of these explorations were made in the center of the PPBA.<sup>188</sup> He testified that the resulting strengths were likely influenced by higher confining stresses than would be anticipated at the edge of the slope.<sup>189</sup> While visual observations by SERI indicate that the loess exposed on the slopes is similar to that encountered in the CPT soundings, the Staff developed COL Action Items 2.5-3 and 2.5-4 to require that the geotechnical characteristics be verified at the COL stage.<sup>190</sup>

Dr. Costantino also testified that the NRC Staff performed a simplistic linear analysis of a triangular-shaped failure surface to determine the relative stability of the bluff. This simplified model, using a very conservative friction angle of 30°, indicated that the failure plane would not encroach into the setback distance selected by SERI to protect the PPBA, and that the basement of the PPBA will be located below the area of slough material.<sup>191</sup> SERI elaborated on this issue through Mr. Bachhuber's testimony. He stated that a failure plane angle of 15° would be needed for the slough material to extend back to the setback zone, and an 8° angle would be needed to reach all the way back to the proposed reactor

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<sup>185</sup> See Tr. at 294-95.

<sup>186</sup> See *id.* at 300-01.

<sup>187</sup> See *id.* at 299.

<sup>188</sup> See *id.* at 300.

<sup>189</sup> See *id.* at 306-07.

<sup>190</sup> See NRC Staff PFT/HI-C at 5; *see also* FSER, App. A.2, at A-7.

<sup>191</sup> See Tr. at 294-97.

building envelope. He pointed out that comparing the friction angle of 33° to 34° to the inclination angle results in a significant safety factor.<sup>192</sup>

In regard to retrogressive failures due to creep that may also be exacerbated by erosion at the toe of the slope during flood stages of the Mississippi River, Dr. Costantino testified that the loess is the kind of fine-grain material susceptible to long-term creep and subsequent erosion during flood stages of the Mississippi River and adjacent drainage basins. Likewise, the stable appearance that currently exists under relatively dry conditions could change drastically if the soil saturation increases during wet periods. Dr. Costantino also noted that the strength of the loess could be reduced during construction.<sup>193</sup>

Dr. Costantino explained that, while strength loss or creep could occur (in addition to possible erosion leading to retrogressive slope failures back toward the PPBA), there are straightforward mitigative measures that can be taken during design to assure that this behavior, if proven to be correct at the COL stage, is not an issue to the siting of a plant at the GGNS site.<sup>194</sup> SERI, through the testimony of Mr. Bachhuber, went on to note that the existing bluff slope has existed for a period of years and provides an indication of loess behavior during previous intense rainstorms and flood conditions. Mr. Bachhuber stated that site observations indicate there is no historic evidence of retrogressive-type failures that extend for any significant distance back from the top of the bluff.<sup>195</sup>

As a result of its review, the NRC Staff concluded that SERI must perform additional analyses at the COL stage that will consider potential failure modes once the plant design is selected, to allow for the selection of the critical sections for stability.<sup>196</sup> In accordance with COL Action Items 2.5-9 and 2.5-10, SERI must develop specific foundation stability design criteria (e.g., potential wall rotations, facility sliding, and overturning) to incorporate the local topography or changes in topography in future SSI analyses, and must evaluate the effects of flooding on erosion of the bluff, including SSI impacts to the plant or plants.<sup>197</sup>

#### **4. Board Findings Relating to Slope and Foundation Stability**

At the proposed embedment depths and the foundation requirement of  $v_s > 1000$  fps, the Board finds that the NRC Staff has performed an adequate review to verify that the underlying soils will have sufficient foundation stability to support the proposed plant or plants. Likewise, the Staff has demonstrated that SERI has

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<sup>192</sup> See *id.* at 303-04 (citing SERI Exh. 5 (Cross-Section Through Bluff)).

<sup>193</sup> See *id.* at 296-98.

<sup>194</sup> See *id.* at 296-97, 306-07.

<sup>195</sup> See *id.* at 300-02.

<sup>196</sup> See *id.* at 309 (statement of Dr. Costantino).

<sup>197</sup> See *id.* at 309-10; see also FSER, App. A.2, at A-8.

shown that the seismic demand for the site is small (as discussed further in Hearing Issue C, *supra* Part IV.C), and that the liquefaction potential for the subgrade material is low at the high densities indicated by the velocity criteria (as discussed further in Hearing Issue A, *supra* Part IV.A). The Board also finds that the Staff has thoroughly reviewed SERI's geotechnical characteristics of the site strata as presented in ER-02, and finds that any potential slope failure along the perimeter bluff, drainage basin incisions, or cut slopes in the PPBA would be restricted to the loess material. We further find that COL Action Items 2.5-3 to 2.5-6 and 2.5-8 appropriately require additional site information to be gathered and that the ESP conclusions will be reevaluated to verify both slope and foundation stability.

Based on this, the Board finds that the NRC Staff has performed an adequate review in accordance with RS-002 and had a significant basis on which to conclude that the site stability assessment presented by SERI was acceptable and met the requirements of 10 C.F.R. §§ 52.17(a)(1), 100.23(c), and (d)(4).

#### **E. Hearing Issue: Alternative Analyses**

The Board sought further information regarding the NRC Staff's review of possible alternatives for reducing or avoiding adverse environmental impacts from the proposed ESP. The Board sought to verify that the alternative analyses included in the FEIS adequately evaluated potential site impacts that might be caused by the construction or operation of the proposed plant or plants. Also, the Board questioned whether, and to what degree, future construction might affect the environmental factors that might conflict with the issuance of this ESP.<sup>198</sup>

##### ***1. Regulations and Guidelines Relating to Alternative Analyses***

In accordance with 10 C.F.R. § 52.21, ESP applications are partial construction permits and, as such, the NRC Staff must prepare an EIS pursuant to 10 C.F.R.

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<sup>198</sup>These environmental factors include: (1) impact of proposed action on the environment; (2) unavoidable adverse environmental impacts; (3) alternatives to the proposed action; (4) conflicts between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and (5) irreversible and irretrievable commitments of resources. 10 C.F.R. § 51.45(b)(1)-(5). Within this discussion, the Board directed the NRC Staff to include a summary of the following alternative analyses: (1) power generation alternatives; (2) plant design alternatives; (3) alternate site options, including site screening procedures, impact assessment for unresolved issues in the ESP, and alternative site comparison. *See* Hearing Issues Order at 6-7.



§ 52.18. This EIS must include an evaluation of alternative sites to determine whether there is any obviously superior alternative to the site proposed.<sup>199</sup>

In accordance with 10 C.F.R. § 51.45, an applicant's ER for an ESP must include, *inter alia*, a discussion of the alternatives to the proposed action which, to the extent practicable, should be presented in a comparative form.<sup>200</sup> If the proposed siting of a plant for an ESP involves unresolved conflicts concerning alternative uses of available resources, then this discussion must be sufficiently complete to allow the NRC Staff to develop and explore appropriate alternatives to the ESP.<sup>201</sup> Based on the information in the ER, the Staff is required to prepare a draft EIS in accordance with 10 C.F.R. § 51.71, which, *inter alia*, considers and weighs the environmental impacts of alternatives to the proposed action and alternatives available for reducing or avoiding adverse environmental effects.<sup>202</sup>

The NRC Staff conducts its review of an applicant's ER in accordance with the guidance contained in Attachment 2 to RS-002. For environmental issues, RS-002 applies NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants." For additional guidance, 10 C.F.R. Part 51, Subpart A, Appendix A — Format for Presentation of Material in EISs — references the information and analyses provided in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants." Other review guidance referenced by the NRC Staff in the FEIS includes RG 4.2, "Preparation of Environmental Reports for Nuclear Power Stations" — used to define the region of interest — and RG 4.7, "General Site Suitability Criteria for Nuclear Power Stations" — used in the screening process for alternative sites within the applicant's defined region of interest.<sup>203</sup>

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<sup>199</sup> The requirements in 10 C.F.R. Part 52 are consistent with NEPA, which requires every Federal agency for every major Federal action significantly affecting the quality of the human environment to prepare a detailed statement on alternatives to the proposed action. *See* 42 U.S.C. § 4332(2)(C)(iii) (2000). While the Grand Gulf ESP does not authorize SERI to conduct any construction activity, the NRC Staff is still required to consider related actions that could lead to a significant impact on the environment. *See* 40 C.F.R. § 1508.27(b)(7). "The fact that the licensing action concerning the Grand Gulf ESP is separate from any potential licensing action concerning the construction and operation of proposed plant or plants does not excuse the NRC from evaluating the potential site impacts from the construction and operation" at the ESP stage. NRC Staff Pre-Filed Testimony Concerning Hearing Issue E: The Alternative Analyses for the Grand Gulf ESP Proceeding at 3 (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-E]. Likewise, when the Staff performs its alternative analyses it must evaluate how the cumulative impacts of future construction and operation of the plants might affect the environmental factors that could conflict with the issuance of an ESP. *See id.*

<sup>200</sup> *See* 10 C.F.R. § 51.45(b)(3).

<sup>201</sup> *See id.*

<sup>202</sup> *See* 10 C.F.R. § 51.71(d).

<sup>203</sup> *See* FEIS at 8-1.

## 2. *Witnesses*

To address the Board's questions relating to the environmental alternative assessment, the NRC Staff and SERI proffered expert witnesses who provided both written and oral testimony.

The NRC Staff presented four witnesses:<sup>204</sup> (1) Mr. Paul L. Hendrickson, Staff Scientist, Engineered Systems Group, PNNL; (2) Dr. Michael J. Scott, Staff Scientist, Energy Science and Technology Division, PNNL; (3) Mr. Lance W. Vail; and (4) Mr. James H. Wilson, Senior Project Manager, New Reactor Environmental Projects Branch, Division of New Reactor Licensing, NRR. SERI presented four witnesses:<sup>205</sup> (1) Mr. Michael D. Bourgeois, Manager of Project Management, Entergy Nuclear, Inc.; (2) Mr. John G. Cesare, Lead Licensing Project Engineer, ENERCON Services, Inc.; (3) Dr. Kyle H. Turner, Chief Executive Officer, McCallum-Turner, Inc.; and (4) Mr. George A. Zinke.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding alternative analyses relative to SERI's ESP Application.

## 3. *Evidence Presented*

### a. *Power Generation Alternatives*

The NRC Staff reviewed alternative power generation sources other than nuclear power including options that would require new generating capacity at the Grand Gulf site, as well as options that would not require new generating capacity.

For the analysis of options requiring new generating capacity, the NRC Staff used a target value of 2000 MWe for the electrical output of the generating facility, which was the same value used by SERI in its Application and to which the other power options were compared.<sup>206</sup> The issue of the target electrical output

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<sup>204</sup> The professional qualifications of Mr. Hendrickson, Mr. Vail, and Mr. Wilson are set out in NRC Staff Exhibit 13. Dr. Scott's professional qualifications are set out in NRC Staff Exhibit 51. Dr. Scott did not submit prefiled testimony for Hearing Issue E. See NRC Staff PFT/Hi-E.

<sup>205</sup> The professional qualifications of each of SERI's four witnesses for Hearing Issue E are set out in SERI Exhibit 1. See also Pre-Filed Testimony of John G. Cesare, George A. Zinke, Kyle H. Turner, and Michael D. Bourgeois on Behalf of [SERI] Concerning Hearing Issue E (Alternative Analyses) (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/Hi-E].

<sup>206</sup> See NRC Staff PFT/Hi-E at 4 (citing FSER at 8-3). Other portions of the FEIS used different target values for electrical output: 3000 MWe for construction land use impacts, operation impacts of plant operation, and fuel cycle impacts (FEIS §§ 4.1, 5, 6.1); 2200 MWe for cooling tower discharge effects (FEIS § 5; ER § 5.3); and up to a power level of 1311 MWe for power transmission (FEIS §§ 3, 4, 5).

was discussed in depth at the hearing.<sup>207</sup> In doing its comparison, SERI and the Staff relied on recommendations from the alternative power vendors as to the combinations of modules or units that would generate 1000 MWe (e.g., two 500-MWe plants for coal fire). Where appropriate on a parameter basis, the impacts were then doubled to reach the equivalent impact from a 2000-MWe output.<sup>208</sup>

SERI testified, through Mr. Cesare and Mr. Zinke, that, if at the COL stage the power level selected was either lower or higher than 2000 MWe, the different value would be considered new information. They went on to state that, in their opinion, in accordance with NEPA, and consistent with draft NRC regulation 10 C.F.R. § 51.50(c),<sup>209</sup> this level must be reviewed to determine if it is significant information. If determined to be significant, the effects of the changed value on the conclusions of the alternative energy analysis in the FEIS would be reevaluated.<sup>210</sup>

The NRC Staff also considered four alternatives not involving construction of new generating capacity — purchase of needed electric power, reactivation of retired plants, extension of operating life of existing plants, and implementation of power conservation — and two power generation alternatives — the construction of coal-fired or natural gas-fired plants. These were the only generating options the Staff considered to be technically reasonable and commercially viable for base load production.<sup>211</sup>

In regard to options not involving power generation, the NRC Staff concluded that power conservation was not a reasonable alternative to ESP base load generation.<sup>212</sup> With respect to purchasing needed electric power, reactivating retired power plants, and extending the operating life of existing nuclear power plants, the Staff qualitatively evaluated the impacts of these alternatives, and concluded that these three options were not reasonable alternatives for providing base load power.<sup>213</sup>

For power generating alternatives, the NRC Staff considered the impacts associated with four 509-MWe coal-fired or four 508-MWe natural gas-fired plants.<sup>214</sup> After comparing the environmental impacts with those assessed for the proposed ESP plant or plants, the Staff concluded that neither of these viable

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<sup>207</sup> See Tr. at 342-70.

<sup>208</sup> See *id.* at 345-46 (statement of Mr. Cesare); *id.* at 354-60 (statement of Mr. Zinke).

<sup>209</sup> See 71 Fed. Reg. 12,782 (Mar. 13, 2006).

<sup>210</sup> See Tr. at 349-52. Counsel for the NRC Staff and SERI explained that NEPA case law requires this new and significant analysis, which will be codified as 10 C.F.R. § 51.50(c)(1). *Id.* at 352, 360.

<sup>211</sup> See NRC Staff PFT/Hi-E at 4-5 (citing FEIS at 8-4 to 8-5).

<sup>212</sup> See *id.* at 4 (citing FEIS at 8-3).

<sup>213</sup> See *id.* at 4-5 (citing FEIS at 8-4 to 8-5).

<sup>214</sup> See *id.* at 5-9 (citing FEIS at 8-7 to 8-17).

energy alternatives was clearly preferable to construction of a new base load nuclear reactor.<sup>215</sup>

SERI's Application also identified other energy sources including oil, wind, solar, hydroelectric, geothermal, wood waste, municipal solid waste (MSW), biomass-derived fuels, and fuel cells. Based on its review, the NRC Staff determined that SERI's conclusion that these alternatives are not reasonable, was acceptable.<sup>216</sup> The Staff went on to consider a combination of alternatives and evaluated the environmental impacts of three 508-MWe natural-gas units combined with 30 MWe of wind energy, 30 MWe of hydropower, 90 MWe from biomass sources including MSW, and 326 MWe from conservation. After comparing the environmental impacts with those assessed for the proposed ESP plant or plants, the Staff concluded that none of these viable energy alternatives were clearly preferable to construction of a new base load nuclear reactor.<sup>217</sup>

*b. Plant Design Alternatives*

The NRC Staff reviewed alternative plant designs, in part, to help assure that appropriate alternatives to construction and operation of the proposed ESP plant or plants were developed and explored. The Staff testified that SERI evaluated several design alternatives relating to heat-dissipation and makeup water options.<sup>218</sup> Specifically, SERI considered seven heat-dissipation alternatives, including once-through cooling, wet mechanical draft cooling towers, wet natural draft cooling towers, wet-dry cooling towers, dry cooling towers, cooling pond, and spray canals.<sup>219</sup> SERI included wet natural draft and wet mechanical draft cooling towers in its PPE after ruling out the other options. In its review, the Staff agreed with SERI that the Mississippi River is not suited for once-through cooling, that land limitations make the site unsuitable for cooling pond and spray canals, and that dry cooling technology reduces the efficiency of steam turbines, which, in turn, has some detrimental effects on electricity production.<sup>220</sup> Other system design alternatives would be discussed at the COL stage, because a specific cooling system design has not been selected for any proposed plant or plants at the Grand Gulf site.<sup>221</sup>

For the intake system, SERI proposed to withdraw water directly from the Mississippi River through a shoreline embayment and intake constructed on the

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<sup>215</sup> See FEIS at 8-24.

<sup>216</sup> See NRC Staff PFT/HI-E at 9-10 (citing FEIS at 8-19).

<sup>217</sup> See *id.* at 11-12 (citing FEIS at 8-24 to 8-26).

<sup>218</sup> See *id.* at 12.

<sup>219</sup> See *id.* (citing FEIS at 8-26, 8-27).

<sup>220</sup> See *id.*

<sup>221</sup> See *id.* at 12-13 (citing FEIS at 8-28 to 8-29).

bank of the River. SERI considered two alternative types of makeup water intake for the heat-dissipation and circulating water systems: (1) constructing a direct-intake riverbed structure and pipeline connection to the bank; and (2) constructing a channel to direct water to a shoreline intake structure. The NRC Staff found no basis to suggest that these alternatives would be environmentally preferable to SERI's proposed embayment structure.<sup>222</sup>

For the discharge system, SERI proposed to release liquid effluent into the Mississippi River through a new outfall structure that would be located downstream of the existing outfall. The NRC Staff "evaluated a shoreline diffuser outfall and a submerged single-point discharge, but found no basis to suggest that the two discharge alternatives were environmentally preferable to SERI's proposed [design]."<sup>223</sup>

Of the optional water supplies identified by the NRC Staff, none were preferable to the Mississippi River and wells in the alluvial aquifer. The Staff noted that, while water treatment requirements and water system effluents are not known, all discharges would be regulated by the Mississippi Department of Environmental Quality through the National Pollutant Discharge Elimination System process.<sup>224</sup>

### *c. Site Alternatives*

The Board requested a summary of the site alternatives, including a discussion of the site screening procedures, impact assessment for unresolved issues, and alternative site comparison.<sup>225</sup> Entergy Nuclear, a division of Entergy Corporation (Entergy), conducted the alternative site selection process for the Grand Gulf ESP Application.<sup>226</sup>

#### (i) SITE SCREENING PROCESS

The NRC Staff reviewed Entergy's Region of Interest (ROI), which was used to examine potential ESP sites. It concluded that the criteria Entergy used to identify its ROI — that the NRC Staff has approved the site for nuclear power plant construction and operation, that site characterization data are available, that the operational impact of existing nuclear plants at the site has been determined, and that the sites are controlled by Entergy — are consistent with RG 4.2, and were reasonable.<sup>227</sup> Entergy selected seven existing Entergy-operated sites with

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<sup>222</sup> See *id.* at 13 (citing FEIS at 8-29).

<sup>223</sup> *Id.* (citing FEIS at 8-30).

<sup>224</sup> See *id.* (citing FEIS at 8-30).

<sup>225</sup> See Hearing Issues Order at 7.

<sup>226</sup> See FEIS at 8-31.

<sup>227</sup> See NRC Staff PFT/HI-E at 14 (citing FEIS at 8-32).

operating nuclear plants licensed by the NRC. Of these seven sites, Indian Point Energy Center was eliminated because its population density was in excess of 500 persons per square mile.<sup>228</sup>

Entergy's initial screening of the remaining six sites ranked each site with respect to eleven weighted screening criteria assigned by Entergy, including pricing, seismic evaluation, water availability, exclusion area, and spent fuel storage.<sup>229</sup> While the NRC Staff recognized that the criteria weights could affect the results, Mr. Hendrickson testified that RG 4.2 does not mandate any specific method to conduct the screening process, and that it would be hard for Entergy to predict the outcome of the screening beforehand due to the number of screening criteria and the relative narrow range over which the weighting factors change.<sup>230</sup>

As a result of this initial screening, Waterford-3 and Arkansas Nuclear One were eliminated due to their close proximity to GGNS — because of Entergy's interest in ensuring regional diversity — while Pilgrim Nuclear Station, River Bend Station, and James A. Fitzpatrick Nuclear Power Plant were retained to improve regional and siting diversity when compared to GGNS. The Staff concluded that this initial screening was a reasonable basis for narrowing the sites for further examination.<sup>231</sup>

The NRC Staff then reviewed Entergy's narrowing of the site selection to the final, preferred site. Entergy ranked the remaining four sites using a set of thirty-four separately weighted screening criteria.<sup>232</sup> SERI testified that the screening process was performed in accordance with the EPRI siting guide, and that weighted criteria were developed by an intricate procedure known as the Delphi technique.<sup>233</sup> The Staff testified that SERI's overall site selection for alternative sites was reasonable and that the ordered ranking of Grand Gulf, FitzPatrick, River Bend, and Pilgrim was consistent with SERI's approach.<sup>234</sup>

(ii) IMPACT ASSESSMENT FOR UNRESOLVED ISSUES

The NRC Staff conducted its own evaluation of the potential environmental impacts of constructing and operating new nuclear units at each of the three alternative sites. The Staff compared the proposed action — the GGNS ESP —

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<sup>228</sup> See FEIS at 8-33.

<sup>229</sup> See NRC Staff PFT/HI-E at 14 (citing FEIS at 8-33 to 8-34).

<sup>230</sup> See Tr. at 392.

<sup>231</sup> See *id.* at 391 (statement of Mr. Hendrickson); see also NRC Staff PFT/HI-E at 14-15 (citing FEIS at 8-33 to 8-34).

<sup>232</sup> See NRC Staff PFT/HI-E at 15 (citing FEIS at 8-35 to 8-37).

<sup>233</sup> See Tr. at 405 (statement of Mr. Turner).

<sup>234</sup> See NRC Staff PFT/HI-E at 15 (citing FEIS at 8-37).

with the alternatives for each major impact area.<sup>235</sup> Based on site visits and data review, the Staff concluded that SERI “reasonably identified alternative sites, adequately evaluated the environmental impacts of construction and operation, and used a logical means of comparing sites.”<sup>236</sup>

Where the NRC Staff was unable to reach a single determination level for the Grand Gulf ESP site due to insufficient information, the Staff indicated a likely impact level for unresolved issues, so that a comparison could be made to the alternative sites. The likely impact level was based on professional judgment, experience, and consideration of controls likely to be imposed under required Federal, State, or local permits.<sup>237</sup> It was the Staff’s opinion that impacts assigned for unresolved issues are sufficiently defined for the purpose of comparison between the proposed and alternative sites. The Staff testified that the “final impact assessment of construction and operation of new nuclear units at the Grand Gulf ESP site would be performed at the [COL] stage for issues that were not resolved during its review of the ESP application.”<sup>238</sup> Unresolved construction impacts include: (1) land use (site and vicinity, and power transmission line rights-of-way and offsite areas); (2) water-related (water use and water quality); and (3) ecological (terrestrial ecosystems).<sup>239</sup> Unresolved operational impacts include water-related impacts related to water use and water quality.<sup>240</sup>

(iii) ALTERNATIVE SITE COMPARISON

The NRC Staff analyzed whether any of the alternative sites were environmentally preferable to the Grand Gulf site for both construction and operational issues. The Staff concluded that the impacts were generally small for all four sites.<sup>241</sup> Although the Grand Gulf site had higher adverse impacts for some issues, each alternative site had similar or higher impacts for the same issues and/or higher impacts in other respects.<sup>242</sup> Accordingly, the Staff concluded that “none of the differences were sufficient to determine that any of the alternative sites is environmentally preferable to the Grand Gulf ESP site,” and, therefore, “by extension that none of the alternative sites is obviously superior to the Grand Gulf ESP site.”<sup>243</sup> The Staff also compared the proposed action with the no-action

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<sup>235</sup> See FEIS at 9-3 to 9-4 (Tables 9-1 and 9-2).

<sup>236</sup> NRC Staff PFT/Hi-E at 15 (citing FEIS at 9-2).

<sup>237</sup> See *id.* at 15-16 (citing FEIS at 9-2).

<sup>238</sup> *Id.* at 16.

<sup>239</sup> See FEIS at 9-3 (Table 9-1).

<sup>240</sup> See *id.* at 9-4 (Table 9-2).

<sup>241</sup> See NRC Staff PFT/Hi-E at 16-17 (citing FEIS at 9-5).

<sup>242</sup> See *id.* at 17 (citing FEIS at 9-6).

<sup>243</sup> *Id.* at 18 (FEIS at 9-6 to 9-7).

alternative. It noted that denial of the ESP Application would prevent early resolution of safety and environmental issues for the site, and that any of the potential paths SERI might take to satisfy its electrical power needs would have associated environmental impacts.<sup>244</sup>

#### **4. Board Findings Relating to Alternative Analyses**

The Board has reviewed the NRC Staff's analysis of SERI's ER with respect to its analysis of alternatives, and reviewed the Staff's FEIS for compliance with 10 C.F.R. § 52.18 (and, by reference, 10 C.F.R. Part 51). The Board finds that, for purposes of the FEIS, the potential construction and operation of the ESP plant or plants is the proposed action and was the focus of this Board's review under NEPA (42 U.S.C. § 4332(2)(C)). The Board also finds that the Staff, in its alternative analyses, evaluated how future construction and operation of the proposed nuclear power generating facility might affect the environmental factors that could conflict with the issuance of an ESP, and it evaluated all reasonable alternatives, specifically, addressing power generation options, plant design options, and alternative siting options.

The Board finds that the NRC Staff reviewed alternative power generation sources, including options requiring new generating capacity at the Grand Gulf site and options not requiring new generating capacity. For comparison of impacts from the varied plants, the Staff used a site target value of 2000 MWe as the common basis for the electrical output of the potential generating facilities. The Board finds that any selected power level other than the 2000-MWe target value would be new information. As a result, the differing power level must be reviewed to determine if it is significant information. If so, any effects of the changed value on the conclusions reached in the alternative energy analysis in the FEIS must be reevaluated at the COL stage.<sup>245</sup>

The Board finds that the NRC Staff's consideration of four alternatives not involving new generating capacity and two power generation alternatives was adequate and reasonable. The Staff's comparison of the environmental impacts from these options with those assessed for a new base load nuclear plant at the ESP site and their conclusion that none of the viable energy alternatives were clearly preferable to construction of a new nuclear plant was logical, supported by the facts, and in accordance with the regulations and guidance documents. The Board also finds that the other energy alternatives identified by SERI, and the combination of alternatives evaluated by the Staff, were reasonable and

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<sup>244</sup> See *id.* (citing FEIS at 9-7 to 9-8).

<sup>245</sup> *Cf.* Tr. at 354-64.



that the Staff's conclusion that none of these options were clearly preferable to construction of a new base load nuclear reactor was logical and well supported.

In regard to design alternatives, the Board finds that the NRC Staff's conclusion that all of the proposed alternatives — except the wet natural draft and wet mechanical draft cooling towers — are not suitable for the Grand Gulf site, and its conclusion that dry cooling technology has some detrimental effects on electricity production was reasonable. Because a specific cooling system design has not been selected for the Grand Gulf site, the Board notes that the system design alternatives must be discussed at the COL stage. The Board also finds that it was reasonable for the Staff to conclude that: (1) there is no basis to suggest that the two makeup water intake alternatives considered by SERI would be environmentally preferable to SERI's proposed embayment structure; (2) there is no basis to suggest that the two discharge alternatives (i.e., a shoreline diffuser outfall and a submerged single-point discharge) were environmentally preferable to SERI's proposed design; and (3) none of the optional water supplies identified by the Staff were preferable to the Mississippi River and wells in the alluvial aquifer.

The Board finds that the initial screening to seven sites was reasonable, and that the removal of one site due to population density was consistent with review guidance.<sup>246</sup> The Board also finds that (1) the selection of the weighted screening criteria is based on industry guidance, and (2) the final screening to four sites (ESP and three alternative sites), the subsequent ranking of the sites, and the selection of Grand Gulf site as the preferred site is consistent with applicable regulatory guidance.

The Board finds that the impact levels assigned by the Staff for unresolved issues are sufficiently defined for the purposes of comparison between the proposed and alternative sites. The Board also finds that (1) the alternative sites do not have unresolved impacts because impacts at alternative sites were evaluated using reconnaissance-level information, and (2) the final impact assessment of construction and operation of new nuclear unit(s) at Grand Gulf would be performed at the COL stage for issues that were not resolved during the review of the ESP Application. Accordingly, the Board finds that the assessment for unresolved issues is reasonable and appropriate for comparison of the Grand Gulf ESP site with alternative sites.

The Board finds that there is nothing in the record to dispute the approach and conclusions reached by the NRC Staff in their comparison of the alternative sites. Accordingly, the Board finds that the Staff had adequate basis to conclude that none of the differences in impacts were sufficient to determine that any of the alternative sites is environmentally preferable to the proposed site, and, by

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<sup>246</sup> See RG 4.2.

extension, conclude that none of the alternative sites is obviously superior to the Grand Gulf ESP site.

In summary, the Board finds that the NRC Staff's review of SERI's ESP Application and its alternative analysis is adequate and acceptable.

## **F. Hearing Issue: Evaluation of Cumulative Site Impacts**

At the Grand Gulf site, various factors may have an impact on the environment that will be cumulative in nature; i.e., the relevant impacts will emanate from a combination of the existing nuclear reactor at Grand Gulf as well as from new generating facilities that are the subject of this ESP Application. While these environmental impacts, standing alone, may be negligible, when aggregated they could have significant detrimental consequences on the environment.<sup>247</sup>

Accordingly, the Board directed the NRC Staff to identify and discuss the environmental impacts that could have a cumulative environmental effect relating to construction, operation, fuel cycle, transportation, and/or decommissioning of the proposed Grand Gulf facilities.<sup>248</sup>

### ***1. Witnesses***

To address the Board's questions relating to the evaluation of cumulative impacts, the NRC Staff and SERI each proffered expert witnesses who provided both written and oral testimony.

The NRC Staff presented four witnesses:<sup>249</sup> (1) Mr. Joseph D. Anderson, Security Interface Team Leader, Division of Preparedness and Response, Office of Nuclear Safety and Incident Response; (2) Dr. Charles A. Brandt, Resource and Ecosystems Management Product Line Manager, PNNL; (3) Mr. Stephen P. Klementowicz; and (4) Dr. Michael J. Scott. SERI presented three witnesses:<sup>250</sup> (1) Mr. David J. Bean, Senior Environmental Scientist, ENERCON Services, Inc.; (2) Mr. John G. Cesare; and (3) Mr. Marvin Morris.

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<sup>247</sup> See 40 C.F.R. § 1508.7.

<sup>248</sup> See Hearing Issues Order at 7.

<sup>249</sup> The professional qualifications of Dr. Brandt and Mr. Klementowicz are set out in NRC Staff Exhibit 13. Mr. Anderson's professional qualifications are set out in NRC Staff Exhibit 52, and Dr. Scott's professional qualifications are set out in NRC Staff Exhibit 51. Mr. Anderson and Dr. Scott did not submit prefiled testimony for Hearing Issue F. See NRC Staff Pre-Filed Testimony Concerning Hearing Issue F: Cumulative Site Impacts for the Grand Gulf ESP Proceeding (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-F].

<sup>250</sup> The professional qualification of each of SERI's three witnesses for Hearing Issue F are set out in SERI Exhibit 1. See also Pre-Filed Testimony of John G. Cesare, David J. Bean, and Marvin Morris on Behalf of [SERI] Concerning Hearing Issue F (Evaluation of Cumulative Site Impacts) (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/HI-F].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding cumulative site impacts relative to SERI's ESP Application.

## **2. Evidence Presented**

The NRC Staff identified and summarized their review of the issues and associated parameters that it believed relevant to its cumulative impacts analysis. Specifically the Staff analyzed the following issues for their potential cumulative impacts: (1) land use; (2) air quality; (3) water use and quality; (4) terrestrial ecosystems; (5) aquatic ecosystems; (6) socioeconomic; (7) historic and cultural resources; (8) environmental justice; (9) nonradiological health; (10) radiological impacts from normal operations; (11) fuel cycle; (12) nuclear fuel and waste transport; and (13) decommissioning.<sup>251</sup>

A summary of the NRC Staff's analysis was presented and admitted into evidence at the hearing as NRC Staff Exhibit 9.<sup>252</sup> The Staff did not, however, discuss or analyze the cumulative effects of design basis accidents (DBAs).

## **3. Board Findings Relating to Evaluation of Cumulative Site Impacts**

The NRC Staff considered and documented all material, cumulative impacts that have the potential to affect the environment for the duration of the proposed action (the construction period plus the 40-year operating life of the proposed facility). The Board finds that NRC Staff Exhibit 9 summarizes the Staff's analysis of these cumulative impacts, and identifies those potential impacts which cannot be accurately determined at this stage and, therefore, as unresolved issues, they will need to be addressed at the COL stage of this proceeding. In addition, the Board finds that the NRC Staff adequately explained why, given how unlikely, in its view, it would be for a DBA to occur at multiple plants at the same time, it would not be feasible to analyze the cumulative effect of such occurrences. The Board finds that the NRC Staff's review was adequate and acceptable.

## **G. Hearing Issue: Evaluation of Plant Parameter Envelope**

NRC regulations do not require that an ESP applicant specify a particular

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<sup>251</sup> See NRC Staff PFT/HI-F at 3-4.

<sup>252</sup> NRC Staff Exh. 9 (Summary of Issues for Which Cumulative Effects Were Analyzed), clearly identifies those cumulative site impact issues that have not been resolved, and that will need to be addressed at the COL stage.

plant design or reactor vendor in its application. As an option, an ESP applicant may provide a set of bounding parameters for the potential plant designs under consideration. This information is captured in what is referred to as the Plant Parameter Envelope (PPE), which consists of postulated design parameters that bound the characteristics of any reactor or reactors that might be built at the Grand Gulf site. The PPE serves as a surrogate plant facility for a selected design during the NRC Staff's safety and environmental reviews that are conducted for the ESP. The surrogate plant design parameters, in conjunction with the actual site-specific information, are used to support the analyses required to demonstrate site suitability that are provided in the applicant's SSAR and ER, and which are reviewed by the Staff in preparation of the FSER and FEIS.

A PPE can be developed for a single facility of a given type or for several different facilities. SERI's Application chose the latter approach, and selected the most limiting parameter values among several possible plant designs. The broader the envelope of candidate design characteristics represented in a composite PPE, the greater the conservatism, because a broad PPE will influence the selection and suitability of specific sites.

Because the ESP site will need to support the reactor facilities characterized in SERI's ESP Application, the Board sought to clarify that the NRC Staff evaluated whether SERI's PPE is consistent with the facility design limits proposed in its ESP Application. Specifically, the Board wanted to clarify the relationship between the parameters included in SERI's PPE and those identified in the Nuclear Energy Institute (NEI) guidance document, NEI 01-02, "Industry Guideline for Preparing an Early Site Permit Application."<sup>253</sup>

In addition, the Board sought to gain a clearer understanding of how the NRC Staff reviewed SERI's PPE to demonstrate its consistency with the 8600-MWt site power level proposed by SERI in its Application. In this regard, the Board requested an overview of how the Staff reviewed SERI's PPE, to provide assurance that its procedures were in line with the maximum site thermal power level requested in the Application. The Board also sought to clarify any differences or inconsistencies in the Staff's treatment of SERI's PPE in its safety and environmental reviews (e.g., the relationship between an environmental analysis that uses an assumed MWe value and the PPE which does not specify a MWe value). The Board was also interested in understanding further the nature

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<sup>253</sup>NEI 01-02 was developed after extensive interaction between the NRC Staff and industry representatives. The NRC Staff noted that it has not formally endorsed NEI 01-02, and that although NEI 01-02 identifies other possible PPE parameters, the Staff does not require an applicant to address all of the NEI 01-02 parameters. *See* NRC Staff Pre-Filed Testimony Concerning Hearing Issue G: Evaluation of Plant Parameter Envelope at 10 (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-G].

of the Staff's review of the composite accident release source term provided as part of SERI's PPE.<sup>254</sup>

### ***1. Regulations and Guidelines Relating to Plant Parameter Envelopes***

An ESP application must include the plant design specifications detailed in 10 C.F.R. § 52.17. Section 52.17 requires applicants to provide information regarding: (1) the interface between the proposed site and facility and the functional or operational needs of the facility from the site's natural and environmental resources; (2) the facility's capability to withstand natural and manmade environmental hazards of the site; and (3) the direct impact of the facility on the site's natural and environmental resources. The use of a "PPE" as a means of providing this information is a term of art established in NEI 01-02. There is no specific regulatory imprimatur for the use of a "PPE" in an ESP application. Section 4.4 of RS-002, however, states that references to "the plant" will be deemed to refer to "a nuclear power plant or plants of specified type that might be constructed on the proposed site (or falling within a [PPE])."<sup>255</sup> This terminology is used throughout RS-002 and supports the option for an applicant to use either plant-specific information or a surrogate plant or plants via a PPE to satisfy the requirements of 10 C.F.R. § 52.17.

### ***2. Witnesses***

To address the Board's questions relating to SERI's PPE and the NRC Staff's review of the selected parameters, the NRC Staff and SERI each proffered expert witnesses who provided both written and oral testimony.

The NRC Staff presented seven witnesses:<sup>256</sup> (1) Mr. Goutam Bagchi; (2) Mr. R. Brad Harvey, Physical Scientist, Division of Risk Assessment (DRA), NRR; (3) Ms. Eva Eckert Hickey, Staff Scientist, Radiological Science and Engineering Group, PNNL; (4) Mr. Stephen Klementowicz; (6) Mr. James V. Ramsdell, Jr., Staff Scientist, Atmospheric Chemistry and Meteorology Technical Group, PNNL; (6) Mr. James H. Wilson; and (7) Mr. George F. Wunder, Project Manager, Economic Simplified Boiling Water Reactor (ESBWR)/Advanced Boiling Water Reactor (ABWR) Projects Branch 1, Division of Licensing Project Management,

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<sup>254</sup> See Hearing Issues Order at 7-8.

<sup>255</sup> RS-002 at 12.

<sup>256</sup> The professional qualifications of each of the NRC Staff's seven witnesses for Hearing Issue G are set out in NRC Staff Exhibit 13. Ms. Hickey did not submit prefiled testimony for Hearing Issue G. See NRC Staff PFT/Hi-G.

Office of New Reactors. SERI presented three witnesses:<sup>257</sup> (1) Mr. John G. Cesare; (2) Mr. Alcuin J. Schneider; and (3) Mr. George A. Zinke.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the PPE relative to SERI's ESP Application.

### ***3. Evidence Presented***

To clarify the definition and use of the PPE, Mr. Zinke and Mr. Cesare, on behalf of SERI, provided a discussion of the major components of an ESP application and compared those to what would be required of SERI in a COL application.<sup>258</sup> As part of this presentation, they explained: (1) the difference between site parameters and site characteristics; (2) the relationship between the major features of emergency planning presented at the ESP stage and NRC requirements at the COL stage; (3) the development of PPE parameters for the SSAR and the ER and why the values may differ between these two documents; and (4) the procedures for handling the Permit Conditions, COL Action Items, site characteristics, and bounding parameters (Appendix A of the FSER) during the preparation of the COL application.

Mr. Zinke and Mr. Cesare also provided insight into the continuity between the ESP and COL stage discussed in the next hearing issue. Specifically, they testified that the ESP SSAR is incorporated verbatim into the COL application. In a similar fashion, the ESP ER is supplemented at the COL stage to compare parameters, address new and significant information, deal with unresolved items, supplement deferred issues, and determine completeness for issues not requiring any action at the ESP stage.<sup>259</sup>

Mr. Ramsdell, on behalf of the NRC Staff, discussed the Staff's review of SERI's PPE and its determination that none of the parameter values were unreasonable given the requested maximum reactor power of 8600 MWt. In his hearing presentation, Mr. Ramsdell discussed the various environmental PPE parameters associated with radiological, hydrological and aquatic ecology, and terrestrial ecology and land use socioeconomic impacts. According to Mr. Ramsdell, the parameters directly related to site power level include normal heat sink blowdown flow rate, evaporation rate, and makeup water flow rate. He further indicated that land use and terrestrial ecology impacts related to site power

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<sup>257</sup> The professional qualifications of each of SERI's three witnesses for Hearing Issue G are set out in SERI Exhibit 1. *See also* Pre-Filed Testimony of John Cesare, Al Schneider, and George Zinke on Behalf of [SERI] Concerning Hearing Issue G (Evaluation of [PPE]) (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/HI-G].

<sup>258</sup> *See* Tr. at 479-517.

<sup>259</sup> *See id.*

level are not likely to be particularly sensitive to the ultimate site power level, except to the extent that they will be impacted if the ESP site power level exceeds the capacity of the existing transmission system.<sup>260</sup>

Mr. Wunder and Mr. Wilson, also on behalf of the NRC Staff, stated in prefiled testimony that SERI's Application included a table that compared the SERI PPE to the parameters in NEI 01-02,<sup>261</sup> which demonstrated that SERI's PPE included a subset of the NEI 01-02 parameters. They stated that the Staff agreed with SERI's choice of the parameters that it selected for its PPE.<sup>262</sup> Counsel for the NRC Staff stated that the site characteristics included in FSER Appendix A incorporates many of the NEI 01-02 parameters, and will be included in the ESP permit.<sup>263</sup>

With respect to the Board's request that the NRC Staff clarify any inconsistencies in its treatment of SERI's PPE in the FSER and in the FEIS, the Staff explained that there were no inconsistencies; rather, the review differed because of the different functions they were designed to serve. In the FSER, the Staff evaluated the effects of the site environment on the facility. In the FEIS they evaluated the impact of the facility on the environment. "Whereas the safety review is focused primarily on protecting the health and safety of the public, the environmental review considers a much broader range of impacts to the environment as a whole. This broader range of impacts is reflected in the longer set of PPE values relevant to the environmental review."<sup>264</sup> According to the Staff, as a result of these differences, its analyses in the FSER often address extreme levels of impact while the FEIS, consistent with NEPA, evaluates reasonably foreseeable impacts.<sup>265</sup> Accordingly, the Staff did not view these differences as inconsistencies.

#### ***4. Board Findings Relating to Evaluation of the Plant Parameter Envelope***

The Board finds that SERI's PPE is sufficiently detailed to meet the applicable requirements of 10 C.F.R. § 52.17. The Board also finds that the Staff's review of SERI's PPE was adequate and supports the maximum site power level, bounding

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<sup>260</sup> See *id.* at 545-66; see also NRC Staff PFT/HI-G at 5-7.

<sup>261</sup> See NRC Staff Exh. 12.

<sup>262</sup> See NRC Staff PFT/HI-G at 7.

<sup>263</sup> See Tr. at 782-87 (statement of Mr. Weisman); see also NRC Staff Exh. 50 (Draft Early Site Permit).

<sup>264</sup> NRC Staff PFT/HI-G at 7. Any differences in the treatment of the PPE in the FSER and FEIS were because the safety review is performed under the Atomic Energy Act in accordance with 10 C.F.R. Part 52. The environmental review is performed under NEPA as implemented in 10 C.F.R. Part 51.

<sup>265</sup> See *id.* at 8-9.

parameters, and environmental parameters which will be documented in the Grand Gulf ESP.

#### **H. Hearing Issue: Continuity Between the ESP Stage and COL Stage**

Appendix A of the FSER provides a list of Permit Conditions, COL Action Items, Site Characteristics, and Bounding Parameters. Appendix J of the FEIS provides a list of “SERI Commitments and NRC Staff Assumptions Relevant to the Analysis of Impact.” In addition, the FSER and FEIS identify numerous unresolved items and deferred issues. The Board questioned whether these permit conditions, action items, site characteristics, plant parameters, unresolved items, commitments, assumptions, and deferred issues should be captured in one location and tracked between the ESP and the COL stage, and questioned how these issues would subsequently be managed (i.e., discovered, implemented, reviewed, and approved), so as to assure that they are satisfactorily completed at the COL stage.<sup>266</sup>

The Board raised concerns as to whether the NRC Staff will utilize a consistent approach for characterizing the conclusions and limitations contained in SERI’s ESP Application for unambiguous transition to the COL stage. In this regard, the Board sought to better understand the following: (1) the Staff’s progression from the ESP stage to the COL stage in terms of its use of lists (e.g., SERI commitments, Staff assumptions, COL Action Items), and how the lists are sufficiently comprehensive; (2) how the Staff conducted its reviews and what steps were taken to assure consistency among the Staff reviewers and contractors; and (3) the logic behind the Staff’s selection of which transition items would be formally documented and which would not.<sup>267</sup>

##### ***1. Regulations and Guidelines Relating to Continuity Between the ESP Stage and COL Stage***

An ESP application is reviewed in accordance with the requirements of 10 C.F.R. § 52.18 and RS-002. A review conducted in accordance with these documents should provide for an adequate transition between an ESP application and an application for a COL that references the ESP.

##### ***2. Witnesses***

To address the Board’s questions relating to continuity between the ESP stage

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<sup>266</sup> See Hearing Issues Order at 8-9.

<sup>267</sup> See *id.* at 8.



and the COL stage, the NRC Staff and SERI proffered expert witnesses who provided both written and oral testimony.

The NRC Staff presented five witnesses:<sup>268</sup> (1) Mr. Goutam Bagchi; (2) Dr. Thomas M. Cheng; (3) Mr. Andrew J. Kugler, Senior Environmental Project Manager, Division of Siting and Environmental Review, Office of New Reactors; (4) Mr. James H. Wilson; and (5) Mr. George F. Wunder. SERI presented five witnesses:<sup>269</sup> (1) Mr. Jeffrey L. Bachhuber; (2) Mr. John G. Cesare; (3) Dr. William R. Lettis; (4) Mr. Marvin Morris; and (5) Mr. George A. Zinke.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the continuity between the ESP stage and COL stage relative to SERI's ESP Application.

### **3. Evidence Presented**

As part of their presentation for the previous hearing issue, Mr. Zinke and Mr. Cesare, on behalf of SERI, provided insight into the continuity between the ESP stage and COL stage. They testified that the ESP SSAR is incorporated verbatim into the COL application. In a similar fashion, the ESP ER is supplemented by the COL applicant to show that the design characteristics are compared to the design parameters, any resulting new and significant information relating to this comparison and other items such as bounding values and site characteristics are addressed, unresolved items are dealt with, and issues deferred to the COL stage or otherwise not required at the ESP stage are evaluated for completeness of the COL application.<sup>270</sup>

Mr. Wunder explained the internal NRC Staff review process for an ESP application. He indicated that RS-002 was developed to provide a consistent review of the ESP by all branches of the Staff, including its contractors. He also indicated that the Project Manager is tasked by RS-002 with reviewing all sections of the draft SER for internal consistency and consistency with the application, and making modifications where appropriate. After the draft SER is compiled, it

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<sup>268</sup> The professional qualifications for Mr. Bagchi, Dr. Cheng, Mr. Wilson, and Mr. Wunder are set out in NRC Staff Exhibit 13. Mr. Kluger's professional qualifications are set out in NRC Staff Exhibit 53. Mr. Kluger did not submit prefiled testimony for Hearing Issue H. *See* NRC Staff Pre-Filed Testimony Concerning Hearing Issue H: Continuity Between the ESP Stage and COL Stage (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-H].

<sup>269</sup> The professional qualifications of each of SERI's five witnesses for Hearing Issue H are set out in SERI Exhibit 1. *See also* Pre-Filed Testimony of George A. Zinke, Marvin Morris, John G. Cesare, William R. Lettis, and Jeffrey L. Bachhuber on Behalf of [SERI] Concerning Hearing Issue H (Continuity Between the ESP Stage and COL Stage) (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/HI-H].

<sup>270</sup> *See* Tr. at 479-517.

is evaluated by the Division of New Reactor Licensing Management. Changes to the draft SER are reviewed by the NRC technical branches to insure that there was no loss of technical accuracy. The ACRS review is then conducted.<sup>271</sup>

Mr. Wunder testified about the NRC Staff's safety review process with respect to the development of COL Action Items and Permit Conditions and their use in the COL review. Mr. Wunder stated that the Staff had concluded that the list of Permit Conditions in the FSER is comprehensive, because these were the only conditions necessary to insure that 10 C.F.R. Part 100 will be satisfied.<sup>272</sup> Mr. Wunder further stated that all significant assumptions made for findings regarding safety were documented in the FSER and are listed as a Permit Condition.<sup>273</sup> In prefiled testimony, Mr. Wunder indicated that there are no other lists of commitments or assumptions on which the Staff based its analysis. If a particular assumption or commitment did not rise to the level of a Permit Condition or COL Action Item, no further formal documentation was included beyond the discussion or reference in the FSER. Mr. Wunder stated that, in his view, all key assumptions were made into Permit Conditions or COL Action Items.<sup>274</sup> In response to a Board question, it was explained that each COL Action Item must be addressed in the COL application, but that a COL Action Item need not be specifically met if an acceptable alternative is justified by the applicant.<sup>275</sup>

Mr. Wilson, on behalf of the NRC Staff, provided an overview of the environmental review that will be performed at the COL stage and how it will relate back to an ESP FEIS. He described the process of assuring the validity of earlier assumptions, particularly with respect to any new and significant information that is required to be considered in the COL FEIS. He indicated that the NRC Staff will verify the continued applicability of any ESP FEIS assumptions at the COL stage to determine whether there is new and significant information from that discussed in the FEIS.<sup>276</sup>

Prefiled testimony indicated that the Staff deferred certain issues if SERI's ESP Application did not address the issue, if the issue could not be resolved because the Application did not provide sufficient information, or if the information was not then reasonably available to allow the Staff to reach a conclusion on impacts.<sup>277</sup> The oral testimony further indicated, however, that the Staff was able to resolve

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<sup>271</sup> See *id.* at 571-75.

<sup>272</sup> See *id.* at 576.

<sup>273</sup> See *id.* at 588-89.

<sup>274</sup> See NRC Staff PFT/HI-H at 8-9.

<sup>275</sup> See Tr. at 589-97 (statements of Mr. Wunder and Mr. Cesare).

<sup>276</sup> See *id.* at 576-81.

<sup>277</sup> See NRC Staff PFT/HI-H at 9.

or address all environmental issues necessary for reaching its conclusion with respect to SERI's ESP Application.<sup>278</sup>

When asked which environmental issues were being referred to in the prefiled testimony, Mr. Wilson indicated that at this stage, without a site redress plan, in his judgment the only matter that the NRC Staff needed to resolve was whether there are any obviously superior alternative sites. He stated that all remaining issues can be addressed later at the COL stage.<sup>279</sup>

#### **4. Board Findings Relating to Continuity Between the ESP Stage and COL Stage**

With respect to the transition between the ESP stage and a future COL application, the Board finds that SERI has provided sufficient information for the NRC Staff to adequately support its preparation of the FSER and the FEIS.

The Board also finds that the NRC Staff's review, as documented in the FSER and FEIS, is adequate and supports the continuity between the ESP stage and a future COL application that references this ESP.

#### **I. Hearing Issue: Radiological Reviews and Confirmatory Analyses**

In support of its ESP Application, SERI performed radiological dose analyses for both normal and accidental radiological releases. Because the results of these analyses are critical to the acceptability of the site, the Board requested a presentation that would discuss the NRC Staff's review of the radiological analyses performed by SERI, including details regarding the nature of whether confirmatory analyses were performed by the Staff. The Board's specific areas of concern included: (1) the selection of the DBAs and discrepancies in the event names that appear in the SSAR, FSER, and FEIS; (2) the Staff's review for both normal release analyses, accident analyses, and severe accident analyses, including the method and results of the Staff's confirmatory analyses; (3) why the contribution of external events was not specifically factored into the core damage frequencies used in the presentation of the severe accident risk; (4) whether PC-2 removes the need to perform an analysis of the liquid radwaste tank failure event at the COL stage, or if it does not, to what extent PC-2 impacts the assumptions associated with the analysis of such an event; and (5) for the non-MACCS2 severe accident effects, such as ground water release, the basis for the Staff's conclusion that the risks for these pathways are acceptably small.<sup>280</sup>

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<sup>278</sup> See Tr. at 589-97.

<sup>279</sup> See *id.* at 583-84.

<sup>280</sup> See Hearing Issues Order at 9.

## ***1. Regulations and Guidelines Relating to ESP Radiological Analyses***

The regulations relating to radiological releases are discussed subsection by subsection below. The NRC Staff's review is guided by RS-002, NUREG-0800, NUREG-1555, and RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors."

### ***a. Normal Release Dose Consequences***

In accordance with 10 C.F.R. § 100.21(c)(1), "[r]adiological effluent release limits associated with normal operation from the type of facility proposed to be located at the site can be met for any individual located offsite." RG 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 C.F.R. Part 50 Appendix I," and RG 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors," provide guidelines for the description of the exposure pathways and the calculation methods to estimate doses to the maximally exposed individual and to the population surrounding a site.

### ***b. Postulated Accident Dose Consequences***

The radiological consequences of DBAs must be analyzed to demonstrate that any new nuclear unit or units could be sited at the proposed ESP site without undue risk to the health and safety of the public.<sup>281</sup> 10 C.F.R. § 52.17(a)(1) requires a site safety assessment that demonstrates "the acceptability of the site under the radiological consequence evaluation factors identified in [10 C.F.R.] § 50.34(a)(1)" and that site characteristics comply with the requirements of 10 C.F.R. Part 100. Section 50.34(a)(1) requires that doses from DBAs be calculated for hypothetical individuals located at the closest point on the exclusion area boundary for a 2-hour period and at the outer radius of the low population zone for the course of the accident.<sup>282</sup> The suitability of the site can be demonstrated by the selection of the DBAs to be evaluated, the use of conservative source terms, and the use of site-specific meteorology for calculating the doses to the public.<sup>283</sup>

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<sup>281</sup> See 10 C.F.R. § 52.17; 10 C.F.R. Part 100.

<sup>282</sup> See 10 C.F.R. § 50.34(a)(1)(ii)(D)(I).

<sup>283</sup> See NRC Staff Pre-Filed Testimony Concerning Hearing Issue I: Radiological Reviews and Confirmatory Analyses at 9-13 (Nov. 20, 2006) (fol. Tr. at 78) [hereinafter NRC Staff PFT/HI-I].

## 2. *Witnesses*

To address the Board's questions relating to radiological reviews and confirmatory analyses, the NRC Staff and SERI proffered expert witnesses who provided both written and oral testimony.

The NRC Staff presented six witnesses:<sup>284</sup> (1) Mr. Goutam Bagchi; (2) Ms. Eva Eckert Hickey; (3) Mr. Stephen P. Klementowicz; (4) Mr. Jay Y. Lee, Senior Health Physicist, DRA, NRR; (5) Mr. James V. Ramsdell, Jr.; and (6) Mr. James H. Wilson. SERI presented two witnesses:<sup>285</sup> (1) Mr. John G. Cesare; and (2) Mr. Marvin Morris.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding radiological reviews and confirmatory analyses relative to SERI's ESP Application.

## 3. *Evidence Presented*

### a. *General Approach to Radiological Reviews*

With respect to the effects of normal radiological releases, SERI performed the radiological effluent analyses listed in section 3.2 of its SSAR and sections 3.5 and 5.4 of its ER, to determine whether the site characteristics are such that the radiation dose to members of the public from normal reactor operations would be within regulatory requirements. The NRC Staff documented its review of these analyses in section 11 of the FSER and sections 5.9 and 7.8 of the FEIS. The source terms used in estimating these doses are based on the values provided in Tables 3.0-7 and 3.0-8 of the ER,<sup>286</sup> which are composite source terms based on the highest individual radionuclides released for each of the plant types that were considered. In section 3.3 of its SSAR, SERI analyzed the radiological consequences of DBAs and the Staff documented its review of these analyses in section 15 of the FSER and section 5.10 of the FEIS.

Instead of identifying a single reactor design, SERI used combined reactor source term parameters from the AP1000 and the ABWR certified designs. For Loss-of-Coolant Accident (LOCA) analyses, they also used the Advanced

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<sup>284</sup> The professional qualifications of each of the NRC Staff's six witnesses for Hearing Issue I are set out in NRC Staff Exhibit 13. Mr. Wilson did not submit prefiled testimony for Hearing Issue I. See NRC Staff PFT/HI-I.

<sup>285</sup> The professional qualifications of both of SERI's witnesses for Hearing Issue I are set out in SERI Exhibit 1. See also Pre-filed Testimony of Marvin Morris and John Cesare on Behalf of [SERI] Concerning Hearing Issue I (Radiological Reviews and Confirmatory Analyses) (Nov. 22, 2006) (fol. Tr. at 86) [hereinafter SERI PFT/HI-I].

<sup>286</sup> See FEIS, App. I, at I-11 to I-12.

CANDU Reactor (ACR)-700 source term. These accident source terms were used in conjunction with Grand Gulf site characteristics and the plant parameters included in the PPE to assess the suitability of the proposed ESP site.<sup>287</sup>

*b. Design Basis Accident Selection and Nomenclature*

Mr. Lee, on behalf of the NRC Staff, provided a table that compared the nomenclature of the design basis events in SERI's SSAR with those used in the FSER and FEIS.<sup>288</sup> The table showed that while there were some differences in the nomenclature used, there was consistency in the events SERI referenced.<sup>289</sup> One exception was that the reactor coolant pump (RCP) locked rotor event evaluated in the SSAR utilized a different initiating event than the RCP shaft break and RCP rotor seizure events evaluated in the FSER and FEIS, respectively. Mr. Lee explained, however, that although the initiating event was different, the accident sequence and radiological consequences were the same; therefore, he viewed them as consistent for the purpose of his analysis.<sup>290</sup> NRC Staff Exhibit 19 stated that "the SSAR and FSER both listed the [Boiling Water Reactor (BWR)] Control Rod Drop Accident for completeness, but neither [SERI] nor the Staff analyzed the radiological consequence for this event since the certified ABWR includes several unique features that preclude [its] occurrence."<sup>291</sup> The Staff compared SERI's selection of accidents with the accidents listed in guidance documents, including standard review plans (e.g., RS-002, NUREG-0800, and NUREG-1555) and RGs (e.g., RG 1.183), and determined that the set of DBAs considered in SERI's SSAR and ER were appropriate.<sup>292</sup>

*c. NRC Staff Review of Radiological Analyses*

The NRC Staff's review of normal radiological releases, as it was explained by Ms. Hickey, followed the requirements in 10 C.F.R. Part 51, RS-002 (where applicable), and NUREG-1555 (Environmental Standard Review Plan (ESRP)). The ESRP sections utilized by the Staff include: Section 3.5 (radioactive waste management system); section 5.4 (radiological impacts for normal operation); and section 6.2 (radiological monitoring).<sup>293</sup> The Staff reviewed the input and assumptions and performed confirmatory LADTAP II and GASPAR II analyses;

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<sup>287</sup> See NRC Staff PFT/HI-I at 10.

<sup>288</sup> See NRC Staff Exh. 19, *supra* note 143, at 26.

<sup>289</sup> See Tr. at 642-49.

<sup>290</sup> See *id.* at 649.

<sup>291</sup> NRC Staff Exhibit 19, *supra* note 143, at 28 n.2.

<sup>292</sup> See NRC Staff PFT/HI-I at 8-9.

<sup>293</sup> See Tr. at 622.

however, it did not perform an independent review of the source terms provided by SERI.<sup>294</sup> The Staff judged the source terms not to be unreasonable and the composite approach used by SERI was acceptable to the Staff.<sup>295</sup>

With respect to accidental radiological releases, Mr. Lee stated, on behalf of the NRC Staff, that SERI did not perform new radiological consequence analyses for the stated events. Rather, SERI used the analyses that were performed for the AP1000 and the ABWR LOCA in their respective Design Certification Documents (DCD), which had already been reviewed by the Staff. The results of these analyses were adjusted by SERI for the specific characteristics of the Grand Gulf site. For the ABWR non-LOCA events, SERI calculated the doses using the DCD source terms. For the ACR-700 LOCA, SERI calculated the site-specific doses using the source term provided by the vendor for this purpose.<sup>296</sup> The AP-1000 LOCA results were found to be bounding. The Staff determined that the DBA source terms and evaluation methods used by SERI were generally appropriate, and concluded that SERI demonstrated the suitability of the proposed ESP site by meeting the dose consequence evaluation factors set forth in 10 C.F.R. §§ 50.34 (a)(1) and 100.21, and complied with the requirements of 10 C.F.R. § 52.17.<sup>297</sup>

The environmental risk from severe accidents was evaluated in SERI's ER. The risk was calculated as the product of severe accident event frequencies and the event consequences. In this analysis, event frequencies from existing probabilistic risk analyses (PRA) were used in conjunction with site-specific consequence analyses. SERI determined severe accident risk by using the AP-1000 and ABWR DCD internal event sequence frequencies for the various release categories evaluated in the PRA for the respective plant. The consequences for each release were determined by SERI using the source terms for each release category in the MACCS2 code to develop the ESP site-specific consequences using population data projected to the year 2070.<sup>298</sup> The results are presented in FEIS Tables 5-13 to 5-16.<sup>299</sup> The source term input to the MACCS2 code runs was provided by the vendors via letters to SERI and was not independently reviewed by the NRC Staff.<sup>300</sup>

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<sup>294</sup> See NRC Staff PFT/HI-I at 5-6.

<sup>295</sup> See Tr. at 626-28.

<sup>296</sup> See *id.* at 650.

<sup>297</sup> See *id.* at 651 (citing FSER at 15-6 to 15-8).

<sup>298</sup> See *id.* at 689-701 (statement of Mr. Ramsdell).

<sup>299</sup> FEIS at 5-71 to 5-75.

<sup>300</sup> See Tr. at 697-98 (statement of Mr. Ramsdell).

*d. Contribution from External Events*

The Board expressed concern about the absence, in the NRC Staff's presentation on severe accident risk, of external events in the core damage frequencies. In response, Mr. Ramsdell stated that the ABWR and AP1000 design certification process considered externally initiated events, but that the Staff did not adopt any numerical core damage frequencies associated with externally initiated events. Instead, the Staff chose to characterize them as extremely small, which makes it difficult to calculate risk.<sup>301</sup> He explained further that the Staff looked at externally initiated events with respect to current generation reactors in NUREG-1742, "Perspectives Gained from the Individual Plant Examination of External Events Program," which showed that the core damage frequencies for externally initiated events are typically at the same magnitude or smaller than those from internally initiated events. Therefore, Mr. Ramsdell explained that the standard practice has been to use a multiplier on internally initiated events to account for externally initiated events. The risk for advanced reactors is small enough to accommodate multipliers that are much larger than a factor of two and still meet or exceed the Staff's safety goals.<sup>302</sup> The Staff did not independently review the source terms utilized in the MACCS2 code for these analyses, but it did review the code input, output, and assumptions, and performed confirmatory analyses with their own version of the code.<sup>303</sup>

*e. Impact of Permit Condition 2*

Permit Condition 2 does not specifically address the analysis of radwaste tank failure events.<sup>304</sup> According to the NRC Staff, no DBA radwaste tank failure analysis is needed for a reactor design that incorporates suitable barriers to contain any accidental spillage of radioactive liquid effluents due to tank failure.<sup>305</sup> Mr. Lee stated that the failure of a liquid (and gaseous) radwaste tank has been removed as a design basis event for the ABWR, but not for the AP1000. He explained that this will be evaluated during the review of the COL application.<sup>306</sup>

*f. Risk from Ground Water Release*

Mr. Ramsdell explained that the NRC Staff did not consider liquid pathway

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<sup>301</sup> See *id.* at 703-04.

<sup>302</sup> See *id.*; see also NRC Staff PFT/HI-I at 12-13.

<sup>303</sup> See NRC Staff PFT/HI-I at 10-11.

<sup>304</sup> See FSER, App. A.1, at A-2.

<sup>305</sup> See NRC Staff PFT/HI-I at 14.

<sup>306</sup> See Tr. at 678-79.



releases for severe accidents because the probability of such events occurring was judged to be significantly less than the probability for a gaseous release given that a basemat melt-through would be needed for a release into the water pathway.<sup>307</sup> While NUREG-1437 considered a  $10^{-4}$  per reactor year probability for basemat failure, the Staff judged this to be about three orders of magnitude too high for any of the advanced reactors being considered for the proposed ESP site.<sup>308</sup> Regardless, the Staff concluded that the liquid release pathway would be considerably slower than the atmospheric pathways so there would be time for mitigating action following the accident and a much smaller risk to the public.<sup>309</sup>

#### **4. Board Findings Relating to Radiological Reviews and Confirmatory Analyses**

With respect to the effects of normal radiological releases, the Board finds that the NRC Staff adequately reviewed SERI's radiological effluent analyses listed in section 11 of the FSER and sections 5.9 and 7.8 of the FEIS, and that the Staff had an adequate basis for their determination that the site characteristics are such that the radiation dose to members of the public from normal reactor operations would be within regulatory requirements. The Staff adequately documented its review of SERI's analysis of the radiological consequences of DBAs.

The Board also finds it was appropriate that: (1) instead of identifying a single reactor design, SERI used a combined reactor source term parameter from the AP1000 and the ABWR certified designs; (2) for LOCA analyses, SERI used the ACR-700 source term; and (3) these accident source terms were used in conjunction with Grand Gulf site characteristics and the plant parameters included in the PPE to assess the suitability of the proposed ESP site.

The NRC Staff clarified the nomenclature of the DBAs, and noted that there was consistency in the events. The Board finds that it was logical for the Staff to conclude that: (1) SERI's set of DBAs was appropriate; (2) the source terms and composite approaches used by SERI were not unreasonable; (3) SERI met the dose consequence factors required by the regulations and has complied with 10 C.F.R. § 52.17; (4) consideration of radwaste tank failure could be deferred to the COL stage; and (5) externally initiated events can be characterized as being extremely small.

In conclusion, the Board finds that the NRC Staff has documented that SERI has provided sufficient information regarding its radiological analysis to meet the requirements of 10 C.F.R. § 52.17, and has adequately supported the preparation

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<sup>307</sup> See *id.* at 701-05.

<sup>308</sup> See *id.* at 702-03.

<sup>309</sup> See *id.*

of the FSER and FEIS for the issuance of the ESP. The Board also finds that the Staff's review of SERI's radiological analyses as documented in the FSER and FEIS are sufficient and support the conclusion that the regulatory requirements associated with radiological limits have been met by SERI.

## V. REVIEW OF SAFETY-RELATED MATTERS

The NRC Staff was required to make determinations on two safety issues as follows:

- (1) Whether the issuance of an ESP will be inimical to the common defense and security or to the health and safety of the public (Safety Issue 1); and
- (2) [W]hether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having characteristics that fall within the parameters for the site, can be constructed and operated without undue risk to the health and safety of the public (Safety Issue 2).<sup>310</sup>

The NRC Staff answered the first question in the negative and the second question in the affirmative.

The Board was directed by the Commission to conduct a "sufficiency" review of the NRC Staff's analyses of these issues.<sup>311</sup> In conducting our "sufficiency" review on safety issues, we were directed to take an independent "hard look" at the Staff's findings, but not to replicate the Staff's work. Rather than conducting a *de novo* determination on the two safety issues that are of consequence in this proceeding, we were directed to probe the facts and logic behind the Staff's findings, determine whether the Staff's review was adequate, and whether the record supported the issuance of the ESP. We also were directed to "carefully probe [the Staff's] findings by asking appropriate questions, and by requiring supplemental information when necessary."<sup>312</sup>

Rather than put every NRC Staff decision associated with its review of SERI's ESP Application on trial during the evidentiary hearing, we focused on the nine hearing issues discussed above. These were, in our judgment, the issues that retained the greatest significance after this Board's review of the source documents, and the exchange of written questions between the Board, the Staff, and SERI.<sup>313</sup>

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<sup>310</sup> 69 Fed. Reg. at 2636.

<sup>311</sup> CLI-05-17, 62 NRC at 39.

<sup>312</sup> *Id.* at 40; *see also* 10 C.F.R. § 2.104(b)(2).

<sup>313</sup> *See* CLI-06-20, 64 NRC at 21-22.

After a review of the record — including SERI’s Application, the FSER, the FEIS, the answers to the safety and environmental questions asked by the Board,<sup>314</sup> and the evidentiary hearing — with special emphasis on those hearing issues that we viewed as most significant, the Board concludes that the NRC Staff’s review of the safety issues was adequate and that its conclusions regarding these two safety questions subject to the Permit Conditions, COL Action Items, site characteristics, and bounding parameters in Appendix A to the FSER are supported by logic and the facts in the record.

## VI. REVIEW OF NEPA-RELATED MATTERS

### A. Regulations and Guidelines Relating to NEPA

The Commission requires that the NRC Staff prepare an EIS during its review of an ESP application.<sup>315</sup> This EIS must be prepared in accordance with 10 C.F.R. Part 51, and must focus on the environmental effects of construction and operation of reactors that have the characteristics of the postulated site parameters, and must include an evaluation of alternatives to determine whether there are any obviously superior options to the proposed action. The Staff’s EIS analysis for the ESP need not, however, include an assessment of the benefits (e.g., need for power).<sup>316</sup>

While the Grand Gulf ESP does not authorize any construction activity, the NRC Staff is still required by Council on Environmental Quality (CEQ) regulations to consider actions that are related to other actions that could lead to a significant impact on the environment.<sup>317</sup> As a result, the Staff appropriately focused on the environmental effects of the construction and operation of reactors, with characteristics that fall within the PPE developed by SERI, as the ultimate federal action that could realistically result from a chain of events initiated by the issuance of an ESP.

In preparing the FEIS, the NRC Staff used SERI’s ER, which was prepared in accordance with 10 C.F.R. § 52.17(a)(2) (and by reference therein, 10 C.F.R. §§ 51.45 and 51.50), and used the same provisions that apply to the Staff in its preparation of the FEIS. In accordance with 10 C.F.R. § 51.45, SERI’s ER for this ESP considered, *inter alia*: (1) the impacts of the proposed action on the environment, discussed in proportion to their significance; (2) unavoidable adverse environmental effects; (3) alternatives to the proposed action, presented in a comparative form to the extent practicable; (4) relationship between local

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<sup>314</sup> See Order on FSER; Order on FEIS.

<sup>315</sup> See 10 C.F.R. § 52.18.

<sup>316</sup> See 10 C.F.R. §§ 52.17, 52.18.

<sup>317</sup> See 40 C.F.R. § 1508.27(b)(7); *see also* 10 C.F.R. § 51.10.

short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitments of resources.<sup>318</sup>

Based on the information in SERI's ER, the NRC Staff prepared an EIS in accordance with 10 C.F.R. § 51.71, that included, *inter alia*, an analysis that considers and weighs the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects.<sup>319</sup> The Staff conducted its review of SERI's ER in accordance with guidance set forth in RS-002, which, for environmental issues, references NUREG-1555. Appendix A to 10 C.F.R. Part 51, Subpart A, references the information and analyses provided in NUREG-1437, as additional guidance in this review.

With respect to the NRC Staff's analysis of alternatives, it must include: (1) a discussion of alternatives to the recommended course of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;<sup>320</sup> (2) the no-action alternative in accordance with 10 C.F.R. §§ 52.18 and 52.21, exclusive of the portion dealing with the need for power since SERI does not propose to consider this issue at this time; and (3) a comparison of alternative sites, using the March 7, 2003 NRC Staff letter<sup>321</sup> for additional guidance concerning reviews of alternative sites. In addition, SERI proposed to include in the ESP several alternatives made optional at this stage by the June 2, 2003 NRC Staff letter.<sup>322</sup> These include energy alternatives and alternative energy sources.

Following the practice the NRC Staff used in NUREG-1437, environmental issues were evaluated using the three-level standard of significance — SMALL, MODERATE, LARGE — developed by NRC using guidelines from the CEQ.<sup>323</sup> Additional review guidance referenced by the NRC Staff in its review includes RG 4.2, used to define the ROI, and RG 4.7, used in the screening process for alternative sites within SERI's defined ROI.

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<sup>318</sup> See 10 C.F.R. § 51.45(b)(1)-(5).

<sup>319</sup> See 10 C.F.R. § 51.71(d).

<sup>320</sup> See NEPA § 102(2)(E), 42 U.S.C. § 4332(2); 10 C.F.R. § 51.45(b)(3).

<sup>321</sup> Letter from James E. Lyons, NRR, to Ronald L. Simard, NEI (Mar. 7, 2003), ADAMS Accession No. ML030520434.

<sup>322</sup> Letter from James E. Lyons, NRR, to George A. Zinke, Entergy (June 2, 2003), ADAMS Accession No. ML031480443.

<sup>323</sup> Table B-1 of 10 C.F.R. Part 51, Subpart A, Appendix B, provides the following definitions of the three significance levels: SMALL — "environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource"; MODERATE — "environmental effects are sufficient to alter noticeably, but not to destabilize important attributes of the resource"; LARGE — "environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource."

The Commission provided guidance to the Board regarding the depth of review necessary to address the “baseline” NEPA issues summarized *supra* pages 36-37.<sup>324</sup> They directed that the Board must reach an independent determination on these uncontested NEPA “baseline” issues. In reaching these determinations, however, the Commission stated that a Board should not second-guess the underlying technical or factual findings of the NRC Staff, except when the reviewing Board finds that the Staff’s review is incomplete or that the Staff findings lack sufficient explanation.<sup>325</sup> The Board’s findings on these NEPA issues follows in the next three sections.

## **B. Compliance with NEPA §§ 102(2)(A), (C), and (E)**

As part of the NEPA-related matters in this Grand Gulf ESP proceeding, this Board was required to determine whether the requirements of NEPA §§ 102(2)(A), (C), and (E) had been met.

### ***1. Section 102(2)(A) Compliance***

Section 102(2)(A) of NEPA requires the agency to use a “systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man’s environment.”<sup>326</sup> Environmental impacts of the construction and operation of the proposed ESP plant or plants were presented in sections 4 and 5, respectively, of the FEIS. In addition, with respect to the more natural scientific impacts, the NRC Staff also considered socioeconomic, historic, cultural resource, and environmental justice impacts. Socioeconomic impacts include physical impacts, social and economic issues, demography, infrastructure, and community services.

The Board finds that the NRC Staff’s description of these impacts, based on SERI’s ER, was prepared in accordance with the review guidance provided in RS-002, which, in turn, was based primarily on the detailed steps in NUREG-1555. Finally, the Staff demonstrated that it used a systematic, interdisciplinary approach as the basis for its decisions in the FEIS. Based on these facts, the Board finds that section 102(2)(A) of NEPA has been complied with in this proceeding.

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<sup>324</sup> CLI-05-17, 62 NRC at 45.

<sup>325</sup> *See id.*

<sup>326</sup> 42 U.S.C. § 4332(2)(A).

## 2. Section 102(2)(C) Compliance

Section 102(2)(C) of NEPA requires the agency to include a detailed statement on: (1) “the environmental impact of the proposed action”; (2) “any [unavoidable] adverse environmental effects”; (3) “alternatives to the proposed action”; (4) “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity”; and (5) “irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.”<sup>327</sup> The FEIS for the Grand Gulf ESP comprises over 200 pages of text presenting a detailed description of the environmental impacts of the proposed construction and operation of a potential ESP plant or plants at the Grand Gulf site. Adverse environmental effects of construction and operation contained in these sections include fuel cycle, fuel and waste transportation, decommissioning, and cumulative impacts. In sections 8 and 9 of the FEIS, alternatives to the proposed action were developed by the Staff, analyzed, and compared to the impacts from the proposed ESP plant or plants.

In regard to the other issues, the NRC Staff found that there would be no short-term damage to the environment associated with the ESP and that there would be no commitment of resources, because the ESP does not authorize SERI to perform any construction activities. The Board finds that this reasoning is inconsistent with CEQ regulations, which require any agency to consider actions that are related to other actions that could lead to a significant impact on the environment.<sup>328</sup> Specifically, the Commission must consider the use of the environment and commitment of resources from the construction and operation of the proposed ESP plant or plants since these actions are directly related to granting the ESP license and could lead to a significant impact on the environment. Regardless, this finding did not ultimately affect the Board’s decision in this proceeding because these issues are unresolved and deferred to the COL stage when the plant design is selected.

In regard to the short-term use and long-term productivity, the NRC Staff concluded that the long-term productivity assessment can only be performed by discussing the benefits of operating the unit, which does not need to be assessed at the ESP stage.<sup>329</sup> Therefore, this issue is not resolved and must be performed at the COL stage when the benefits of the selected unit would be known.<sup>330</sup> The Staff stated that the irretrievable commitment of resources during construction of the new unit(s) would be similar to any major construction project (i.e., concrete, steel, and other building materials), but that the actual commitment can only be

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<sup>327</sup> 42 U.S.C. § 4332(2)(C)(i)-(v).

<sup>328</sup> See 40 C.F.R. § 1508.27(b)(7).

<sup>329</sup> See 10 C.F.R. § 52.18.

<sup>330</sup> See FEIS at 10-8.

defined once the reactor design is selected. Therefore, the Staff deferred the issue of irreversible and irretrievable commitment of resources to the COL stage and considers it unresolved at the ESP stage.<sup>331</sup>

Section 102(2)(C) also requires the agency to consult with and obtain comments from other Federal, State, and local agencies and from the public prior to making the detailed statements discussed above. A list of the agencies and persons consulted, public comments, and key consultation correspondence are documented in Appendices B, D, E, and F of the FEIS.

Based on the facts discussed above, the Board finds that section 102(2)(C) of NEPA has been complied with in this proceeding.

### **3. Section 102(2)(E) Compliance**

Section 102(2)(E) of NEPA requires the agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”<sup>332</sup> As discussed in Hearing Issue E (*supra* Part IV.E), the NRC Staff presented the environmental impacts of alternatives to the proposed action including energy, plant design, and site alternatives. In the FEIS, the Staff described its study and development of these alternatives to the proposed action, which involves unresolved conflicts concerning alternative uses of available resources. The Board finds that the impacts from the proposed site were compared to the alternatives and that none of the alternatives were obviously superior options. Based on these facts, the Board finds that section 102(2)(E) of NEPA has been complied with in this proceeding.

### **C. Independent Consideration of the Final Balance Among Conflicting Factors**

As part of its consideration of the NEPA-related matters in this uncontested proceeding for the Grand Gulf ESP, the Board was required to independently consider the final balance among the conflicting factors contained in the record of this proceeding. In the Board’s view, the conflicting factors include: (1) the relative magnitude of the environmental impacts of the proposed action (i.e., construction and operation of one or more ESP base load nuclear plants at the Grand Gulf site) as compared to other energy, plant design, and site alternatives; (2) unavoidable adverse environmental impacts during construction and operation of the plant or plants and the mitigative actions proposed to minimize their

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<sup>331</sup> See *id.* at 10-6.

<sup>332</sup> 42 U.S.C. § 4332(2)(E).

effects; (3) potential cumulative impacts in the context of past, present, and future actions at Grand Gulf site; (4) the magnitude of the irreversible and irretrievable commitment of resources; and (5) the relationship between short-term uses and long-term productivity of the human environment.

### *1. Alternative Comparison*

The Board has independently reviewed the NRC Staff's comparisons of energy, plant design, and site alternatives with the relative magnitude of the environmental impacts from a base load nuclear power plant at the Grand Gulf ESP site. In its balancing, the Board considered four energy alternatives not involving new generating capacity and two power generating alternatives considered by the Staff. The Board finds that the energy alternatives not involving new generating capacity were not clearly preferable to construction of a new nuclear plant. In regard to the power generating alternatives, the Board notes that construction and operation of a nuclear plant will have up to a moderate impact on the ecology. However, coal has higher impacts than a nuclear plant on the ecology, air quality, waste management, land use, and aesthetics. Natural gas has the same impacts as nuclear power on the ecology, higher impacts on air quality, and less beneficial socioeconomic and environmental justice impacts.<sup>333</sup> For these reasons, the Board independently finds that none of the viable alternative energy sources are clearly preferable to construction of a nuclear plant at the Grand Gulf ESP site.

The Board has reviewed plant design alternatives including heat dissipation alternatives and circulating water system alternatives. The Board finds that (1) all the heat dissipation options, except the wet natural draft and wet mechanical draft cooling towers, are not suitable for the site and the premise that dry cooling technology has some detrimental effects on electricity production is reasonable, and (2) it is reasonable to defer further discussion of the system design alternatives to the COL stage when a specific cooling system design is selected for the Grand Gulf site.

In addition, the Board finds that: (1) for the intake system, there is no basis to suggest that the two makeup water intake alternatives considered by SERI would be environmentally preferable to SERI's proposed embayment structure; (2) for the discharge system, there is no basis to suggest that the two discharge alternatives (i.e., a shoreline diffuser outfall and a submerged single-point discharge) were environmentally preferable to SERI's proposed design; and (3) none of the optional water supplies identified by the NRC Staff were preferable to the Mississippi River and wells in the alluvial aquifer.

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<sup>333</sup> See FEIS at 8-26 (Table 8-4).



The Board compared the impacts from construction and operation of a new nuclear plant at the Grand Gulf ESP site to three other potential sites at River Bend, Pilgrim, and FitzPatrick. In regard to construction impacts, the Board notes that the unresolved impacts to land use and water-related issues were assigned a small level and terrestrial ecosystem impact was assigned a moderate level for purposes of comparison to the other sites. For operational impacts, the Board notes that the unresolved water-related issues were assigned a small impact. Based on a review of the record, the Board finds nothing illogical about the NRC Staff's assignment of these levels for this comparison, but that these issues will need to be re-addressed at the COL stage.

In addition to these assignments, the Board finds that the NRC Staff concluded that the plant construction and operation at the Grand Gulf site have a potentially large level of impact on demography and a moderate level of impact for infrastructure and community services. However, each of the alternative sites has the same or other elevated impact levels for the other categories for both construction and operation. Based on its independent review of the construction and operational impacts, the Board concurs with the Staff that none of the alternative sites is obviously superior to the Grand Gulf site.

## **2. *Cumulative Impacts***

In section 7 of the FEIS, the NRC Staff evaluated the potential cumulative impacts resulting from the construction, operation, and decommissioning of one or more units in the context of past, present, and future actions at the Grand Gulf site. The Board notes that the Staff concluded that the potential cumulative impacts are generally small and that additional mitigative measures are not warranted. Ecological impacts from construction and socioeconomic impacts and environmental justice all have the potential for a moderate impact.<sup>334</sup>

Information was not available at the ESP stage to resolve other categories of impacts including land use, water use and quality, terrestrial ecosystems, non-radiological health, radiological impacts of operation of non-light-water reactor designs, and decommissioning. These issues would need to be addressed at the COL stage. In its independent review, the Board finds that there is nothing illogical with the Staff's assessment of cumulative impacts and that there is nothing to indicate that the facts in the record do not support the Staff's conclusions.<sup>335</sup>

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<sup>334</sup> See FEIS at 7-12.

<sup>335</sup> See *id.*

### 3. *Other Issues*

The magnitude of the irreversible and irretrievable commitments of resources, and the relationship between short-term uses and long-term productivity of the human environment are unresolved since the Board finds that they can only be meaningfully evaluated when the plant design is selected. These were appropriately deferred by the NRC Staff to the COL stage.

#### **D. Determination of Actions on the ESP To Protect Environmental Values**

Based on our discussion here and in Hearing Issue E (*supra* Part IV.E), the Board finds that the NRC Staff's review pursuant to 10 C.F.R. Part 51 has been adequate. The Board also finds that (1) the requirements of NEPA §§ 102(2)(A), (C), and (E) have been complied with in the proceeding, (2) its independent consideration of the final balance among the conflicting factors contained in the record of this proceeding supports the issuance of the ESP license, and (3) after considering reasonable alternatives, protection of the environment does not require denial of or further conditioning of the ESP license. The Board concludes that these factors support the granting of the ESP.

## VII. CONCLUSION

The Board has reviewed the record in this proceeding, including the FSER, the FEIS, the answers to the questions propounded by the Board and responded to by the NRC Staff and SERI,<sup>336</sup> the prefiled direct testimony and documentary evidence submitted by the Staff and SERI with respect to the topics on which the Board requested additional information, and the well-presented oral testimony of Staff and SERI witnesses given during the evidentiary hearing.

In our findings, we have relied upon, without independent verification, the accuracy and veracity of: (1) the content of the NRC Staff's documents, including the FEIS and the FSER, and those of SERI as placed into the record of this proceeding; and (2) the Staff's and SERI's responses to the Board's inquiries and their prefiled and in-person testimony at the oral portion of this proceeding. We have also, pursuant to Commission direction, relied upon the Staff's NEPA-related examination of the matters related to SERI's Application, including its consideration of alternatives.

In several instances, the Board's findings amplify, modify, or change statements made by the NRC Staff in the FSER or FEIS. These include the following:

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<sup>336</sup> See *supra* note 23 & accompanying text.

(1) as a design goal, PC-2 does not fully resolve the issues relating to inadvertent radiological releases in FSER § 2.4.13, but it is reasonable and preferable to defer the radiological transport characterization required by 10 C.F.R. § 100.20(c)(3) to the COL stage;<sup>337</sup> (2) to be consistent with 10 C.F.R. § 52.17(a) and 100.20(c)(3), the design requirements of PC-2 should be expanded to include all storage facilities and conveyance systems outside of containment that could release radionuclides to the liquid environment;<sup>338</sup> (3) any power level selected at the COL stage other than the 2000-MWe target value used in the alternative energy analysis would be new information; and (4) the short-term use of the environment and commitment of resources from construction and operation of the ESP plant or plants must be considered, but it is logical to defer this to the COL stage when the specific plant is defined.

Subject to the foregoing, and to the commitments and assumptions specified in (1) the Permit Conditions, COL Action Items, Site Characteristics, and Bounding Parameters specified in Appendix A of the FSER (NRC Staff Exhibit 44, ADAMS Accession No. ML0635603312), (2) Appendix J of the FEIS (NRC Staff Exhibit 45, ADAMS Accession No. ML063560332), (3) the table of Resolved Safety and Environmental Issues (NRC Staff Exhibit 3, ADAMS Accession No. ML063560116), and (4) the Summary of Issues for Which Cumulative Effects were Analyzed (NRC Staff Exhibit 9, ADAMS Accession No. ML063560097), we have reached the following determinations.

With respect to matters involving safety, i.e., issues pursuant to the AEA,<sup>339</sup> the Board has determined that: (1) the Application and the record of this proceeding, as supplemented by the information provided to the Board during the course of its review, contain sufficient information to support the NRC Staff's conclusions; (2) the review of the Application by the NRC Staff has been adequate;<sup>340</sup> (3) the issuance of the ESP will not be inimical to the common defense and security or to the health and safety of the public; and (4) taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having characteristics that fall within parameters for the site, can be constructed and operated without undue risk to the health and safety of the public.

With respect to matters involving the environment, i.e., issues arising from NEPA,<sup>341</sup> the Board has determined that the review conducted by the NRC Staff has been adequate.<sup>342</sup> In addition, the Board: (1) finds that the requirements of sections 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have

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<sup>337</sup> See *supra* note 142 & accompanying text.

<sup>338</sup> See *id.*

<sup>339</sup> See 69 Fed. Reg. at 2636.

<sup>340</sup> See 10 C.F.R. § 2.104(b)(2)(i).

<sup>341</sup> See 69 Fed. Reg. at 2636.

<sup>342</sup> See 10 C.F.R. § 2.104(b)(2)(ii); 10 C.F.R. Part 51.

been complied with in this proceeding; (2) having conducted its own independent balancing of the conflicting environmental and other factors, but excluding examination of the costs and benefits of the proposed facility, finds that the overall balance supports issuance of the ESP; and (3) after considering reasonable alternatives,<sup>343</sup> finds that protection of the environment does not require denial or conditioning of the license except to the extent specified herein. Therefore, the Board concludes that these items support issuance of the requested ESP.

For the foregoing reasons, it is ORDERED that the Director, Office of Nuclear Reactor Regulation, is authorized to issue to SERI an Early Site Permit for the Grand Gulf site for a duration of twenty (20) years, consistent with the Atomic Energy Act of 1954, Commission regulations, and this Initial Decision.

This Initial Decision will constitute the final decision of the Commission forty (40) days from the date of its issuance unless a petition for review is filed or the Commission directs otherwise.

It is so ORDERED.

THE ATOMIC SAFETY AND  
LICENSING BOARD<sup>344</sup>

Lawrence G. McDade, Chairman  
ADMINISTRATIVE JUDGE

Nicholas G. Trikouros  
ADMINISTRATIVE JUDGE

Dr. Richard E. Wardwell  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
January 26, 2007

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<sup>343</sup> As previously discussed, the Board did not consider those alternatives that the Commission has directed be postponed until the COL stage, including design alternatives.

<sup>344</sup> Copies of this Initial Decision were sent this date by Internet e-mail transmission to (1) counsel for the NRC Staff and (2) counsel for SERI.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 70-7004-ML**

**USEC INC.**  
**(American Centrifuge Plant)**

**February 1, 2007**

The Commission directs the Atomic Safety and Licensing Board to revise its mandatory hearing schedule.

**MEMORANDUM AND ORDER**

The Atomic Safety and Licensing Board in this proceeding recently denied a motion by USEC Inc. to accelerate the Board's proposed mandatory hearing schedule.<sup>1</sup> In denying USEC's motion, the Board stressed that its hearing schedule, which contemplates a Board decision by May 9, 2007, is based on Commission guidance provided in the Commission's Notice of Hearing for this proceeding.

The Commission, however, expressly "direct[ed] the Board to set a schedule for the hearing in this proceeding . . . that establishes as a goal the issuance of a final Commission decision on the pending [USEC] application within 2 1/2 years

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<sup>1</sup> See Memorandum and Order Denying USEC's Motion To Accelerate Mandatory Hearing Schedule and Establishing Guidelines for the Submission of Pre-filed Testimony by the Applicant (Dec. 22, 2006).

(30 months) from the date that the application was received.’’<sup>2</sup> USEC submitted its application on August 23, 2004, and therefore it was the Commission’s expectation that the Board would establish a hearing schedule that would allow for a final agency decision on USEC’s application by late February 2007.

Instead, the Board inappropriately has based its mandatory hearing schedule on a particular ‘‘milestone’’ set forth in the Commission’s hearing notice — the milestone deadline of a 240-day period between the issuance of the Final Environmental Impact Statement (‘‘FEIS’’) and Safety Evaluation Report (‘‘SER’’) and an initial decision by the Board.<sup>3</sup> This milestone, however, explicitly was provided for ‘‘a contested proceeding.’’<sup>4</sup> Indeed, the 240-day milestone encompasses time for a host of procedural steps that would not be at issue in an uncontested proceeding, including completion of discovery on admitted contentions, summary disposition motions, and motions to amend contentions.<sup>5</sup>

The Commission is mindful that there were delays in this proceeding beyond the Board’s control. The Board originally sought to have all principal licensing-related documents, including the FEIS and SER, by June 5, 2006.<sup>6</sup> The NRC Staff indicated that the FEIS would be available by that time but that the SER would only be issued likely by the end of June 2006.<sup>7</sup> But it was not until September 11, 2006, that the Staff issued the SER and provided it to the Board. This delayed the filing of the Staff’s proposed findings of fact and conclusions of law for the mandatory hearing, which the Board had requested be filed by August 11, 2006, but which the Staff was only able to submit 2 months later.<sup>8</sup>

Nonetheless, the Board now has had the FEIS since late May 2006, and the SER since September 2006. Yet its mandatory hearing schedule — contrary to the Commission’s clear directive in this proceeding — nowhere adheres to or even acknowledges the goal of issuing a final Commission decision in this proceeding within 30 months of the USEC application’s filing. While the Board found the specific accelerated schedule proposed by USEC to be unduly abbreviated,

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<sup>2</sup> See Notice of Receipt of Application for License, Notice of Availability of Applicant’s Environmental Report, Notice of Consideration of Issuance of License, and Notice of Hearing and Commission Order, CLI-04-30, 60 NRC 426, 432 (2004); 69 Fed. Reg. 61,411, 61,413 (Oct. 18, 2004).

<sup>3</sup> CLI-04-30, 60 NRC at 435.

<sup>4</sup> *Id.* at 433.

<sup>5</sup> *Id.* at 433-34.

<sup>6</sup> See Order (Request for Documents and Briefings) (April 19, 2006) at 2-3.

<sup>7</sup> See NRC Staff Motion for Modification and Clarification of Board Order Requesting Documents and Briefing (May 1, 2006) at 6.

<sup>8</sup> See NRC Staff Motion for Extension of Time for Submission of Preliminary Findings of Fact and Conclusions of Law (July 17, 2006) (noting that ‘‘the Staff review of technical issues is taking longer than expected which has extended time for completion’’ of the SER, and requesting that the Board-imposed deadline for submission of proposed findings of fact be extended until after the SER is issued).

we believe that the Board should be able to expedite the start of the mandatory hearing, which currently is not scheduled to begin until April 10, 2006.<sup>9</sup> We expect our boards to make concerted and express efforts and take the necessary steps to assure that they meet our scheduling goals. We have reviewed this mandatory hearing schedule and believe that the Board can and must set more immediate deadlines: e.g., require (1) NRC Staff filing of its written direct testimony by March 5, 2007, which would be approximately 3 weeks after the Board issues its hearing questions and issues (February 13, 2007); (2) USEC filing of any supplemental, clarifying, or correcting testimony by March 8, 2007;<sup>10</sup> and (3) commencement of the mandatory hearing about 1 week after the Staff submits its written direct testimony. We therefore direct the Board to revise its mandatory hearing schedule to begin the hearing no later than March 13, 2007, and to issue its decision by April 13, 2007.

Commissioner Jaczko disapproved this order.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK

Secretary of the Commission

Dated at Rockville, Maryland,  
this 1st day of February 2007.

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<sup>9</sup> Mandatory hearings do not involve a *de novo* review of the NRC Staff's findings, but rather "whether the safety and environmental record is 'sufficient' to support license issuance," or in other words, whether the NRC Staff "made findings with reasonable support in logic and fact." See *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005). In addition, we observe that the *LES* proceeding, a proceeding also involving a uranium enrichment facility, was contested and was completed within 30 months, including the mandatory hearing. See *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-06-17, 63 NRC 747 (2006).

<sup>10</sup> We note that USEC had suggested simultaneous submission of direct prefiled testimony in its motion to accelerate the schedule.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. IA-05-052**

**DAVID GEISEN**

**February 1, 2007**

**RULES OF PRACTICE: INTERLOCUTORY REVIEW;  
STAY/ABEYANCE**

The question whether to hold an NRC enforcement proceeding in abeyance pending a related criminal prosecution is generally suitable for interlocutory Commission review because, unlike most interlocutory questions, the abeyance issue cannot await the end of the proceeding (it becomes moot).

**RULES OF PRACTICE: INTERLOCUTORY REVIEW;  
STAY/ABEYANCE**

A petition seeking review of an order granting or denying such an abeyance motion meets our standard for interlocutory review because the appealed order would have an “immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer’s final decision.”

**RULES OF PRACTICE: STAY/ABEYANCE**

In analyzing the abeyance question, we balance here the risk of harm Mr.



Geisen could suffer from an abeyance order against the risk of harm DOJ could suffer from the NRC Staff moving forward in its enforcement hearing.

#### **RULES OF PRACTICE: STAY/ABEYANCE**

Given the Memorandum of Understanding between the NRC and DOJ regarding the potential need to hold our enforcement proceedings in abeyance pending the conclusion of DOJ's parallel criminal cases, we are generally inclined to accommodate an abeyance request from DOJ as long as it provides at least *some* showing of potential detrimental effect on its parallel criminal case. Memorandum of Understanding Between the Nuclear Regulatory Commission and the Department of Justice, 53 Fed. Reg. 50,317, 50,318 (§ II) (Dec. 14, 1988).

#### **RULES OF PRACTICE: HEARINGS (IMMEDIATELY EFFECTIVE ENFORCEMENT ORDERS)**

#### **ENFORCEMENT: HEARINGS (IMMEDIATELY EFFECTIVE ORDERS)**

Our regulations require that hearings regarding immediately effective enforcement orders be held expeditiously.

### **MEMORANDUM AND ORDER**

Once again, we are faced with the question whether to hold this enforcement proceeding in abeyance pending the outcome of a parallel criminal proceeding against Mr. David Geisen.<sup>1</sup> For the second time, the NRC Staff petitions us for interlocutory review of a Licensing Board order<sup>2</sup> denying a Staff motion to hold this proceeding in abeyance.<sup>3</sup> The challenged Board order concluded that the United States Department of Justice ("DOJ") had "fail[ed] to 'provide factual justification for delaying our . . . adjudicatory process and for imposing on [Mr. Geisen] the additional financial, professional, emotional, and other burdens that perforce accompany a delay in the resolution of [this] enforcement proceeding.'"<sup>4</sup> We grant the Staff's Petition and reverse the Board's order.

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<sup>1</sup> We faced this same question last year when the case was in a different procedural posture, and responded in the negative. *David Geisen*, CLI-06-19, 64 NRC 9 (2006).

<sup>2</sup> "Order (Denying Government's Request To Stay Proceeding)" (Jan. 12, 2007) ("January 12th Order").

<sup>3</sup> NRC Staff's Motion for Stay of Proceeding at 8 (Jan. 8, 2007) ("Staff's Motion").

<sup>4</sup> January 12th Order at 1 n.2, quoting CLI-06-19, 64 NRC at 13.

## I. BACKGROUND

This proceeding stems from the NRC Staff's Enforcement Order of January 16, 2006, immediately suspending Mr. Geisen from performing any work in the nuclear industry for 5 years. The Staff based its Enforcement Order on the finding that Mr. Geisen had engaged in deliberate misconduct by providing information that he knew was incomplete or inaccurate in some respects material to the NRC, a violation of 10 C.F.R. § 50.5(a)(2).

Concurrent with the Staff's enforcement investigation and action, DOJ was investigating criminal charges against Mr. Geisen, based on the same set of facts as those underlying the Staff's Enforcement Order. In early 2006, DOJ obtained a felony indictment of Mr. Geisen, charged him with concealing material information from the NRC and providing the NRC with false documents — crimes similar to the regulatory violations alleged in the Enforcement Order.

Given the similarity of the enforcement and criminal proceedings, DOJ asked the NRC Staff in March of 2006 to move that the Board hold the enforcement case in abeyance, pending the conclusion of the criminal case. The Staff filed the requested abeyance motion, but the Board denied it and we affirmed the Board's decision.<sup>5</sup>

In January of 2007, DOJ made this same request a second time, and provided an affidavit from Mr. Richard Poole (an attorney on DOJ's litigation team prosecuting Mr. Geisen) to support the requested motion.<sup>6</sup> The Staff filed the motion and affidavit, Mr. Geisen filed a brief opposing the motion, and the Board then heard oral argument on the matter. On January 12, 2007, the Board issued an order denying the Staff's motion. The Staff has now submitted a Petition for Interlocutory Review ("Staff's Petition") of that order, which Mr. Geisen opposes. On January 23d, we issued a housekeeping stay of the proceeding pending our issuance of a decision on the merits of the Staff's Petition.<sup>7</sup>

## II. DISCUSSION

As we observed in CLI-06-19, "[t]he question whether to hold an NRC enforcement proceeding in abeyance pending a related criminal prosecution is generally suitable for interlocutory Commission review because, unlike most interlocutory questions, the abeyance issue cannot await the end of the proceeding

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<sup>5</sup> *David Geisen*, LBP-06-13, 63 NRC 523, *aff'd*, CLI-06-19, 64 NRC 9 (2006).

<sup>6</sup> Affidavit of Richard Poole, Senior Trial Attorney (Jan. 8, 2006) ("Poole Affidavit"), attached to Staff's Motion.

<sup>7</sup> Today's decision renders moot Mr. Geisen's January 24th motion to vacate the housekeeping stay.

(it becomes moot).’’<sup>8</sup> A petition seeking review of an order granting or denying such an abeyance motion meets our standard for interlocutory review because the appealed order would have an ‘‘immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer’s final decision.’’<sup>9</sup> Therefore, as we did in CLI-06-19, we grant the NRC Staff’s Petition, and we rule below on the merits of the abeyance question.

Were the facts, arguments, and procedural posture of this case the same today as they were when we denied the Staff’s first abeyance motion last year,<sup>10</sup> we would summarily deny the instant motion. However, those factors are not the same.

In analyzing the abeyance question, we balance here the risk of harm Mr. Geisen could suffer from an abeyance order against the risk of harm DOJ could suffer from the NRC Staff moving forward in its enforcement hearing — the same approach we took in our last decision in this proceeding. We find that DOJ’s claim of potential harm is now more concrete and tangible than it was when we issued CLI-06-19, and that the balance of harms to DOJ and Mr. Geisen has shifted. This shift places the proceeding in the posture to which we referred in CLI-06-19 when we authorized the Staff to re-raise and the Board to reconsider the abeyance issue: ‘‘If, at a later point in the enforcement proceeding, the NRC Staff (at DOJ’s behest) presents the Board with specific claims of harm to the ongoing criminal proceeding, the Board is free to reconsider the abeyance question.’’<sup>11</sup>

### ***1. Potential Harm to DOJ***

Given the Memorandum of Understanding between the NRC and DOJ regarding the potential need to hold our enforcement proceedings in abeyance pending the conclusion of DOJ’s parallel criminal cases,<sup>12</sup> we are generally inclined to accommodate an abeyance request from DOJ as long as it provides ‘‘at least *some* showing of potential detrimental effect on [its parallel] criminal case.’’<sup>13</sup> Indeed, we made such an accommodation in *Siemaszko* last year, stating that ‘‘[w]e do not lightly second-guess DOJ’s views on whether, and how, premature disclosure

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<sup>8</sup> CLI-06-19, 64 NRC at 11 (footnote omitted).

<sup>9</sup> 10 C.F.R. § 2.341(f)(2)(i).

<sup>10</sup> CLI-06-19.

<sup>11</sup> 64 NRC at 14.

<sup>12</sup> Memorandum of Understanding Between the Nuclear Regulatory Commission and the Department of Justice, 53 Fed. Reg. 50,317, 50,318 (§ II) (Dec. 14, 1988).

<sup>13</sup> *Andrew Siemaszko*, CLI-06-12, 63 NRC 495, 502 (2006) (emphasis in original).

might affect its criminal prosecutions.’’<sup>14</sup> DOJ’s latest affidavit here presents more concrete and tangible information than did the earlier DOJ affidavit which we criticized in CLI-06-19, and more information even than the DOJ affidavit which we accepted in *Siemaszko*.<sup>15</sup> Also, the Staff’s briefs and both the Staff’s and the DOJ representative’s discussions at the Board’s oral argument hearing have likewise been more informative than they were last year.<sup>16</sup> We find that DOJ has met its burden to provide “at least *some* showing” of potential harm.

We give great weight to DOJ’s argument that the enforcement hearing in this proceeding is not currently scheduled to end until a mere 25 days prior to the start of the criminal trial and that the shortness of this period will interfere with DOJ’s ability to prepare for the criminal trial. DOJ further indicates that the current and impending *prehearing* activities will likewise interfere with its efforts to prepare its witnesses for the criminal trial. These are certainly significant “changed circumstances” — in that the criminal trial dates, the hearing dates, the designated deposition period, and the list of potential deponents were not set until many months after we issued CLI-06-19.

DOJ explains that “a great number of [the same] witnesses” will be called to testify in both the enforcement and criminal proceedings against Mr. Geisen,<sup>17</sup> and that DOJ will therefore have great difficulty in preparing for a criminal trial while a parallel hearing and depositions are taking place.<sup>18</sup> According to DOJ, the up-to-26 depositions in the enforcement case during the months leading up to the criminal trial’s April 16th starting date will make critical witnesses unavailable for its own trial preparation.<sup>19</sup> Even under the best of circumstances, DOJ expects to need more than the currently expected 25 days between the two hearings in which to prepare its witnesses for trial.<sup>20</sup> And DOJ’s problem will be further

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<sup>14</sup> *Id.* at 504. DOJ is rightly concerned that some defendants will attempt to use the Commission’s more relaxed discovery rules to gain information unavailable to them through the Federal Rules of Criminal Procedure. We are loath to permit a criminal defendant to use our procedures to do an end run around rules prescribed by the Supreme Court and implicitly approved by Congress. *Id.*

<sup>15</sup> *See id.* at 503 (“[T]he weight to be given the Staff’s reason for seeking an abeyance turns on the quality of the *factual record* — i.e., DOJ’s . . . affidavits supporting this and earlier delays” (emphasis in original)).

<sup>16</sup> This is not to denigrate the considerable contributions that Mr. Geisen’s counsel has also made to the record regarding this abeyance motion. But his client does not carry the burden of proof here.

<sup>17</sup> Transcript of Oral Argument Hearing (“Tr.”) Tr. 547 (Poole) (Jan. 11, 2007). *See also* Poole Affidavit at 2.

<sup>18</sup> Tr. 554 (Poole).

<sup>19</sup> Poole Affidavit at 5; Staff’s Petition at 15-16. *See generally* NRC Staff’s Reply to David Geisen’s Answer Opposing the NRC Staff’s Petition for Interlocutory Review of Denial of Staff Stay Motion at 4 (Jan. 24, 2007) (“Staff’s Reply”).

<sup>20</sup> Tr. 557-58 (Poole).

exacerbated if the enforcement hearing extends beyond March 21 — a prospect that both the NRC Staff and the Licensing Board consider quite possible.<sup>21</sup>

A major contributing factor to this possible runover is a recent development for which Mr. Geisen's counsel are themselves responsible: the significant increase in the number of Mr. Geisen's potential depositions in our enforcement proceedings. When the Board set the current "very aggressive" discovery schedule and hearing date,<sup>22</sup> it did so with the understanding that Mr. Geisen would depose between zero and five individuals.<sup>23</sup> Even with those small numbers, the Board's "very aggressive" schedule still ran a significant risk of allowing too little time for the parties to complete all depositions prior to the hearing.<sup>24</sup> Then, on January 10, Mr. Geisen's counsel increased the estimate to as many as thirteen deponents.<sup>25</sup>

Although Mr. Geisen's attorney later attempted to downplay this recent increase, he never disowned it outright. Instead, he offered a vague statement that he "has indicated on multiple occasions [that] the defense does not anticipate many depositions in this matter, and that remains true," and that the McAleer letter "merely places the Staff on notice that [thirteen] individuals might be relevant to Mr. Geisen's defense."<sup>26</sup> Nevertheless, Mr. McAleer's letter speaks for itself — "Counsel for Mr. Geisen may depose each of the foregoing [thirteen] persons in this matter, and we would appreciate receiving from you available dates for the NRC witnesses listed above."<sup>27</sup>

This showing of the potential (or even likely) inability of DOJ to adequately prepare its witnesses for the criminal trial would, without more, be sufficient in our view to conclude that DOJ has met its burden of proof under CLI-06-19 and *Siemaszko*. But there is more. Some prosecution witnesses will have already testified under oath four times before taking the stand in the criminal trial<sup>28</sup> and,

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<sup>21</sup> See Tr. 619-20 (Farrar, J.); Staff's Petition at 16.

<sup>22</sup> Tr. 556 (Clark).

<sup>23</sup> See Staff's Petition at 16, referring to both the November 14, 2006 Oral Argument transcript at 366 (zero to two people), and also the December 20, 2006 teleconference transcript at 434 (where Mr. Geisen's counsel estimated the depositions he would need at "somewhere from 0 to 5").

<sup>24</sup> See Tr. 556 (Clark).

<sup>25</sup> See Letter from Charles F.B. McAleer, Jr., to Lisa B. Clark (Jan. 10, 2007) ("McAleer letter"), appended to Staff's Petition as Attachment A (listing thirteen potential deponents). See also Staff's Reply at 2 & nn.6, 7 (referring to those thirteen potential deponents, plus the depositions of the two additional Staff employees).

<sup>26</sup> David Geisen's Answer Opposing the NRC Staff's Petition for Interlocutory Review at 6 n.5 (Jan. 22, 2007) ("Geisen's Opposition").

<sup>27</sup> McAleer Letter at 2.

<sup>28</sup> Sworn statements to both the NRC's Office of Investigations and the Grand Jury, the proposed depositions in this proceeding, and the Board's adjudicatory hearing. See Staff's Petition at 12.

in some cases, they gave their prior testimony years earlier.<sup>29</sup> In this context, there is a danger that there will be inadvertent discrepancies due to a lack of time for DOJ to review testimony with witnesses prior to trial.

We respectfully disagree with the Board's suggestions that such inconsistencies could easily be overcome by DOJ asking the witness(es) to explain the reasons for them.<sup>30</sup> The defense may well try to use them to cast doubt on the prosecution witnesses' credibility and thereby to diminish the jury's willingness to find Mr. Geisen "guilty beyond a reasonable doubt."<sup>31</sup> Moreover, the jurors will likely lack the technical expertise and experience needed to understand the significance or insignificance of the various inconsistencies.<sup>32</sup> The Federal Rules of Criminal Procedure do not authorize the taking of pretrial witness depositions for discovery purposes "because it unbalances the system in a manner that was considered prejudicial to the government."<sup>33</sup>

## **2. Potential Harm to Mr. Geisen**

The Geisen Enforcement Order was immediately effective, and certainly contributed to Mr. Geisen's loss of his job.<sup>34</sup> Our regulations require that hearings regarding immediately effective enforcement orders be held expeditiously.<sup>35</sup> When

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<sup>29</sup> See Staff's Petition at 13.

DOJ's potential harm is exacerbated further by the fact that Mr. Geisen's counsel can cross-examine the NRC Staff's witnesses, both at depositions and the NRC hearing, with full knowledge of the contents of the Grand Jury transcripts. The Staff's lack of access to the Grand Jury testimony and DOJ's inability to advise the Staff as to that testimony preclude the Staff from preventing or correcting inconsistencies between witnesses' testimony before the Grand Jury and their later testimony at either an enforcement-related deposition or the enforcement hearing itself. Poole Affidavit at 3; Staff's Petition at 6, 13, 14; Staff's Motion at 8. Moreover, the resulting flaws in the NRC adjudicatory record could serve as the basis for improper factual findings by the Board — findings which Mr. Geisen could likewise use to his advantage during the criminal trial. See Staff's Motion at 8, 9; Staff Petition at 7, 14-15. These are valid DOJ concerns. But their weight is diminished somewhat by the fact that DOJ chose to follow its usual practice of not asking the District Court to release the Grand Jury transcripts to DOJ and the NRC Staff (see Tr. 616 (Farrar, J.); Geisen's Opposition at 5 n.3; Staff's Reply at 4 n.10), despite being asked to do so by the NRC Staff (Tr. 599 (Clark); Staff's Reply at 4 n.10). Factfinding at the NRC hearing may be further distorted by Mr. Geisen's (and other witnesses') invocation of the Fifth Amendment privilege against self-incrimination. When we considered the abeyance question previously, that privilege had not yet been invoked.

<sup>30</sup> See Tr. 550, 563, 594, 617 (Farrar, J.).

<sup>31</sup> See Tr. 563-64 (Poole); Staff's Petition at 14.

<sup>32</sup> See Staff's Petition at 14.

<sup>33</sup> See Tr. 541. See generally Fed. R. Crim. P. 16.

<sup>34</sup> See Letter from Lori J. Armstrong, Director, Nuclear Engineering, Dominion Energy Kewaunee, Inc., to Davis [sic] Geisen (Feb. 16, 2006), appended as Attachment B to Mr. Geisen's Opposition to the NRC Staff's Motion To Hold the Proceeding in Abeyance (March 30, 2006).

<sup>35</sup> 10 C.F.R. § 2.202(c)(1).

we first considered this factor in the summer of 2006, Mr. Geisen's enforcement proceeding was in a very different posture. We were faced then with only general arguments about Mr. Geisen being deprived of the opportunity of employment in his chosen line of work. Today, the arguments regarding that deprivation are more focused, and the related facts are more specific.

Last March, the Staff filed its first abeyance motion when the case was in its infancy, only 5 weeks after Mr. Geisen had successfully requested an expedited hearing. Even by the time we issued CLI-06-19 last July, discovery had barely begun, the possibility of depositions was still remote, and no one knew when the United States District Court would conduct Mr. Geisen's criminal trial. Today, by contrast, the parties have almost completed written discovery, are poised to immediately begin depositions of up to twenty-six identified individuals, and the District Court has set both tentative and fallback trial dates of April 16 and July 16, 2007, respectively. We are therefore in a better position today than we were last summer to evaluate the severity of the possible harm Mr. Geisen would suffer from a grant of the Staff's abeyance motion. For the reasons set forth below, we believe the severity is entitled to less weight than we gave it last year.

We were faced last year with a request for an abeyance of indefinite duration, until the end of a then-unscheduled criminal trial. By contrast, as noted above, the District Court has now set tentative and fallback dates for trial. Holding our enforcement proceeding in abeyance from today until the estimated conclusion of the criminal trial in late May, Mr. Geisen's delay would run for only 4 months (late January through late May), and his enforcement hearing would therefore presumably conclude in late July instead of late March.<sup>36</sup> This delay is, therefore, not only more precise (4 months vs. indefinite) but also less severe than the delay we declined to impose on Mr. Geisen in CLI-06-19. This conclusion would stand even were the start of the criminal trial postponed from April until July, though the difference in severity would be less. Due to the more precise information regarding the delay (4 months vs. indefinite), we accord less weight here to the severity of the potential harm to Mr. Geisen than we accorded it in CLI-06-19.

That weight is further diminished by Mr. Geisen's decision not to challenge the immediate effectiveness of his enforcement order, as our rules permit.<sup>37</sup> His decision weakens (though it does not completely undermine) his claim that the enforcement action has deprived him of the opportunity to work in his chosen profession — a claim that is a necessary predicate to his current claim that a delay in the enforcement action continues to deny him that same opportunity.

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<sup>36</sup> We recognize that the criminal trial could be postponed until July (or even later) for any number of reasons. However, we have to make a decision here based on the best information currently available to us. If circumstances change significantly, we are amenable to considering a motion from Mr. Geisen to lift today's abeyance.

<sup>37</sup> 10 C.F.R. § 2.202(c)(2)(i).

Finally, we note that Mr. Geisen's firing stemmed only partially from the NRC enforcement order. It also stemmed from a Grand Jury indictment. Mr. Geisen's opportunity for re-employment can likely occur only if *both* the enforcement and criminal actions have concluded in Mr. Geisen's favor. The letter by which Mr. Geisen was fired makes this clear:

While in effect, the NRC Order removes your qualifications to perform your job at Kewaunee Power Station. Additionally, the federal grand jury indictment you have received may also impact the duration of your inability to work for the Company. *Because of these circumstances*, the Company regrets that it must terminate your employment effective the date of this letter. . . . When and if you are able to regain the legal status necessary to be considered for work at Kewaunee, please know that you are welcome to contact us to discuss the possibility of future re-employment.<sup>38</sup>

A victory by Mr. Geisen in the enforcement proceeding would therefore be a necessary, but probably not a sufficient, condition for the removal of the harm of which he complains. Consequently, an abeyance of the enforcement case cannot, by itself, be viewed as the sole cause of delay in Mr. Geisen's opportunity for re-employment with an NRC licensee.<sup>39</sup>

### III. CONCLUSION

We find that the potential harm to Mr. Geisen has decreased since our assessment of it last summer, and that the potential harm to DOJ is more imminent and tangible. We conclude that the possible harms to DOJ now outweigh those to Mr. Geisen. And we also conclude that DOJ has easily met its required light burden to make "at least some showing of potential detrimental effect on the criminal case."<sup>40</sup> Consequently, we

- (i) *reverse* the Board's denial of the Staff's motion to hold this enforcement proceeding in abeyance,
- (ii) *grant* the motion for abeyance, and
- (iii) *vacate* our January 23d housekeeping stay.

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<sup>38</sup> See Armstrong Letter, *supra* note 34 (emphasis added).

<sup>39</sup> This may appear to contradict our statement in CLI-06-19 that the assurance Mr. Geisen received from the Kewaunee facility's management that he would be considered for a job there "was premised solely on the lifting of the Commission's Enforcement Order." 64 NRC at 12 (emphasis added). To the extent we suggested that the Grand Jury indictment of Mr. Geisen played no role in his firing, we correct that implication today.

<sup>40</sup> *Siemaszko*, CLI-06-12, 63 NRC at 502 (emphasis in original).



However, we reiterate that, if circumstances change significantly, we are amenable to considering a motion from Mr. Geisen to lift today's abeyance.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 1st day of February 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 52-009-ESP**

**SYSTEM ENERGY RESOURCES, INC.**  
**(Early Site Permit for Grand Gulf**  
**ESP Site)**

**February 15, 2007**

**ORDER**

On January 26, 2007, the Atomic Safety and Licensing Board issued an Initial Decision authorizing the issuance of the Grand Gulf Early Site Permit.<sup>1</sup> Before the Early Site Permit for the Grand Gulf ESP site can be made effective, the Commission must review and approve the Licensing Board's Initial Decision authorizing its issuance.<sup>2</sup> In support of our review, we direct the NRC Staff and the Applicant, System Energy Resources, Inc., to respond to three specific issues raised by that order and to submit any other comments they deem pertinent to our review:

First, the Board deferred to the COL stage issues regarding possible ground water contamination by radwaste. Specifically, the Board found that Permit Condition 2 "does not fully resolve the uncertainty in the characterization required to address radionuclide transport, and as such, PC-2 does not resolve the

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<sup>1</sup> LBP-07-1, 65 NRC 27 (2007).

<sup>2</sup> See 10 C.F.R. § 2.340(f).

issues discussed in FSER § 2.4.13.”<sup>3</sup> The Board also found that it is “possibly advantageous to defer further characterization of radionuclide transport to the COL stage when design details and facility locations are available to focus the additional information.”<sup>4</sup> The parties should state their position on the deferral.

Second, the Board found the Staff position that there is no short-term damage to the environment and no commitment of resources with an ESP to be inconsistent with CEQ regulations requiring agencies to consider “related” actions, and deferred this issue to the COL stage.<sup>5</sup> The parties should state their position on the deferral.

Third, the Board found that any power level selected at the COL stage other than the 2000 MWe target value used in the alternative energy analysis would constitute new information that, if found to be significant, would have to be evaluated at the COL stage.<sup>6</sup> The parties should state their position on this assertion.

The NRC Staff and Applicant are encouraged to include any other views on the Board’s decision that they believe pertinent to the Commission’s review. Comments should be limited to twenty-five pages and filed no more than 10 days from the date of this Order.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 15th day of February 2007.

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<sup>3</sup> LBP-07-1, 65 NRC at 58-59.

<sup>4</sup> *Id.* at 59.

<sup>5</sup> *Id.* at 102.

<sup>6</sup> *Id.* at 80.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-0219-LR**  
**(License Renewal)**

**AMERGEN ENERGY COMPANY, LLC**  
**(Oyster Creek Nuclear Generating**  
**Station)**

**February 26, 2007**

**FEDERAL COURTS: OUT-OF-CIRCUIT PRECEDENT**

The NRC is not obligated to adhere, in all of its proceedings, to the first court of appeals decision to address a controversial question. Such an obligation would defeat any possibility of a conflict between the Circuits on important issues.

**NATIONAL ENVIRONMENTAL POLICY ACT: TERRORISM  
CONTENTIONS**

The National Environmental Policy Act does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities. “Terrorism contentions are, by their very nature, directly related to security and are therefore, under our [license renewal] rules, unrelated to ‘the detrimental effects of aging.’ Consequently, they are beyond the scope of, not ‘material’ to, and inadmissible in, a license renewal proceeding.” Moreover, as a general matter, NEPA “imposes no legal duty on the NRC to consider intentional malevolent acts . . . in conjunction with commercial power reactor license renewal applications.”

**NATIONAL ENVIRONMENTAL POLICY ACT: TERRORISM  
CONTENTIONS; PROXIMATE CAUSE**

“The ‘environmental’ effect caused by third-party miscreants ‘is . . . simply too far removed from the natural or expected consequences of agency action to require a study under NEPA.’” “[T]he claimed impact is too attenuated to find the proposed federal action to be the ‘proximate cause’ of that impact.” There simply is no “‘proximate cause’” link between an NRC licensing action, such as (in this case) renewing an operating license, and any altered risk of terrorist attack. Instead, the level of risk depends upon political, social, and economic factors *external* to the NRC licensing process. It is not sensible to hold an NRC licensing decision, rather than terrorists themselves, the “‘proximate cause’” of an attack on an NRC-licensed facility.

**GENERIC ENVIRONMENTAL IMPACT STATEMENT:  
TERRORISM ANALYSIS**

The NRC Staff’s Generic Environmental Impact Statement (GEIS) for license renewal has already “performed a discretionary analysis of terrorist acts in connection with license renewal, and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events.” And, as required by the GEIS, the NRC Staff performed a site-specific analysis of alternatives to mitigate severe accidents.

**CONTENTION ADMISSIBILITY: APPEAL, NEW INFORMATION  
IMPERMISSIBLE**

As a legal matter, the specific characteristics of the facility now identified as special risk factors amount to new information, not part of the original contention, and improperly introduced for the first time on appeal.

**REMEDIES: ENFORCEMENT**

Site-specific claims relating to the safe *ongoing* operations of a nuclear reactor are not matters peculiar to plant aging or to the license extension period. If information in hand suggests license amendments or other protective measures may be required for a nuclear plant, then a petition for relief under 10 C.F.R. § 2.206 (providing for petitions for enforcement relief) may be filed with the NRC.

## REMEDIES: RULEMAKING, PETITION FOR WAIVER

If there is reason to believe that a departure from the NRC's license renewal Generic Environmental Impact Statement and related regulations is warranted, then the remedy is a petition for rulemaking to modify our rules or a petition for a waiver of our rules based on "special circumstances," not an adjudicatory contention.

## MEMORANDUM AND ORDER

This is a proceeding to renew the operating license of the Oyster Creek Nuclear Generating Station. Several months ago, in CLI-06-24, we affirmed a Licensing Board decision<sup>1</sup> rejecting two contentions proposed by the New Jersey Department of Environmental Protection (New Jersey).<sup>2</sup> We postponed deciding one other question New Jersey raised on appeal<sup>3</sup> — whether the Board properly rejected a contention claiming that the National Environmental Policy Act (NEPA) requires the NRC to consider, as part of its license renewal review, the consequences of a hypothetical terrorist attack on the Oyster Creek reactor. Today, notwithstanding a recent decision by the United States Court of Appeals for the Ninth Circuit, holding that the NRC may not exclude NEPA-terrorism contentions categorically,<sup>4</sup> we reiterate our longstanding view that NEPA demands no terrorism inquiry. We also point out that, for license renewal, the NRC has in fact examined terrorism under NEPA and found the impacts similar to the impacts of already-analyzed severe reactor accidents. Hence, we affirm the Board's rejection of New Jersey's NEPA-terrorism contention.

In addition, in today's decision we address, and find moot, pending appeals

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<sup>1</sup> LBP-06-7, 63 NRC 188 (2006).

<sup>2</sup> CLI-06-24, 64 NRC 111 (2006).

<sup>3</sup> Brief on Behalf of Petitioner New Jersey Department of Environmental Protection on Appeal from Order LBP-06-7 of the Atomic Safety and Licensing Board Denying Request for Hearing and Petition To Intervene (New Jersey Appeal) (March 28, 2006).

<sup>4</sup> *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016 (9th Cir. 2006), *cert. denied sub nom. Pacific Gas & Electric Co. v. San Luis Obispo Mothers for Peace*, No. 06-466 (Jan. 16, 2007). Pacific Gas and Electric Company, not the government, filed a certiorari petition in the *San Luis Obispo Mothers for Peace* case. In responding to the certiorari petition, the government made clear its disagreement with the Ninth Circuit decision on the merits, but pointed out that the NEPA-terrorism issue had not yet been addressed directly by other courts of appeals, and thus was not yet ripe for Supreme Court review. See Brief for the Federal Respondents, *Pacific Gas & Electric Co. v. San Luis Obispo Mothers for Peace*, No. 06-466 (Supreme Court, filed December 15, 2006).

filed by AmerGen Energy Company, LLC (AmerGen)<sup>5</sup> and the NRC Staff<sup>6</sup> concerning a “dry well liner” contention filed by a coalition of organizations opposed to renewing the Oyster Creek operating license.

## I. INTRODUCTION

### A. Preliminary Matter

Appeals filed by AmerGen and the NRC Staff both sought reversal of the Board’s decision to admit a contention filed by the Nuclear Information and Resource Service (“NIRS”), Jersey Shore Nuclear Watch, Inc., Grandmothers, Mothers and More for Energy Safety, New Jersey Public Interest Research Group, New Jersey Sierra Club, and New Jersey Environmental Federation (collectively, “Citizens”) on Oyster Creek’s plan, or (alleged) lack of a plan, for monitoring the reactor’s dry well liner.

After AmerGen’s and the NRC Staff’s appeals were filed, the Board issued a new decision finding that Citizens’ contention, as originally admitted, was a contention of “omission” that had later been cured.<sup>7</sup> The Board permitted Citizens to file a new contention based upon AmerGen’s docketed commitment to perform periodic ultrasonic testing in the sand bed region of the dry well liner.

We postponed our consideration of the AmerGen and NRC Staff appeals to await the outcome of the process the Board had set in motion. Since then, the Board has granted Citizens’ petition to file a new contention on the dry well liner issue.<sup>8</sup> While AmerGen and the NRC Staff have not formally withdrawn their appeals, the Board’s latest decision effectively shifts the focus of potential future agency litigation to the newly admitted contention. In recognition of this change, we tie up loose ends today by dismissing the pending AmerGen and NRC Staff appeals — which were directed to Citizens’ now-superseded original contention — as moot.

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<sup>5</sup> AmerGen Appeal of LBP-06-07 (License Renewal Proceeding for the Oyster Creek Nuclear Generating Station, Docket No. 50-219) (AmerGen Notice) (March 14, 2006) and Brief in Support of Appeal from LBP-06-07 (AmerGen Appeal) (March 14, 2006).

<sup>6</sup> NRC Staff Notice of Appeal of LBP-06-07 (NRC Staff Notice) (March 14, 2006) and NRC Staff’s Brief in Support of Appeal from LBP-06-07 (NRC Staff Appeal) (March 14, 2006).

<sup>7</sup> LBP-06-16, 63 NRC 737 (2006). *See generally Duke Energy Corp.* (McGuire Nuclear Energy Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382-84 (2002).

<sup>8</sup> LBP-06-22, 64 NRC 229 (2006).

## B. Background — New Jersey’s NEPA-Terrorism Contention

New Jersey maintains that NEPA requires the NRC to consider the consequences of a terrorist attack on Oyster Creek. Under NEPA, in New Jersey’s view, the NRC Staff’s environmental analysis ought to have included a more elaborate examination of “Severe Accident Mitigation Alternatives” at Oyster Creek, including an inquiry into the consequences of a potential aircraft attack on the reactor, the vulnerability of the spent fuel pool to terrorist attack and to “design basis” threats,<sup>9</sup> and long-term compensatory measures to defend against terrorism.<sup>10</sup>

The Board held that terrorism and “design basis threat” reviews, while important and ongoing, lie outside the scope of NEPA in general and of license renewal in particular,<sup>11</sup> and rejected New Jersey’s proposed NEPA contention.<sup>12</sup>

## II. ANALYSIS

New Jersey argues that the Board erred in rejecting its proposed contention regarding the adequacy of AmerGen’s Severe Accident Mitigation Alternatives analysis. This contention focused particularly on AmerGen’s failure to analyze Oyster Creek’s vulnerability to terrorist air attack, including risk of potential damage to the reactor core (based on the specifics of the Oyster Creek design and current design basis threat information), vulnerability of the spent fuel pool, and the sufficiency of interim compensatory measures intended to improve Oyster Creek’s damage response capabilities.

Last June, in *San Luis Obispo Mothers for Peace v. NRC*, the Ninth Circuit issued a decision holding that the NRC could not, under NEPA, categorically refuse to consider the consequences of a terrorism attack against a spent fuel storage facility on the Diablo Canyon reactor site in California. New Jersey points to the Ninth Circuit decision as authority for its NEPA-terrorism contention in the current license renewal proceeding.<sup>13</sup> Respectfully, however, we disagree with the Ninth Circuit’s view. We of course will follow it, as we must, in the *Diablo Canyon* proceeding itself. But the NRC is not obliged to adhere, in all of

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<sup>9</sup>The “design basis threat” rule describes general adversary characteristics that designated NRC licensees, including nuclear power plant licensees, are required to defend against with high assurance. *See generally* 10 C.F.R. § 73.1.

<sup>10</sup>*See* New Jersey Petition at 3-6 (unnumbered).

<sup>11</sup>*See* LBP-06-7, 63 NRC at 199-204.

<sup>12</sup>*See id.* at 199-211.

<sup>13</sup>*See* New Jersey Department of Environmental Protection’s Notice of Pertinent New Case Law Affecting Appeal and Request for Its Consideration (June 12, 2006). As pointed out in note 4, *supra*, the Supreme Court recently declined to review the Ninth Circuit decision.



its proceedings, to the first court of appeals decision to address a controversial question.<sup>14</sup> Such an obligation would defeat any possibility of a conflict between the Circuits on important issues.<sup>15</sup> For the reasons we gave in our prior decisions,<sup>16</sup> and for the reasons the Solicitor General gave in his recent Supreme Court brief in the *Diablo Canyon* case,<sup>17</sup> we continue to believe that NEPA does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities.

We find that the Board properly applied our settled precedents on the NEPA-terrorism issue. “Terrorism contentions are, by their very nature, directly related to security and are therefore, under our [license renewal] rules, unrelated to ‘the detrimental effects of aging.’ Consequently, they are beyond the scope of, not ‘material’ to, and inadmissible in, a license renewal proceeding.”<sup>18</sup> Moreover, as a general matter, NEPA “imposes no legal duty on the NRC to consider intentional malevolent acts . . . in conjunction with commercial power reactor license renewal applications.”<sup>19</sup> “The ‘environmental’ effect caused by third-party miscreants ‘is . . . simply too far removed from the natural or expected consequences of agency action to require a study under NEPA.’”<sup>20</sup> “[T]he claimed impact is too attenuated to find the proposed federal action to be the ‘proximate cause’ of that impact.”<sup>21</sup>

Our prior precedents are consistent with Supreme Court NEPA doctrine. In two major decisions — *Metropolitan Edison Co. v. People Against Nuclear Energy* (1983) and *Department of Transportation v. Public Citizen* (2004) — the Court has said that a “reasonably close causal relationship” between federal agency action and environmental consequences is necessary to trigger NEPA; the Court

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<sup>14</sup> An agency is not required to acquiesce in an unfavorable decision when faced with the same legal issue in another circuit: under preclusion doctrines a court of appeals decision may prevent the government from relitigating the same issue with the same party, “but it still leaves [the government] free to litigate the same issue in the future with other litigants.” *United States v. Stauffer Chemical Co.*, 464 U.S. 165, 173 (1984). See also *United States v. Mendoza*, 464 U.S. 154, 160 (1984).

<sup>15</sup> A conflict in the Circuits is a key criterion informing the exercise of the Supreme Court’s certiorari jurisdiction. See Sup. Ct. R. 10.

<sup>16</sup> See generally *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340 (2002).

<sup>17</sup> See note 4, *supra*.

<sup>18</sup> *McGuire/Catawba*, CLI-02-26, 56 NRC at 364.

<sup>19</sup> *Id.* at 365.

<sup>20</sup> *Id.*, quoting *Private Fuel Storage*, CLI-02-25, 56 NRC at 349.

<sup>21</sup> *Private Fuel Storage*, CLI-02-25, 56 NRC at 349, citing *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 772-75 (1983). See also *Department of Transportation v. Public Citizen*, 541 U.S. 752, 767 (2004).

analogized NEPA's causation requirement to the tort law concept of "proximate cause."<sup>22</sup>

The Ninth Circuit brushed aside the Supreme Court's "proximate cause" test as somehow "inapplicable" to NRC licensing decisions.<sup>23</sup> But the Supreme Court has held, unconditionally, that the test is "required."<sup>24</sup> The Ninth Circuit's view notwithstanding, there simply is no "proximate cause" link between an NRC licensing action, such as (in this case) renewing an operating license, and any altered risk of terrorist attack. Instead, the level of risk depends upon political, social, and economic factors *external* to the NRC licensing process.<sup>25</sup> It is not sensible to hold an NRC licensing decision, rather than terrorists themselves, the "proximate cause" of an attack on an NRC-licensed facility.

In any event, a NEPA-driven review of the risks of terrorism would be largely superfluous here, given that the NRC has undertaken extensive efforts to enhance security at nuclear facilities,<sup>26</sup> including (most recently) proposing a new and more stringent "design basis threat rule."<sup>27</sup> These ongoing post-9/11 enhancements provide the best vehicle for protecting the public.<sup>28</sup> And, as the NRC has pointed out in other cases, substantial practical difficulties impede meaningful NEPA-

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<sup>22</sup> *Department of Transportation*, 541 U.S. at 767; *Metropolitan Edison*, 460 U.S. at 774.

<sup>23</sup> See 449 F.3d at 1029.

<sup>24</sup> *Department of Transportation*, 541 U.S. at 767; *Metropolitan Edison*, 460 U.S. at 774.

<sup>25</sup> The terrorism risk at Oyster Creek remains the same during the renewal period as it was the day before when the plant still operated under its original license. In fact, since renewal applications typically are processed before the expiration of the initial license, a plant may continue to operate under the terms of its original license for some time after the renewal decision. Consequently, even if NEPA required a terrorism analysis of the sort advocated by New Jersey, any such analysis would leave Oyster Creek's present operation unaltered.

A license renewal proceeding is distinguishable from the situation considered in *San Luis Obispo Mothers for Peace*, where the NRC had before it a proposal to construct a dry cask storage facility at a nuclear reactor site. Unlike the situation in that case, a license renewal application does not involve new construction. So there is no change to the physical plant and thus no creation of a new "terrorist target."

<sup>26</sup> See, e.g., *Private Fuel Storage*, CLI-02-25, 56 NRC at 343-44.

<sup>27</sup> See Proposed Rule: "Design Basis Threat," 70 Fed. Reg. 67,380 (Nov. 7, 2005); Final Rulemaking to Revise 10 C.F.R. 73.1, Design Basis Threat, 72 Fed. Reg. 12,705 (Mar. 19, 2007).

<sup>28</sup> New Jersey argues that a 10 C.F.R. Part 51 NEPA review differs from a Part 54 review because a Part 54 review "centers on 'the detrimental effects of aging' on the components of the facility." New Jersey Appeal at 9. But New Jersey concedes the limited nature of the Part 51 environmental review, acknowledging that it "focuses on the potential environment impacts anticipated to occur *over the 20 years of proposed license renewal*." *Id.* (emphasis added). The NRC's ongoing security program covers current operations and extends into the renewal period. We do not see the value in diverting limited agency resources from our ongoing anti-terrorist efforts to undertake a special NEPA review of terrorism risks and consequences over the renewal period.

terrorism review,<sup>29</sup> while the problem of protecting sensitive security information in the quintessentially *public* NEPA and adjudicatory process presents additional obstacles.<sup>30</sup>

Beyond all of this, and even if as a general matter we were to accede to the Ninth Circuit's view and decide to consider terrorism under NEPA, there is no basis for admitting New Jersey's NEPA-terrorism contention in this license renewal proceeding. As the Licensing Board pointed out, the NRC Staff's Generic Environmental Impact Statement (GEIS) for license renewal has already "performed a discretionary analysis of terrorist acts in connection with license renewal, and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events."<sup>31</sup> And, as required by the GEIS,<sup>32</sup> the NRC Staff performed a

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<sup>29</sup> See, e.g., *Private Fuel Storage*, CLI-02-25, 56 NRC at 350-51. See also *Limerick Ecology Action v. NRC*, 869 F.2d 719, 743-44 (3d Cir. 1989). As in *Limerick Ecology Action*, where the court of appeals upheld an NRC refusal to admit for hearing a NEPA-terrorism contention, it's not clear from New Jersey's contention how the NRC Staff, or the Licensing Board, is to go about assessing, meaningfully, the risk of terrorism at the particular site in question (Oyster Creek).

<sup>30</sup> See, e.g., *Private Fuel Storage*, CLI-02-25, 56 NRC at 354-57.

<sup>31</sup> LBP-06-7, 63 NRC at 201 n.8. New Jersey apparently believes that the NRC's ongoing attention to protecting nuclear facilities against terrorism equates to an obligation to perform a site-specific NEPA-terrorism review. See New Jersey Appeal at 21-22. This is not so. The NRC's decision to use its *Atomic Energy Act* authority to require all of its power reactor licensees to take precautionary measures against improbable, but potentially destructive, terrorist attacks does not compel the agency to analyze the consequences of successful attacks at particular sites under NEPA. See *Ground Zero Center for Non-Violent Action v. U.S. Department of the Navy*, 383 F.3d 1082, 1090 (9th Cir. 2004).

<sup>32</sup> The GEIS provides:

With regard to sabotage, quantitative estimates of risk from sabotage are not made in external event analyses because such estimates are beyond the current state of the art for performing risk assessments. The [C]ommission has long used deterministic criteria to establish a set of regulatory requirements for the physical protection of nuclear power plants from the threat of sabotage, 10 CFR Part 73, "Physical Protection of Plants and Materials", delineates these regulatory requirements. In addition, as a result of the World Trade Center bombing, the Commission amended 10 CFR Part 73 to provide protection against malevolent use of vehicles, including land vehicle bombs. This amendment requires licence[e]s to establish vehicle control measures, including vehicle barrier systems to protect against vehicular sabotage. The regulatory requirements under 10 CFR [P]art 73 provide reasonable assurance that the risk from sabotage is small. Although the threat of sabotage events cannot be accurately quantified, the [C]ommission believes that acts of sabotage are not reasonably expected. Nonetheless, if such events were to occur, the [C]ommission would expect that resultant core damage and radiological releases would be no worse than those expected from internally initiated events.

Based on the above, the [C]ommission concludes that the risk from sabotage and beyond design basis earthquakes at existing nuclear power plants is small and additionally, that the risks f[ro]m other external events, are adequately addressed by a generic consideration of internally initiated severe accidents.

(Continued)

site-specific analysis of alternatives to mitigate severe accidents.<sup>33</sup> As though the NRC had conducted no site-specific inquiry at all, New Jersey argues that the Board mistakenly relied on a “general rule that plant-specific issues relating to a plant’s ‘current licensing basis’ are *ordinarily* beyond the scope of a license renewal review.”<sup>34</sup> According to New Jersey, this reliance was misplaced because of specific distinguishing characteristics of the Oyster Creek site, which make it particularly vulnerable to terrorist threats. These characteristics, New Jersey argues, justify the exercise of the Commission’s “discretion to consider serious safety, environmental or common defense and security matters in extraordinary circumstances.”<sup>35</sup>

New Jersey identifies Oyster Creek’s special distinguishing characteristics as: the (allegedly) obsolete Mark 1 containment design of the reactor and the elevated spent fuel pool; the location of the reactor, specifically its proximity to both Philadelphia, Pennsylvania, and Newark, New Jersey; and the facts that nuclear facilities (purportedly) were among the original al Qaeda targets and that the Coast Guard “has implemented a permanent safety zone” around Oyster Creek because of its finding that there is a “‘specific and continuing threat’ to Oyster Creek.”<sup>36</sup>

We agree with AmerGen<sup>37</sup> that, as a legal matter, the specific characteristics of the Oyster Creek facility now identified by New Jersey as special risk factors amount to new information, not part of the original contention and improperly

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Although external events are not discussed in further detail in this chapter, it should be noted that the NRC is continuing to evaluate ways to reduce the risk from nuclear power plants from external events. For example, each licensee is performing an individual plant examination to look for plant vulnerabilities to internally and externally initiated events and considering potential improvements to reduce the frequency or consequences of such events. Additionally, as discussed in Section 5.4.1.2, as part of the review of individual license renewal applications, a site-specific consideration of alternatives to mitigate severe accidents will be performed in order to determine if improvements to further reduce severe accident risk or consequences are warranted.

NUREG-1437, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants,” Vol. 1, p. 5-18 (May 1996).

<sup>33</sup> See Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 28 (Oyster Creek Nuclear Generating Station), *Final Report* (January 2007), especially at pp. 5-3 to 5-11 and Appendix G (“NRC Staff Evaluation of Severe Accident Mitigation Alternatives for Oyster Creek Nuclear Generating Station in Support of License Renewal Application”).

<sup>34</sup> New Jersey Appeal at 16 (emphasis in original).

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* at 21.

<sup>37</sup> AmerGen Brief in Opposition to New Jersey Department of Environmental Protection Appeal from LBP-06-07 (Apr. 10, 2006), at 9.

introduced for the first time on appeal.<sup>38</sup> Moreover, New Jersey's site-specific claims go to the safe *ongoing* operation of Oyster Creek, but are not matters peculiar to plant aging or to the license extension period. If New Jersey believes it has in hand information requiring license amendments or other protective measures at Oyster Creek, it may petition the NRC for relief under 10 C.F.R. § 2.206 (providing for petitions for enforcement relief).

New Jersey also asks the NRC, as part of its NEPA review, to revisit the vulnerability of Oyster Creek's spent fuel pool to "design basis" accidents. In rejecting this aspect of New Jersey's contention as beyond the scope of this proceeding, the Board pointed to existing regulations that define design basis accidents at reactors, as well as spent fuel storage, as so-called "Category 1" (or generically resolved) issues.<sup>39</sup> Our GEIS and our regulations characterize the impacts as "small."<sup>40</sup> So no site-specific NEPA review of design basis accidents is required.<sup>41</sup> If New Jersey believes there is reason to depart from the license renewal GEIS and related regulations, its remedy is a petition for rulemaking to modify our rules or a petition for a waiver of our rules based on "special circumstances," not an adjudicatory contention.<sup>42</sup>

We also agree with the Board's analysis of New Jersey's argument on the adequacy of interim compensatory measures to counter design basis threats. As the Board pointed out, the "design basis threat" — the nature of a terrorist attack that NRC reactor licensees must be prepared to defend against — is the subject of an ongoing agency rulemaking.<sup>43</sup> In New Jersey's view, this fact should not have barred the admission of New Jersey's proposed contention, because the uncertain conclusion of the rulemaking, both in terms of content and timing, makes the rulemaking an inadequate vehicle for addressing "the imminent risk of irreparable harm posed to Oyster Creek by the threat of terrorist attack by aircraft."<sup>44</sup> But agencies have discretion to proceed case-by-case or by rulemaking. And here, the Commission has determined that a rulemaking is the appropriate vehicle for

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<sup>38</sup> See *USEC Inc. (American Centrifuge Plant)*, CLI-06-10, 63 NRC 451, 458 (2006). It is unfair to other litigants and to our licensing boards to consider issues and allegations raised for the first time on appeal.

<sup>39</sup> LBP-06-7, 63 NRC at 201-02.

<sup>40</sup> Part 51, Subpart A, Appendix B.

<sup>41</sup> See LBP-06-7, 63 NRC at 201-02.

<sup>42</sup> See 10 C.F.R. §§ 2.335, 2.802. See generally *Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4)*, CLI-01-17, 54 NRC 3, 12 (2001).

<sup>43</sup> See LBP-06-7, 63 NRC at 203-04, citing Proposed Rule: "Design Basis Threat," 70 Fed. Reg. 67,380 (Nov. 7, 2005). In addition, the Board correctly noted that "[w]here, as here, the Commission has initiated rulemaking proceedings that apply to the facility in question and that directly implicate a proposed contention, a Board ordinarily should refrain from admitting that contention." LBP-06-7, 63 NRC at 203 (citation omitted).

<sup>44</sup> New Jersey Appeal at 22.

addressing the current terrorism risk — a risk faced by nuclear facilities in general (and for that matter by other industrial facilities), rather than a risk peculiarly related to operating a nuclear facility beyond its initial license.

As we have previously held,

[p]articularly in the case of a license renewal application, where reactor operation will continue for many years regardless of the Commission's ultimate decision, it is sensible not to devote resources to the likely impact of terrorism during the license renewal period, but instead to concentrate on how to prevent a terrorist attack in the near term at the already licensed facilities.<sup>45</sup>

### III. CONCLUSION

For the foregoing reasons and for the reasons given by the Board, we *affirm* the Board's decision in LBP-06-7 with respect to New Jersey's appeal of the rejection of its first contention (its NEPA-terrorism contention). We *dismiss* as moot the appeals from LBP-06-7 filed by AmerGen and the NRC Staff.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 26th day of February 2007.

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<sup>45</sup> *McGuire/Catawba*, CLI-02-26, 56 NRC at 365.

### **Commissioner Gregory B. Jaczko, Respectfully Dissenting**

As I indicated in response to the Commission's last Order in this proceeding postponing the decision on the NEPA terrorism issue, I respectfully disagreed with my colleagues then on not quickly resolving the issue, and I continue to respectfully disagree with my colleagues now on the majority's decision to ignore the Ninth Circuit's ruling outside of the Ninth Circuit's geographical boundary.

Following the horrific events of September 11, the Commission worked admirably and diligently to deal with a variety of difficult questions raised regarding issues of terrorism and nuclear energy. The Commission reached a decision regarding the issues of terrorism and NEPA in that context. Since then, the agency successfully walked the difficult line between engaging in public discussion and protecting vital security information in the context of the recent proposed rule on the design basis threat (DBT). Thus, I have confidence in our ability to do the same in the NEPA context without jeopardizing our nation's security.

The Commission, in originally addressing NEPA and terrorism, was faced with a difficult legal issue. But now, the Commission is faced with a policy issue — whether or not to implement the Ninth Circuit's mandate nationwide. I believe doing so is the right policy decision today. The majority's decision not to do so is an unnecessary and risky decision that, unfortunately, will not provide regulatory stability or national consistency.

Moreover, several assumptions must be made in order to support the majority's position — namely that another Circuit will answer this question differently than the Ninth Circuit and then that the Supreme Court will take review of the issue. None of this, however, forecloses the possibility that, in the end, even if all these steps occur as the majority hopes, the Supreme Court will not eventually agree, at least to some extent, with the Ninth Circuit's ruling. Ultimately, the majority position paints a portrait of a long and arduous path filled with uncertainty and frustration. I am concerned about the implications of such a potentially time-consuming and circuitous path, especially when the Commission could, instead, resolve the issue by directing the use of a well-established and traveled road.

While the majority contends that following the Ninth Circuit's mandate nationwide is unnecessary and superfluous, I believe the opposite to be true. Regardless of what eventually is determined to be the "right" legal answer, the practical reality is that the agency must and will find a way to consider the impacts of terrorism in a NEPA analysis, at least regarding applications within the jurisdiction of the Ninth Circuit. Thus, it appears to me to be unnecessary and superfluous to place all non-Ninth Circuit applicants at risk of years of regulatory instability in the hope that a different legal answer is ultimately reached. In the end, the "important questions" surrounding this decision are not important because they are legal, but are important because they have broad policy implications. Thus, I

believe the right policy answer is to have a consistent, nationwide approach to a NEPA terrorism analysis.

Furthermore, I also have confidence that this agency is capable of performing a NEPA terrorism review as to any potential application. As the majority notes, in the NRC's Generic Environmental Impact Statement (GEIS) for license renewal, the Staff performed a discretionary analysis of terrorist acts in connection with license renewal, concluding that the core damage and radiological release from such acts were not expected to be worse than the damage and release to be expected from internally initiated events. Because the Staff has already reviewed this issue to some extent, applying the Ninth Circuit's mandate nationwide should not be particularly challenging — and may, in fact, be satisfied by the GEIS, at least regarding license renewal.

For all of these reasons, I believe it is in the best interest of the agency and its stakeholders to move forward with a discussion of the best way to address this issue rather than continuing to focus on whether to address this issue. In the long term, one approach for resolution of this issue might be for the Commission to direct preparation of a generic environmental impact statement on the effect of terrorism on nuclear facilities and their surrounding communities. As I mentioned, the agency has successfully engaged the public, while protecting security information, in the context of the DBT rulemaking. Thus, the agency now has the benefit of some experience in this realm. But if this is determined to be the best long-term approach, it will only come after much public discussion and dialogue. I am concerned that belaboring the discussion of whether or not to do this analysis will only lengthen the amount of time before we reach consensus on how to do the analysis. Given this, I believe that the Commission and our stakeholders would be best served by beginning the discussion now.

Until a long-term solution is reached, I believe the best approach in this case and others is to direct the Staff to include a terrorism analysis in its NEPA documents (EIS or EA) in each case, preparing a supplement if necessary. The NEPA analysis should discuss, in general terms, what, if any, environmental impacts result from a particular licensing action by terrorism-caused radiation releases, whether better alternatives exist, and whether effective mitigating measures are planned. While any revised NEPA documents would then be open to late-filed contentions, this is not a basis not to proceed with the Ninth Circuit's mandate. Instead, in assessing the appropriate path forward, the Commission should revisit the procedures currently in place regarding access to safeguards or classified information and create any necessary modifications to them in order to ensure that there is no question that vital security information will be protected.

While this is certainly not the only path forward that would comply with the Ninth Circuit's mandate, I believe it is a consistent and familiar approach that would provide regulatory stability and NEPA compliance. This approach does not ensure an end to litigation in this area. But it does move us past the legal



debate, and the accompanying years of uncertainty, and into the policy debate of where to go from here.

### **Concurring Opinion of Commissioner Merrifield**

I fully agree with both the reasoning and the outcome of the majority opinion. I write separately to emphasize my strong disagreement with the dissent.

The dissent ignores the compelling reasons not to follow the Ninth Circuit decision in *San Luis Obispo Mothers for Peace* outside of the Ninth Circuit. Our reason for not applying the holding of *San Luis Obispo Mothers for Peace* nationwide is, as the majority opinion states, that the Ninth Circuit decision is wrong and conflicts with Supreme Court precedent, the actual law of the land. The National Environmental Policy Act (NEPA) only requires federal agencies to analyze the reasonably foreseeable environmental effects of proposed federal actions. Thus, in preparing agency NEPA documents we examine the environmental impacts of the proposed action and alternatives, as appropriate. Examining the alleged effects of terrorism in a NEPA document sets the process into a potentially limitless quest to predict how the irrational behavior of terrorism may impact a nuclear facility and then to connect this prediction to the environment surrounding the facility. Unlike traditional matters examined in NEPA documents, the issue of terrorism has no connection to the environment or to the proposed federal action. The proximate cause of any possible environmental effects of a hypothetical terrorist attack would be the terrorist attack, not the NRC licensing action. It is sensible to draw a distinction between the likely impacts of an NRC-licensed facility and the impacts of a terrorist attack on the facility. Absent such a line, the NEPA process could become truly bottomless, subject only to the ingenuity of those claiming that the agency must evaluate this or that potential adverse effect, no matter how indirect its connection to agency action.

The dissent asserts that because we were successfully challenged in the Ninth Circuit, we should apply this erroneous decision nationwide in order to avoid “regulatory uncertainty.” The logical outgrowth of this position is that any time a party challenges an NRC licensing decision as legally erroneous, we should agree with the party and impose additional requirements and perform additional environmental reviews, not just in the challenged action, but nationwide in the name of regulatory certainty. I’m not sure why, if we were to adopt this position, we should stop at challenges lodged in a court. Perhaps we should revamp our licensing processes nationwide every time we receive a public comment that has generic applicability suggesting that a particular review was insufficient. This would quickly lead not to regulatory certainty, but to regulatory strangulation with an ever increasing regulatory burden not based on ensuring adequate protection of the public health and safety, but rather, based on political expediency.

In my view, the better approach is the approach we have taken in this case.

When we were first confronted with the question of whether we should include a terrorism review under NEPA we carefully considered the issue, received input from many stakeholders, and we ultimately determined that such a review was unnecessary. Upon receipt of the Ninth Circuit decision disagreeing with that determination, we carefully considered the decision and decided that our previous determination was still correct. In my mind, this is how we provide regulatory certainty, we do not disturb previous determinations without adequate justification.

The dissent's implication that this issue can be easily resolved by preparing a generic environmental impact statement is simply wrong. There will be nothing easy about resolving this issue on a generic basis. While we may eventually determine that some limited-scope rulemaking is the best course to resolve these issues, one cannot ignore the obvious practical difficulties with this approach. We were able to resolve certain issues related to license renewal generically since, among other reasons, the location of the operating nuclear power plants was known, and the proposed federal action was the same, renewal of an operating license. In order to attempt a generic analysis of all potential impacts of a hypothetical terrorist attack at a hypothetical facility we would presumably have to postulate a location and type of facility that would result in the most significant consequences. Assuming it could be done at all, I think it would tend to lead to an extremely misleading impression of environmental effects. For example, no one is likely to site a Category 1 facility in lower Manhattan. Rather than informing our decisionmaking about actual environmental consequences of an actual licensing decision, we would be constantly distinguishing the generic analysis to demonstrate why the alleged greater consequences do not apply to any particular facility.

We must comply with this decision in the Ninth Circuit. I believe this decision was wrongly decided, and I do not think other courts reviewing this issue will reach the same result.<sup>46</sup> Unless and until we are forced to comply elsewhere, I am not willing to require this type of review in all currently pending and future licensing decisions nationwide.

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<sup>46</sup> This issue is currently being considered by the Court of Appeals of the D.C. Circuit as part of the *Private Fuel Storage* appeal.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-255-LR**

**NUCLEAR MANAGEMENT  
COMPANY, LLC  
(Palisades Nuclear Plant)**

**February 26, 2007**

**NATIONAL ENVIRONMENTAL POLICY ACT: PROXIMATE  
CAUSE**

The National Environmental Policy Act (NEPA) does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities. *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007). As a general matter, NEPA “imposes no legal duty on the NRC to consider intentional malevolent acts . . . in conjunction with commercial power reactor license renewal applications.” *Id.* at 129. The claimed impact is too attenuated to find the proposed federal action to be the “proximate cause” of that impact.

**LICENSE RENEWAL PROCEEDINGS: SCOPE**

There is no basis for admitting this terrorism contention in this, or any other, license renewal proceeding. “Terrorism contentions are, by their very nature, directly related to security and are therefore, under our [license renewal] rules, unrelated to the ‘detrimental effects of aging.’ Consequently, they are beyond the scope of, not ‘material’ to, and inadmissible in, a license renewal proceeding.”

*AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC at 129.

## CONTENTIONS, LATE-FILED

Any new contention on the subject of terrorism in this proceeding would be inexcusably late. *See System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-07-10, 65 NRC 144, 146 (2007). Would-be intervenors must file contentions at the outset of the proceeding, on the basis of the applicant's environmental report. 10 C.F.R. § 2.309(f)(2). An appeals court ruling does not constitute "new information" on which a party can base a new contention. *Grand Gulf*, CLI-07-10, 65 NRC at 146.

## MEMORANDUM AND ORDER

This Order responds to a June 22, 2006 "Notice" filed by a group of environmental and public interest organizations<sup>1</sup> requesting that the NRC redraft the supplemental environmental impact statement for the Palisades Nuclear Plant license renewal, and also requesting an extension of time to submit late-filed proposed contentions on the environmental impacts of terrorist attacks on the plant during the license renewal period. In an order affirming the Atomic Safety and Licensing Board's ruling on contentions in this proceeding, we stated that we would address that request at a later time.<sup>2</sup>

The groups' request is denied. As explained in today's ruling in *Oyster Creek*,<sup>3</sup>

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<sup>1</sup> Don't Waste Michigan; West Michigan Environmental Action Council; the Citizens Action Coalition of Indiana; Canadian Coalition for Nuclear Responsibility/Regroupement pour la Surveillance du Nucléaire; Citizens for Alternatives to Chemical Contamination; Citizens Resistance at Fermi Two; Citizens for Renewable Energy; Huron Environmental Activist League; Clean Water Action; Home for Peace and Justice; Great Lakes United; Nuclear Information and Resource Service ("NIRS"); IHM Justice, Peace and Sustainability Office; Indigenous Environmental Network; International Institute of Concern for Public Health; Lone Tree Council; Kalamazoo River Protection Association; Michigan Citizens for Water Conservation; Michigan Land Trustees; Michigan Environmental Council; Michigan Interfaith Climate and Energy Campaign/Voices for Earth Justice; National Environmental Trust; Nuclear Energy Information Service; Nuclear-Free Great Lakes Campaign; Nuclear Policy Research Institute; Nukewatch; Radiological Evaluation & Action Project, Great Lakes; Sierra Club, Mackinac (Michigan) Chapter; and Van Buren County Greens. This list of organizations includes some who petitioned for intervention in the licensing proceeding and others who commented on the environmental impact statement process for the proposed license renewal.

<sup>2</sup> CLI-06-17, 63 NRC 727, 734 n.31 (2006).

<sup>3</sup> *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007).

the potential impacts of terrorism fall outside the scope of a license renewal proceeding and are not appropriate subjects for analysis under the National Environmental Policy Act.<sup>4</sup>

## I. BACKGROUND

In March 2005, Nuclear Management Company, LLC, applied to renew its license to operate the Palisades Nuclear Plant for a 20-year period starting in 2011.<sup>5</sup> A number of environmental organizations, including several who signed on to the request we consider today, attempted to intervene in the license renewal proceeding. Although the Licensing Board found that the groups had shown standing, it ruled that none had offered an admissible contention.<sup>6</sup> The Commission affirmed the Board's ruling.<sup>7</sup>

In a separate matter involving a spent fuel storage facility on the Diablo Canyon reactor site in California, the U.S. Court of Appeals for the Ninth Circuit issued a decision ruling (in part) against the NRC.<sup>8</sup> The Ninth Circuit found unreasonable the NRC's refusal to analyze the environmental effects of "terrorism" in its licensing proceedings. Weeks later, a number of organizations, most of which had never sought entry into this proceeding before, filed their "Notice" and requested that we take steps that they see as necessary to comply with the Ninth Circuit's ruling.

## II. ANALYSIS

As stated in the *Oyster Creek*<sup>9</sup> decision issued today, we continue to believe that the National Environmental Policy Act does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities. The *Oyster Creek* decision explains in depth our reasoning for refusing to follow that decision outside the Ninth Circuit. Those reasons pertain here as well. As we stated in *Oyster Creek*, there is no basis for admitting this terrorism contention in this, or any other, license renewal proceeding. "Terrorism contentions are, by their very nature, directly related to security and are therefore, under our [license renewal] rules, unrelated to the 'detrimental effects of aging.'

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<sup>4</sup> 42 U.S.C. §§ 4321 *et seq.*

<sup>5</sup> The renewed license was issued on January 17, 2007.

<sup>6</sup> LBP-06-10, 63 NRC 314 (2006).

<sup>7</sup> CLI-06-17, 63 NRC at 734.

<sup>8</sup> *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016 (9th Cir. 2006), *cert. denied*, No. 06-466 (Jan. 16, 2007).

<sup>9</sup> See *Oyster Creek*, CLI-07-8, 65 NRC at 129-30.

Consequently, they are beyond the scope of, not ‘material’ to, and inadmissible in, a license renewal proceeding.”<sup>10</sup> Moreover, as a general matter, NEPA “imposes no legal duty on the NRC to consider intentional malevolent acts . . . in conjunction with commercial power reactor license renewal applications.”<sup>11</sup> The claimed impact is too attenuated to find the proposed federal action to be the “proximate cause” of that impact.

Furthermore, as explained today in our decision in *Grand Gulf*,<sup>12</sup> any new contention on the subject of terrorism in this proceeding would be inexcusably late. Would-be intervenors must file contentions at the outset of the proceeding, on the basis of the applicant’s environmental report.<sup>13</sup> An appeals court ruling does not constitute “new information” on which a party can file a new contention.<sup>14</sup> Whereas some of the organizations that submitted the June 22, 2006 request (e.g., NIRS) filed a hearing request that included a terrorism contention,<sup>15</sup> that contention was later withdrawn.<sup>16</sup> We view it as waived.

### III. CONCLUSION

For the foregoing reasons, and the reasons given in the *Oyster Creek* decision issued today, we reject the request that the EIS be redrafted to consider terrorism and for an extension of the time for filing contentions.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 26th day of February 2007.

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<sup>10</sup> See *id.* at 129, quoting *McGuire/Catawba*.

<sup>11</sup> *Id.* at 129.

<sup>12</sup> *System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-07-10, 65 NRC 144, 146 (2007).

<sup>13</sup> 10 C.F.R. § 2.309(f)(2).

<sup>14</sup> *Grand Gulf*, CLI-07-10, 65 NRC at 146. See also 10 C.F.R. § 2.309(f)(2)(i).

<sup>15</sup> See Request for Hearing and Petition To Intervene (Aug. 8, 2005) at 9.

<sup>16</sup> See Petitioners’ Combined Reply to NRC Staff and Nuclear Management Company Answers (Sept. 16, 2005) at 55.

**Commissioner Gregory B. Jaczko, Respectfully Dissenting**

As I explain in more detail in my dissent in *Oyster Creek*, I respectfully disagree with my colleagues on the majority's decision to ignore the Ninth Circuit's ruling outside of the Ninth Circuit's geographical boundary. The majority's decision to maintain its posture of no NEPA terrorism reviews outside of the Ninth Circuit is, I believe, an unnecessary and risky decision that, unfortunately, will not provide regulatory stability or national consistency. And, while the majority contends that following the Ninth Circuit's mandate nationwide is unnecessary and superfluous, I believe the opposite to be true. Regardless of what eventually is determined to be the "right" legal answer, the practical reality is that the agency must and will find a way to consider the impacts of terrorism in a NEPA analysis, at least regarding applications within the jurisdiction of the Ninth Circuit. Thus, I believe the right policy answer is to have a consistent, nationwide approach to a NEPA terrorism analysis.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 52-009-SP**

**SYSTEM ENERGY RESOURCES, INC.**  
**(Early Site Permit for Grand Gulf**  
**ESP Site)**

**February 26, 2007**

**CONTENTIONS, LATE-FILED**

Petitioners waived their right to pursue the NEPA-terrorism issue in this adjudication by not filing the contention on the basis of the environmental report. A late-filed contention can be admitted only when the information on which the amended or new contention is based was previously unavailable. 10 C.F.R. § 2.309(f)(2)(i). A change in the law controlling — in a different Circuit — does not constitute previously unavailable information to excuse late filing.

**NATIONAL ENVIRONMENTAL POLICY ACT: PROXIMATE CAUSE**

The National Environmental Policy Act (NEPA) does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities. “The ‘environmental’ effect caused by third-party miscreants ‘is . . . simply too far removed from the natural or expected consequences of agency action to require a study under NEPA.’” Thus, a terrorist act is not “proximately caused” by the licensing of a regulated nuclear facility. *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC



124, 129 (2007), quoting *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002).

## MEMORANDUM AND ORDER

In a recent order, the Commission took upon itself the task of deciding whether to admit for hearing a contention claiming the Environmental Impact Statement for the proposed Grand Gulf ESP must analyze the environmental impacts of a terrorist attack on the proposed facility.<sup>1</sup> Today, we answer that question in the negative.

As an initial matter, the proposed contention was impermissibly late. But even had it been submitted at the outset, it would be inadmissible, because, as explained in today's ruling in *Oyster Creek*,<sup>2</sup> the National Environmental Policy Act<sup>3</sup> does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks at NRC-licensed facilities.

### I. INTRODUCTION

The various public interest groups who collectively sponsored the proposed contention — Nuclear Information and Resource Service, Public Citizen, and Sierra Club — rely substantively and procedurally on the recent decision by the U.S. Court of Appeals for the Ninth Circuit in *San Luis Obispo Mothers for Peace v. NRC*.<sup>4</sup> The Ninth Circuit held that the NRC could not, under NEPA, categorically refuse to consider the consequences of a terrorist attack against a spent fuel storage facility on the Diablo Canyon reactor site in California. But we find the Ninth Circuit's decision does not compel the NRC to admit this issue for adjudication in the *Grand Gulf* proceeding.

### II. ANALYSIS

The Petitioners argue that the Ninth Circuit's mandate in *Mothers for Peace*

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<sup>1</sup> CLI-06-28, 64 NRC 404 (2006). On January 26, 2007, the Atomic Safety and Licensing Board issued its Initial Decision (Authorizing the Issuance of the Grand Gulf Early Site Permit), LBP-07-1, 65 NRC 27 (2007).

<sup>2</sup> *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007).

<sup>3</sup> 42 U.S.C. §§ 4321 *et seq.*

<sup>4</sup> 449 F.3d 1016 (2006), *cert. denied*, No. 06-466 (Jan. 16, 2007).

constituted new information triggering the opportunity to offer a new proposed contention and excused its lateness. Ordinarily, environmental contentions must be filed on the basis of the applicant's environmental report submitted as part of its initial application.<sup>5</sup> The Petitioners argue that, because of our well-settled view that the environmental impact of terrorism on a facility is outside the scope of NEPA,<sup>6</sup> filing a contention on this issue at that time would have been futile.

We find that the petitioners waived their right to pursue the NEPA-terrorism issue in our adjudication by not filing the contention on the basis of the environmental report. A contention filed late is excused only when the "information upon which the amended or new contention is based was not previously available."<sup>7</sup> There has been no change in the facts surrounding the application — SERI has not changed its proposed project, nor do the petitioners point to any new information about environmental impacts of siting a new reactor unit at Grand Gulf. The Petitioners do not even suggest there is new information available about the threat of terrorism (or this agency's ability to assess that threat). The only change is the law controlling within the Ninth Circuit, and, as we will discuss subsequently, the Ninth Circuit decision does not control in this case concerning the Grand Gulf site.

Although it is no doubt true that the Licensing Board would have rejected the contention on the basis of our settled law had the Petitioners submitted it earlier, the submission would not have been entirely "futile," as it would have preserved the right to ask the Commission to reconsider it or to appeal to a higher court later. As the NRC Staff pointed out in its answer to the Petitioners' request, had the Petitioners in *Mothers for Peace* delayed filing their NEPA-terrorism contention, there would be no Ninth Circuit ruling on the issue.<sup>8</sup>

As stated in the *Oyster Creek* decision issued today, we continue to believe that the National Environmental Policy Act does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities. The *Oyster Creek* decision explains in depth our reasoning for refusing to follow the *Mothers for Peace* decision outside the Ninth Circuit. Those reasons pertain here as well. As we stated in *Oyster Creek*, there is no basis for admitting this terrorism contention in this early site permit proceeding. "The 'environmental' effect caused by third-party miscreants 'is . . . simply too far removed from the natural or expected consequences of agency action to require a

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<sup>5</sup> 10 C.F.R. § 2.309(f)(2) ("On issues arising under the National Environmental Policy Act, the petitioner *shall file* contentions based on the applicant's environmental report" (emphasis added)).

<sup>6</sup> See, e.g., *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340 (2002).

<sup>7</sup> 10 C.F.R. § 2.309(f)(2)(i).

<sup>8</sup> See NRC Staff Answer to Petitioners' Request for Admission of Late-Filed Environmental Contention (Nov. 6, 2006) at 7-8 & n.7.

study under NEPA.’<sup>9</sup> The claimed impact is too attenuated to find the proposed federal action to be the ‘proximate cause’ of that impact.<sup>10</sup>

### III. CONCLUSION

Thus, for the foregoing reasons, and the reasons given in the *Oyster Creek* decision issued today, the proposed contention is rejected.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 26th day of February 2007.

#### **Commissioner Gregory B. Jaczko, Respectfully Dissenting**

As I explain in more detail in my dissent in *Oyster Creek*, I respectfully disagree with my colleagues on the majority’s decision to ignore the Ninth Circuit’s ruling outside of the Ninth Circuit’s geographical boundary. The majority’s decision to maintain its posture of no NEPA terrorism reviews outside of the Ninth Circuit is, I believe, an unnecessary and risky decision that, unfortunately, will not provide regulatory stability or national consistency. And, while the majority contends that following the Ninth Circuit’s mandate nationwide is unnecessary and superfluous, I believe the opposite to be true. Regardless of what eventually is determined to be the “right” legal answer, the practical reality is that the agency must and will find a way to consider the impacts of terrorism in a NEPA analysis, at least regarding applications within the jurisdiction of the Ninth Circuit. Thus, I believe the right policy answer is to have a consistent, nationwide approach to a NEPA terrorism analysis.

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<sup>9</sup> *Oyster Creek*, CLI-07-8, 65 NRC at 129, quoting *Private Fuel Storage*, CLI-02-25, 56 NRC at 349.

<sup>10</sup> *Id.*

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 72-26-ISFSI**

**PACIFIC GAS AND ELECTRIC  
COMPANY  
(Diablo Canyon Power Plant  
Independent Spent Fuel Storage  
Installation)**

**February 26, 2007**

**MEMORANDUM AND ORDER**

This is a proceeding to license an independent spent fuel storage installation (ISFSI) at the site of the Diablo Canyon nuclear power reactor in California. In *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1028 (9th Cir. 2006), the United States Court of Appeals for the Ninth Circuit held that the NRC's "categorical refusal to consider the environmental effects of a terrorist attack" in this licensing proceeding was unreasonable under the National Environmental Policy Act (NEPA).<sup>1</sup> The Ninth Circuit remanded the "NEPA-terrorism" question to the Commission for "further proceedings consistent with this opinion."<sup>2</sup> Pacific

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<sup>1</sup>The Court reasoned, *inter alia*, that the NRC's analysis had resulted in the failure to address the "Petitioners' factual contentions that licensing the Storage Installation would lead to or increase the risk of a terrorist attack because (1) the presence of the Storage Installation would increase the probability of a terrorist attack on the Diablo Canyon nuclear facility, and (2) the Storage Installation itself would be a primary target for a terrorist attack." 449 F.3d at 1030.

<sup>2</sup>449 F.3d at 1035.

Gas & Electric Co. (PG&E) petitioned the Supreme Court for a writ of certiorari. The Supreme Court recently denied PG&E's petition.<sup>3</sup>

Today we set a schedule<sup>4</sup> for further proceedings in this adjudication in response to the Ninth Circuit's remand.<sup>5</sup> The Ninth Circuit explicitly left to our discretion the precise manner in which we undertake a NEPA-terrorism review on remand, with respect to both our consideration of the merits and the procedures we choose to apply:

Our identification of the inadequacies in the agency's NEPA analysis should not be construed as constraining the NRC's consideration of the merits on remand, or circumscribing the procedures that the NRC must employ in conducting its analysis. There remain open to the agency a wide variety of actions it may take on remand, consistent with its statutory and regulatory requirements.<sup>6</sup>

With this guidance in mind, we set the following procedural schedule:

1. The NRC Staff shall prepare a revised environmental assessment in accordance with the NRC's regulations — addressing the likelihood of a terrorist attack at the Diablo Canyon ISFSI site and the potential consequences of such an attack — to be filed with the Commission and served upon the parties to the Ninth Circuit proceeding *within 90 days* after the date of this decision;<sup>7</sup>
2. Amended or late-filed contentions must be filed *within 30 days* of publication of the NRC Staff's draft NEPA documentation. New late-filed contentions must meet the standards for late-filed contentions in 10 C.F.R.

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<sup>3</sup> *Pacific Gas and Electric Co. v. San Luis Obispo Mothers for Peace*, No. 06-466 (S. Ct. Jan. 16, 2007).

<sup>4</sup> In setting this schedule, we note that PG&E now indicates that it does not intend to use the facility for actual storage of spent fuel until the summer of 2008, rather than November 2007 as previously stated. See Pacific Gas and Electric Company Motion for Prompt Commission Action at 3 (Jan. 24, 2007). See also Response by San Luis Obispo Mothers for Peace, Sierra Club, and Peg Pinard to PG&E Motion for Prompt Commission Action (Feb. 5, 2007). PG&E, in turn, responded to this San Luis Obispo Mothers for Peace response in a filing marked as Pacific Gas and Electric Company's Response to Intervenors' "Request for Clarification" (Feb. 13, 2007).

<sup>5</sup> The schedule we set here applies only to this particular proceeding. The majority of the Commission, with Commissioner Jaczko dissenting, remains convinced that NEPA does not require a terrorism review in connection with NRC licensing decisions. See *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007).

<sup>6</sup> 449 F.3d at 1035.

<sup>7</sup> If the NRC Staff requires additional time, or if the NRC Staff determines that an environmental impact statement is necessary, it may request a schedule modification.

Part 2.<sup>8</sup> Absent further direction, in the interest of expeditious resolution the Commission itself will determine the admissibility of contentions and whether oral argument or other further action is required;

3. Any member of the public who wishes to comment on the draft environmental assessment (outside of the adjudicatory process, pursuant to our normal environmental process) must do so *within 30 days* after it is made available in accordance with the NRC's regulations (or *within 45 days* of the publication of a draft environmental impact statement);<sup>9</sup>
4. To the extent practicable, we expect the NRC Staff to base its revised environmental analysis on information already available in agency records, and consider in particular the Commission's DBT for power plant sites<sup>10</sup> and other information on the ISFSI design, mitigative, and security arrangements bearing on likely consequences, consistent with the requirements of NEPA, the Ninth Circuit's decision, and the regulations for the protection of sensitive and safeguards information. As the Ninth Circuit contemplated, the NRC Staff may rely, where appropriate, on qualitative rather than quantitative considerations;<sup>11</sup>
5. We expect the NRC Staff to rely on as much public information as practicable and to make public as much of its revised environmental analysis as feasible. We recognize, however, that it may prove necessary to withhold some facts underlying the Staff's findings and conclusions as "safe-

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<sup>8</sup> See also the discussion of contentions of omission in *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382-84 (2002). In making their filings, all parties are reminded to appropriately protect all sensitive security information.

<sup>9</sup> See 10 C.F.R. §§ 51.33(c), 51.73.

<sup>10</sup> NRC regulations do not require specifically licensed ISFSIs to defend against the "design-basis threat" of radiological sabotage. In practice, however, when an ISFSI is located at a reactor site (as here), protection of the ISFSI is typically included within the reactor's security plan. Reactor security plans require protection against the design basis threat. See 10 C.F.R. §§ 50.34(c) & (d), 73.55(a). PG&E amended its reactor security plan to cover protection of the ISFSI. See *License Amendment Request 01-09, Revision to the DCP Physical Security Program To Incorporate the Diablo Canyon ISFSI and Associated Request for Exemption to Four 10 CFR 73.55 Requirements*, available as ADAMS Accession No. ML020020039; *Diablo Canyon Independent Spent Fuel Storage Installation Application — Physical Security Program Changes* (TAC No. L23399), available as ADAMS Accession No. ML040350009. See also Pacific Gas and Electric, Diablo Canyon Nuclear Power Plant, Independent Spent Fuel Storage Installation; Order Modifying License (Effective Immediately), 70 Fed. Reg. 25,121 (May 12, 2005), EA-05-088, available as ADAMS Accession No. ML050940493; In the Matter of Pacific Gas and Electric Diablo Canyon Nuclear Power Plant Independent Spent Fuel Storage Installation Order Modifying License (Effective Immediately), 70 Fed. Reg. 25,119 (May 12, 2005), EA-05-089, available as ADAMS Accession No. ML050940492.

<sup>11</sup> 449 F.3d at 1031-32. See also 10 C.F.R. §§ 51.45(c), 51.71(d).

guards'' information, *see* Atomic Energy Act § 147, 42 U.S.C. § 2167; 10 C.F.R. § 71.23, or even as classified national security information;<sup>12</sup>

6. We expect the NRC Staff to review the comments on its draft analysis and finalize its review within 60 days of the close of the public comment period;
7. We believe it is reasonable for the NRC to reach a final decision on the licensing action (for example, reaffirming, revoking, or conditioning the ISFSI license) no later than 12 months from the date of this order, and expect further scheduling orders to be guided by this goal, recognizing the fundamental objectives of assuring fair and meaningful review and decisionmaking.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 26th day of February 2007.

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<sup>12</sup> *See Weinberger v. Catholic Action of Hawaii*, 454 U.S. 139 (1981).

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:**

**Alex S. Karlin**, Chairman  
**Dr. Anthony J. Baratta**  
**Lester S. Rubenstein**

**In the Matter of**

**Docket No. 50-271-OLA**  
**(ASLBP No. 04-832-02-OLA)**

**ENTERGY NUCLEAR VERMONT**  
**YANKEE, LLC, and ENTERGY**  
**NUCLEAR OPERATIONS INC.**  
**(Vermont Yankee Nuclear Power**  
**Station)**

**February 26, 2007**

**LICENSE AMENDMENT: EXTENDED POWER UPRATE;**  
**CASE-BY-CASE EXEMPTION FROM LARGE**  
**TRANSIENT TESTING**

Criterion XI of Appendix B to 10 C.F.R. Part 50 and 10 C.F.R. § 50.54(a)(1) require that each nuclear power plant implement a quality assurance program that includes “all testing required to demonstrate that the structures, systems and components will perform satisfactorily in service” and, pursuant to these requirements, the Staff normally requires that an applicant perform two large transient tests (a main steam isolation valve test and a generator load rejection test) before an extended power uprate can be granted. *See* NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants,” Draft Revision 0 (Dec. 2002), § 14.2. In this case, the Intervenor challenged the Staff’s decision to exempt the Applicant from large transient testing. After hearing all of the evidence, the Board is persuaded, that these large transient tests are not required to demonstrate that the structures, systems,



and components of the Vermont Yankee Nuclear Power Station will perform satisfactorily in uprated service. Thus, the contention is denied.

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**INITIAL DECISION**  
**(Ruling on NEC Contention 3)**

**I. INTRODUCTION**

This initial decision concerns an application submitted by Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc. (collectively, Entergy) to amend the operating license for the Vermont Yankee Nuclear Power Station (VYNPS) in Windham County, Vermont. The proposed amendment, if approved, would authorize a 20% increase in the maximum power level of the plant from 1593 megawatts thermal (MWt) to 1912 MWt (referred to as an extended power uprate or EPU). The proposed amendment would also authorize certain associated changes to the technical specifications for the VYNPS. The New England Coalition (NEC), an environmental organization, challenged the application, asserting that the license amendment should not be granted unless “large transient testing” is required as a license condition.<sup>1</sup> After considering the evidence and arguments, we conclude that Entergy has met its burden of showing that it is not necessary to perform the testing proposed by NEC in order to satisfy the relevant legal requirement — 10 C.F.R. Part 50, Appendix B, Criterion XI — and thus deny NEC’s contention.

**II. BACKGROUND**

**A. Procedural History**

In September 2003, Entergy submitted its EPU application to the Commission to amend the VYNPS operating license.<sup>2</sup> On July 1, 2004, the Commission issued

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<sup>1</sup> “Large transient tests” are tests intended to demonstrate that the plant will operate in accordance with design specifications both during normal steady-state conditions and, to the extent practical, during and following anticipated operational occurrences, such as main steam isolation valve (MSIV) closures and generator load rejections (GLRs). NRC Staff Testimony of Richard B. Ennis, Steven R. Jones, Robert L. Pettis Jr., George Thomas, and Zeynab Abdullahi Concerning NEC Contention 3 (May 17, 2006) at 7 (fol. Tr. at 1383) [Ennis *et al.* Direct Testimony for NRC Staff].

<sup>2</sup> Letter from Jay K. Thayer, Entergy Site Vice President, to U.S. Nuclear Regulatory Commission, Document Control Desk, Vermont Yankee Nuclear Power Station License No. DPR-28 (Docket No. (Continued)

a notice of consideration of issuance of the proposed amendment and opportunity for a hearing. 69 Fed. Reg. 39,976 (July 1, 2004). In response, NEC and the Department of Public Service of the State of Vermont (State) filed timely petitions to intervene, each requesting admission as a party to any proceeding concerning Entergy's application.<sup>3</sup> NEC initially proposed seven contentions, and the State proposed five.

On September 14, 2004, this Board was established to rule on the petitions and to preside over any adjudicatory proceeding in connection with Entergy's license amendment application. 69 Fed. Reg. 56,797 (Sept. 22, 2004). On November 22, 2004, the Board found that both parties had standing and admitted two NEC contentions and two State contentions. LBP-04-28, 60 NRC 548, 553-54, 558-64, 571-73 (2004). As originally admitted, the four contentions read as follows:

State Contention 1: Entergy has claimed credit for containment overpressure in demonstrating the adequacy of ECCS pumps for plant events including a loss of coolant accident in violation of draft General Design Criteria 44 and 52 and therefore Entergy has failed to demonstrate that the proposed uprate will provide adequate protection for public health and safety as required by 10 C.F.R. § 50.57(a)(3).

State Contention 2: Because of the current level of uncertainty of the calculation which the Applicant uses to demonstrate the adequacy of ECCS pumps, the Applicant has not demonstrated that the use of containment overpressure to provide the necessary net positive suction head for ECCS pumps will provide adequate protection for the public health and safety as required by 10 C.F.R. § 50.57(a)(3).

NEC Contention 3: The license amendment should not be approved unless Large Transient Testing is a condition of the Extended Power Uprate.

NEC Contention 4: The license amendment should not be approved because Entergy cannot assure seismic and structural integrity of the cooling towers under uprate conditions, in particular the Alternate Cooling System cell. At present the minimum appropriate structural analyses have apparently not been done.

*Id.* at 580.

Subsequently all of the admitted contentions except for NEC Contention 3 were settled, withdrawn, or otherwise resolved. State Contentions 1 and 2 were settled. On May 2, 2006, the State filed a notice of withdrawal and request for dismissal of the two contentions which indicated that the State and the Applicant had "agreed to a mutually satisfactory resolution of the issues raised by the State

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50-271) Technical Specification Proposed Change No. 263 Extended Power Uprate (Sept. 10, 2003), ADAMS Accession No. ML032580089 [Application].

<sup>3</sup>New England Coalition's Request for Hearing, Demonstration of Standing, Discussion of Scope of Proceeding and Contentions (Aug. 30, 2004) [NEC Petition]; Vermont Department of Public Service Notice of Intention To Participate and Petition To Intervene (Aug. 30, 2004).

in this proceeding.”<sup>4</sup> The State subsequently modified this notice to conform to the requirements of 10 C.F.R. § 2.338(g) and (h) regarding the form and content of settlements.<sup>5</sup> The Board approved the modified settlement agreement and dismissed the State’s two contentions on June 23, 2006.<sup>6</sup> Accordingly, the State was no longer a party to this proceeding.

NEC Contention 4 was resolved in a different manner. NEC Contention 4 was originally a “contention of omission,” i.e., a contention alleging that the application was deficient because it failed to include (omitted) some necessary element.<sup>7</sup> Original contention 4 was dismissed as moot on September 1, 2005, on the ground that Entergy had cured the omission by performing a structural and seismic analysis of the cooling towers under EPU and submitting the report thereon. LBP-05-24, 62 NRC 429, 433 (2005). On September 21, 2005, NEC filed a new Contention 4 challenging the adequacy of Entergy’s structural and seismic analysis.<sup>8</sup> The Board admitted this contention on December 2, 2005. LBP-05-32, 62 NRC 813, 826 (2005). However, on August, 10, 2006, NEC withdrew new Contention 4, eliminating it from this proceeding.<sup>9</sup>

The procedural history of NEC Contention 3, the only remaining contention, is straightforward.<sup>10</sup> On December 2, 2005, Entergy filed a motion for summary disposition of Contention 3 which attempted to refute the technical material

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<sup>4</sup> Notice of Withdrawal and Request for Dismissal of Contentions of the Vermont Department of Public Service (May 2, 2006) at 1.

<sup>5</sup> Amended Notice of Withdrawal and Request for Dismissal of Contentions of the Vermont Department of Public Service (May 9, 2006).

<sup>6</sup> Licensing Board Memorandum and Order (Approving Settlement Agreement, Granting Dismissal of Contentions, and Accepting Withdrawal of Vermont Department of Public Service) (June 23, 2006) (unpublished).

<sup>7</sup> “There is . . . a difference between contentions that merely allege an ‘omission’ of information and those that challenge substantively and specifically how particular information has been discussed in a license application. Where a contention alleges the omission of particular information or an issue from an application, and the information is later supplied by the applicant or considered by the Staff in a draft EIS, the contention is moot.” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382-83 (2002).

<sup>8</sup> New England Coalition’s Request for Leave To File a New Contention (Sept. 21, 2005).

<sup>9</sup> NEC noted that its expert had “conclude[d] Contention 4 is largely satisfied in that [the relevant] omissions and flaws have largely been remedied by extra examinations, analyses, and inspections, particularly evidenced in recent and supplemental Entergy documentation.” New England Coalition’s Notice of Withdrawal of Its Contention Regarding Inadequate Analysis of the Vermont Yankee Alternate Cooling System Performance Under Conditions of Extended Power Uprate (Aug. 10, 2006) at 2.

<sup>10</sup> Additional contentions proposed by NEC in two separate motions filed in 2006 were rejected as untimely. *See* LBP-06-14, 63 NRC 568 (2006); Licensing Board Memorandum and Order (Ruling on Admissibility of Additional NEC Contention and on Request To Supplement Additional Contention) (July 7, 2006) (unpublished).

submitted in support of the contention by NEC's expert.<sup>11</sup> The Board denied the motion, stating that weighing the affidavits of competing experts "is not appropriate at the summary disposition stage" of the proceeding. LBP-06-5, 63 NRC 116, 125 (2006).

On March 10, 2006, during a telephone conference with the parties, a disagreement arose with respect to the scope of Contention 3, i.e., confusion as to specific tests that were meant to be included under the rubric of "large transient testing." Tr. at 819-20. The parties were instructed to submit briefs on this issue, and on April 17, 2006, the Board ruled that "the scope of NEC Contention 3 is limited to two large transient tests: the main steam isolation valve [MSIV] closure test and the turbine generator load rejection [GLR] test."<sup>12</sup> The Board noted that testimony and other evidence to be submitted in connection with NEC Contention 3 should be limited to these two tests. Licensing Board Memorandum and Order (Apr. 17, 2006) at 3.

Meanwhile, during the pendency of this adjudicatory proceeding, Entergy's EPU license amendment application was being reviewed and processed by the NRC Staff and by the Advisory Committee on Reactor Safeguards (ACRS). On November 2, 2005, the Staff published its Draft Safety Evaluation Report (DSER) concerning the requested amendment.<sup>13</sup> On November 15-16 and 29-30, 2005, the ACRS Subcommittee on Power Uprates held meetings to receive input from the Applicant, the Staff, and members of the public on Entergy's EPU amendment application. On December 7, 2005, the full committee of the ACRS held public meetings on the application and on January 4, 2006, the ACRS sent a letter to the Commission recommending approval of Entergy's EPU application.<sup>14</sup> On January 27, 2006, the Staff published its Environmental Assessment and Finding of No Significant Impact concerning the proposed VYNPS EPU license amendment in the *Federal Register*.<sup>15</sup> On March 2, 2006, the Staff issued its Final

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<sup>11</sup> Entergy's Motion for Summary Disposition of New England Coalition Contention 3 (Dec. 2, 2005).

<sup>12</sup> Licensing Board Memorandum and Order (Clarifying the Scope of NEC Contention 3) (Apr. 17, 2006) at 2 (unpublished).

<sup>13</sup> Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. \_\_\_ to Facility Operating License No. DPR-28, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc., Vermont Yankee Nuclear Power Station, Docket No. 50-271 (Nov. 2, 2005), ADAMS Accession No. ML053010167.

<sup>14</sup> See Letter from Graham B. Wallis, Chairman, ACRS, to Nils J. Diaz, Chairman, NRC (Jan. 4, 2006) (Entergy Exh. 22) (recommending approval of Vermont Yankee EPU).

<sup>15</sup> Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc., Vermont Yankee Nuclear Power Station; Final Environmental Assessment and Finding of No Significant Impact Related to the Proposed License Amendment To Increase the Maximum Reactor Power Level, 71 Fed. Reg. 4614 (Jan. 27, 2006).

Safety Evaluation Report (FSER) for the VYNPS EPU license amendment,<sup>16</sup> along with a Finding of No Significant Hazards Consideration.<sup>17</sup>

In section 2.12 of the FSER, the NRC Staff evaluated Entergy's proposed EPU testing program and concluded that it was acceptable and that large transient testing was not required. Staff Exh. 1P, 2 at 260-74. The Staff thus agreed with the recommendation of the ACRS. *See* Entergy Exh. 22 at 1, 4. The Staff therefore issued the requested license amendment, which was effective immediately, concurrently with the FSER. 71 Fed. Reg. at 11,682.

Given the Staff's actions, Entergy was entitled to implement the EPU immediately, with our adjudicatory hearing to be held later. *See* 10 C.F.R. § 50.91(a)(4). NEC objected. On March 3, 2006, the Commission denied NEC's request that the license amendment be stayed pending the completion of evidentiary hearings on the requested amendment.<sup>18</sup> The Commission noted, however, that its denial of NEC's stay request did not constitute an expression of the Commission's views on the validity of the amendment, CLI-06-8, 63 NRC at 238 n.9, and that "[i]f the Board determines after full adjudication that the license amendment should not have been granted, it may be revoked (or conditioned)." *Id.* at 238. Thus, the adjudicatory process continued.

Pursuant to our scheduling orders and 10 C.F.R. § 2.332(d), the issuance of the FSER on March 2, 2006, triggered the filing of evidence and other events leading to the evidentiary hearing.<sup>19</sup> On May 17, 2006, the three remaining parties (NEC, Entergy, and the Staff) filed their initial statements of position<sup>20</sup> and written direct testimony and exhibits regarding the merits of NEC Contention 3.<sup>21</sup> On June 14,

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<sup>16</sup> Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 299 to Facility Operating License No. DPR-28, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc., Vermont Yankee Nuclear Power Station, Docket No. 50-271 (Mar. 2, 2006) [FSER]. The proprietary version of the FSER was introduced at the hearing as Staff Exhibit 1P, and a redacted, nonproprietary version was introduced as Staff Exhibit 2.

<sup>17</sup> Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc., Notice of Issuance of Amendment to Facility Operating License and Final Determination of No Significant Hazards Consideration, 71 Fed. Reg. 11,682 (Mar. 8, 2006).

<sup>18</sup> CLI-06-8, 63 NRC 235 (2006). *See also* 10 C.F.R. § 50.58(b)(6) ("The staff's [no significant hazards consideration] determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination").

<sup>19</sup> Licensing Board Order (Initial Scheduling Order) (Feb. 1, 2005) at 3-4 (unpublished); Licensing Board Order (Revised Scheduling Order) (Apr. 13, 2006) at 3-4 (unpublished).

<sup>20</sup> New England Coalition's Statement of Position (May 17, 2006); Entergy's Initial Statement of Position on New England Coalition Contention 3 (May 17, 2006) [Entergy Statement of Position]; NRC Staff's Initial Statement of Position Concerning NEC Contention 3 (May 17, 2006).

<sup>21</sup> Prefiled Written Testimony of Dr. Joram Hopenfeld Regarding Contention 3 (May 17, 2006) (fol. Tr. at 1510) [Hopenfeld Direct Testimony for NEC]; Testimony of Craig J. Nichols and José L. Casillas on NEC Contention 3 — Large Transient Testing (May 17, 2006) (fol. Tr. at 1175) [Nichols/Casillas Direct Testimony for Entergy]; Ennis *et al.* Direct Testimony for NRC Staff.

2006, all parties filed rebuttal statements of position<sup>22</sup> and NEC and Entergy submitted additional written testimony and exhibits.<sup>23</sup> Meanwhile, on June 5, 2006, the Board ordered the parties to supplement their exhibits by submitting to the Board any documents that were relied upon by the parties' experts in their written testimony, but that were not included as exhibits at the time the testimony was submitted.<sup>24</sup> Entergy and the NRC Staff submitted these supplemental exhibits on June 19, 2006.<sup>25</sup> Pursuant to a notice in the *Federal Register*, 71 Fed. Reg. 19,549 (Apr. 14, 2006), the Board held meetings in Brattleboro, Vermont, on June 26 and 27, 2006, where members of the public made oral limited appearance statements.<sup>26</sup> On September 12, 2006, the Board, accompanied by representatives of the three parties, conducted a site visit of the VYNPS in order to view plant components relevant to NEC Contention 3.<sup>27</sup>

On September 13 and 14, 2006, the Board conducted the evidentiary hearing on NEC Contention 3 at the Windham County Courthouse in Newfane, Vermont. Pursuant to our order of December 16, 2004, the evidentiary hearing was held in accordance with 10 C.F.R. Part 2, Subpart L. LBP-04-31, 60 NRC 686, 706 (2004). This was the first Subpart L evidentiary hearing held since the Commission substantially amended the adjudicatory hearing regulations in 2004.<sup>28</sup> Because some of the exhibits submitted by Entergy and the NRC Staff were claimed to be proprietary and privileged, it was necessary to hold a short (less than 1 hour) closed session of the evidentiary hearing on September 14, 2006. Pursuant to

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<sup>22</sup>New England Coalition's Response to the Statements of Position of Entergy and NRC Staff (June 14, 2006); Entergy's Rebuttal Statement of Position on New England Coalition Contention 3 (June 14, 2006); NRC Staff's Response to the Initial Statements of Position Filed by Other Parties (June 14, 2006).

<sup>23</sup>Declaration of Dr. Joram Hopenfeld in Support of New England Coalition's Response to the Statements of Position of Entergy and NRC Staff (June 14, 2006) (fol. Tr. at 1510) [Hopenfeld Rebuttal Testimony for NEC]; Rebuttal Testimony of Craig J. Nichols and José L. Casillas on NEC Contention 3 — Large Transient Testing (June 14, 2006) (fol. Tr. at 1177) [Nichols/Casillas Rebuttal Testimony for Entergy].

<sup>24</sup>Licensing Board Order (Regarding Submission of Supplemental Documents) (June 5, 2006) (unpublished).

<sup>25</sup>Entergy's Supplement to Direct Testimony on NEC Contentions 3 and 4 (June 19, 2006); NRC Staff's Supplement to Its Initial Testimony Concerning NEC Contentions 3 and 4 (June 19, 2006).

<sup>26</sup>The Board has also received and considered a number of written limited appearance statements.

<sup>27</sup>Licensing Board Order (Scheduling Site Visit and Evidentiary Hearing) (July 28, 2006) at 1 (unpublished); Licensing Board Order (Site Visit and Evidentiary Hearing Administrative Matters) (Aug. 24, 2006) at 1 (unpublished).

<sup>28</sup>See Final Rule: "Changes to Adjudicatory Process," 69 Fed. Reg. 2182 (Jan. 14, 2004).

our March 1, 2005, protective order,<sup>29</sup> only representatives who had signed a nondisclosure agreement were allowed to attend this short proprietary session.<sup>30</sup>

## **B. Witnesses**

During the evidentiary hearing on NEC Contention 3, a total of eight witnesses appeared on behalf of Entergy, the Staff, and NEC. Some of the witnesses were fact witnesses, and all of them also provided some opinion testimony. All of the witnesses were found to be qualified to present their testimony on the matters they addressed. As previously stated, written direct testimony was submitted for all of the parties' witnesses and written rebuttal testimony was submitted by the Entergy and NEC witnesses. All of the witnesses also provided oral testimony in response to questioning by the Licensing Board.

### ***1. Entergy Witnesses***

Entergy presented a panel consisting of two witnesses in support of its license amendment application.<sup>31</sup> They were: (1) Mr. Craig J. Nichols, an electrical engineer, who was Entergy's Project Manager for the VYNPS EPU and who was the manager responsible for implementing the Vermont Yankee EPU; and (2) Mr. José L. Casillas, a mechanical engineer, who is the Plant Performance Consulting Engineer in the Nuclear Analysis group of the Engineering organization of the General Electric (GE) Nuclear Energy Company, LLC, and is responsible for boiling water reactor (BWR) plant performance design and analyses, including evaluations in support of EPU applications. Nichols/Casillas Direct Testimony for Entergy at 1-3.

Entergy witness Craig Nichols received a Bachelor of Science degree in Electrical Engineering from Northeastern University. *Id.* at 2; Resume of Craig Joseph Nichols, Entergy Exh. 1, at 2. Mr. Nichols has over 20 years of professional experience working in various technical and managerial capacities at VYNPS.

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<sup>29</sup> Licensing Board Order (Protective Order Governing Non-Disclosure of Proprietary Information) (Mar. 1, 2005) (unpublished).

<sup>30</sup> The representatives of NEC declined to sign the nondisclosure agreement and therefore were not allowed into the proprietary session. Tr. at 1007. However, a representative of the State (formerly a party) signed the nondisclosure agreement and, given that no party objected, was allowed to attend the September 14, 2006 proprietary session. Letter from Sara Hofmann, Vermont DPS, to the Board (Sept. 6, 2006) (requesting permission to attend at proprietary session); Tr. at 1121-22. A redacted version of the transcript of the proprietary session was later made available to NEC and the public. Licensing Board Order (Transmitting Redacted Version of Transcript from Proprietary Session) (Oct. 12, 2006) (unpublished).

<sup>31</sup> See Nichols/Casillas Direct Testimony for Entergy; Nichols/Casillas Rebuttal Testimony for Entergy.



Nichols/Casillas Direct Testimony for Entergy at 1-2. As Entergy's Project Manager for the Vermont Yankee EPU, Mr. Nichols was responsible for managing all engineering, analysis, modifications, implementation, and fiscal aspects of the EPU. *Id.* In this regard, he was responsible for overseeing the plant modifications needed to implement the upgrade and the performance of the technical evaluations and analyses required to demonstrate Vermont Yankee's ability to operate safely under uprate conditions. He is familiar with Vermont Yankee's operating history, current plant operations, and the anticipated operating conditions after the uprate. *Id.* at 2-3. The Board found Mr. Nichols to be qualified as an expert witness on the subject of BWR operation and the response of BWRs to transients. In addition, Mr. Nichols served as a fact witness with regard to the VYNPS EPU, the justification that Entergy submitted to the NRC Staff to show that large transient testing was not needed, the plant modifications at VYNPS associated with the EPU, and the history of some of the prior transients at VYNPS.

Entergy witness José L. Casillas received a Bachelor of Science degree in Mechanical Engineering from the University of California, Davis. *Id.* at 3; Resume of José L. Casillas, Entergy Exh. 2. Mr. Casillas is the Plant Performance Consulting Engineer in the Nuclear Analysis group of the Engineering organization of General Electric (GE) Nuclear Energy, which is a consultant to Entergy. At GE Nuclear Energy, Mr. Casillas is responsible for BWR plant performance design and analyses, including evaluations in support of EPU applications and the development and application of computer codes used to predict BWR plant performance. Nichols/Casillas Direct Testimony for Entergy at 3. Mr. Casillas has over 32 years of direct technical experience working in all aspects of plant performance at GE Nuclear Energy, including transient analysis. Mr. Casillas is familiar with the analytical codes used to predict BWR plant response to operational transients and with the industry experience regarding the response of BWRs to large transients. *Id.*; Entergy Exh. 2. He presented testimony which addressed, *inter alia*, industry experience regarding the response of BWRs to large transients. The Board found Mr. Casillas to be qualified as an expert witness on the subjects of BWR plant system performance evaluation, BWR transient and loss of coolant accident (LOCA) analysis, and thermal hydraulic design and evaluation of BWR fuel. In addition, the Board found that Mr. Casillas is familiar with industry experience regarding the response of BWRs to large transients.

## **2. NRC Staff Witnesses**

The NRC Staff presented a panel consisting of five witnesses concerning this contention. These were: (1) Mr. Richard B. Ennis; (2) Mr. Steven R. Jones; (3) Mr. Robert L. Pettis, Jr.; (4) Mr. George Thomas; and (5) Ms. Zena Abdullahi. Ennis *et al.* Direct Testimony for NRC Staff.

NRC Staff witness Richard B. Ennis is employed by the NRC as a Senior

Project Manager in the Division of Operating Reactor Licensing in the NRC's Office of Nuclear Reactor Regulation (NRR). Mr. Ennis served as the Senior Project Manager for the Staff's review of the Vermont Yankee EPU. As part of his official responsibilities, he coordinated the Staff's evaluation of the Vermont Yankee EPU, assisted in preparation of the Staff's DSER for the EPU application, and coordinated the Staff's preparation of the FSER. Mr. Ennis received a Bachelor of Science degree in Electrical Engineering from Bucknell University and has over 28 years of engineering experience in the nuclear power industry, including project management, design and licensing basis documentation, nuclear facility design verifications and modifications, software development and validation, and instrument setpoint and loop uncertainty calculations and methodologies. *Id.* at 1-2, 4; Ennis Professional Qualifications (fol. Tr. at 1383) at 1. The Board found Mr. Ennis to be qualified as an expert witness on the subjects of Entergy's EPU license amendment application, NRC regulatory requirements and guidance pertaining to BWR EPU applications, and the bases for Staff approvals of licensee requests for exceptions to large transient testing in EPU applications. We note that some of his testimony was also as a fact witness.

NRC Staff witness Steven R. Jones is employed by the NRC as a Senior Reactor Systems Engineer in the Division of Engineering, NRR, and served as Acting Chief of NRR's Balance of Plant Branch. As such, he is responsible, *inter alia*, for evaluating the functional requirements, design, and performance of auxiliary, support, and mechanical systems other than those directly associated with the nuclear steam supply system (i.e., balance of plant systems — the main steam and turbine, feedwater and condensate, diesel generator support, auxiliary feedwater, spent fuel pool cooling, circulating water, open- and closed-cycle cooling water, and reactor coolant leakage detection systems) for both current and planned nuclear plants. Ennis *et al.* Direct Testimony for NRC Staff at 1-2. As part of his official responsibilities, Mr. Jones supervised the Staff's safety review of balance of plant systems, to evaluate the effects of the proposed EPU on such systems; these include the condensate, feedwater, main steam, main turbine, and turbine bypass systems that are involved in the plant's response to transients, as described in sections 2.5 and 2.12 of the Staff's FSER (Staff Exhs. 1P and 2). *Id.* at 4. Mr. Jones received a Bachelor of Science degree in Marine Engineering from the United States Naval Academy and has over 20 years of experience in nuclear engineering and regulation, including experience as a Senior Resident Inspector. Jones Professional Qualifications (fol. Tr. at 1383) at 1-2. The Board found Mr. Jones to be qualified as an expert witness on the subject of the impacts of EPU operation on balance of plant systems, NRC regulatory requirements and guidance pertaining to BWR EPU applications, and the Staff interpretation as to the need for large transient testing in connection with such applications, as pertinent to balance of plant systems.

NRC Staff witness Robert L. Pettis, Jr., is employed by the NRC as a Senior

Reactor Engineer in the Division of Engineering, NRR. As such, he is responsible for the technical review of several EPU and license renewal amendment requests. As part of his responsibilities, Mr. Pettis was responsible for evaluating the power ascension and testing plan section of the Vermont Yankee EPU application. He coordinated the Staff's review of the overall power uprate testing program of the Vermont Yankee EPU application, including preparation of section 2.12 in the Staff's FSER. Ennis *et al.* Direct Testimony for NRC Staff at 1-3. Mr. Pettis received a Bachelor of Science degree in Civil Engineering and a Master of Science Degree in Civil Engineering from Northeastern University. He has over 30 years' engineering experience in the commercial nuclear power industry, including significant experience in the following areas: engineering management; technical writing; nuclear facilities audits, inspections, and design verifications; structural engineering and design; software quality assurance, verification and validation; EPU reviews; and professional engineer reviews of ASME Class I component supports. Pettis Professional Qualifications (fol. Tr. at 1383) at 1. The Board found Mr. Pettis to be qualified as an expert witness on the subjects of NRC regulatory requirements and guidance pertaining to nuclear power plant operational testing and of the Staff interpretation as to need for large transient testing in connection with BWR EPU applications.

NRC Staff witness George Thomas is employed by the NRC as a Senior Reactor Systems Engineer in the Division of System Safety, NRR. As such, he is responsible for reviewing and evaluating design, process design parameters, and performance of reactor thermal-hydraulic systems for BWR designs, including advanced reactor designs and combined operating licenses associated with the reactor coolant system and normal and emergency core cooling systems under steady-state, transient, and accident conditions. In addition, he is responsible for reviewing the analysis of anticipated operational occurrences, postulated accidents, and actual operating experience from the viewpoint of systems operation and transient dynamics; and he conducts evaluations of the effects of changes to licensed thermal power, license renewal, and other technical specification changes related to BWR reactor systems. Ennis *et al.* Direct Testimony for NRC Staff at 2-3. As part of his responsibilities, Mr. Thomas conducted the reactor systems review of the transient analyses submitted by Entergy for the Vermont Yankee EPU, including preparation of section 2.8.5 in the Staff's FSER. *Id.* at 4. Mr. Thomas received a Bachelor of Science degree in Physics from Kerala University (India), and he has over 37 years of BWR experience including 26 years at the NRC. His experience includes a broad range of functions related to the design, engineering, testing, operations, and evaluation of BWR systems. Thomas Professional Qualifications (fol. Tr. at 1383) at 1-2. The Board found Mr. Thomas to be qualified as an expert witness on the subjects of BWR thermal-hydraulic system performance, the dynamics of BWR transients, and the analysis of transients related to BWR reactor systems.

NRC Staff witness Zena Abdullahi is employed by the NRC as a Senior Reactor Systems Engineer in the BWR Systems Branch of the NRR Division of System Safety. As such, she is responsible for evaluating the impacts of proposed license amendments on reactor response during steady-state, transient, and accident conditions. Her areas of responsibilities include evaluating design basis safety analyses supporting BWR operation (e.g., reactor fuel and core performance, transients, emergency core cooling system (ECCS) LOCAs, and instabilities), the capabilities of reactor safety coolant systems (e.g., ECCS, reactor core isolation cooling (RCIC)) to perform their safety functions, and the adequacy of nuclear monitoring and safety system actuation and trip setpoints during steady-state, transient, and accident conditions. Ennis *et al.* Direct Testimony for NRC Staff at 2-3; Abdullahi Professional Qualifications (fol. Tr. at 1383) at 1. Ms. Abdullahi conducted the Staff's review of the analytical methods used in the Vermont Yankee EPU application to perform the reactor neutronic and thermal-hydraulic analyses, as described in section 2.8.7 of the Staff's FSER. Ennis *et al.* Direct Testimony for NRC Staff at 5. Ms. Abdullahi received a Bachelor of Science degree in Mechanical Engineering from the University of California, Davis, and a Master of Science degree in Mechanical Engineering from the University of Maryland. She has over 13 years' experience at the NRC and in the nuclear power industry, including considerable experience in evaluating nuclear reactor core and fuel performance during steady-state, transient, and accident conditions. Abdullahi Professional Qualifications at 1. The Board found Ms. Abdullahi to be qualified as an expert witness on the subjects of neutronic and thermal-hydraulic analyses.

### 3. *NEC Witness*

NEC presented one witness, Dr. Joram L. Hopenfeld, in support of its contention.<sup>32</sup> Dr. Hopenfeld has had 44 years of professional experience, which has included the publication of fourteen papers in peer-reviewed journals. Dr. Hopenfeld has designed and conducted tests related to thermal hydraulics, materials/coolant compatibility, and reactor safety. During his career Dr. Hopenfeld worked for the NRC, where he was responsible for a test program designed to benchmark thermal hydraulic codes for pressurized water reactor nuclear reactors. Dr. Hopenfeld received a Bachelor of Science degree, a Master of Science degree, and a Ph.D. in Engineering from the University of California, Los Angeles, with emphasis in fluid flow, heat transfer, and electrochemistry. Hopenfeld Direct

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<sup>32</sup>Hopenfeld Direct Testimony for NEC; Hopenfeld Rebuttal Testimony for NEC.

Testimony for NEC at [unnumbered] 1-3. The Board found Dr. Hopenfeld to be qualified as an expert witness on the subject of thermal-hydraulic analyses.<sup>33</sup>

### III. GOVERNING LEGAL STANDARDS

Several regulations apply to the testing of nuclear power plants, and thus govern our consideration of NEC's contention that the EPU should not be granted unless large transient testing is imposed as a license requirement. First, 10 C.F.R. § 50.34(b)(6)(ii) specifies that each applicant for a license to operate a power plant must submit a final safety analysis report (FSAR) that includes the "[m]anagerial and administrative controls to be used to assure safe operation" set forth in the "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Part 50, Appendix B.<sup>34</sup> An application to amend a license and authorize an extended power uprate is subject to the same considerations. 10 C.F.R. § 50.92(a). Second, 10 C.F.R. § 50.54(a)(1) states that "[e]ach nuclear power plant . . . subject to the quality assurance criteria in appendix B of this part shall implement, pursuant to § 50.34(b)(6)(ii) of this part, the quality assurance program described or referenced in the [FSAR]."

The third and most substantive element in NRC's regulatory structure is Appendix B to Part 50, which prescribes the quality assurance program (QAP), including testing, that must be implemented at each nuclear power plant. Specifically, Appendix B states:

Nuclear power plants . . . include structures, systems, and components [SSCs] that prevent or mitigate the consequences of postulated accidents and that could cause undue risk to the health and safety of the public. This appendix establishes quality assurance requirements for the design, construction, and operation of those [SSCs]. The pertinent requirements of this appendix apply to all activities affecting the safety-related functions of those [SSCs] . . . [including] testing.

\* \* \* \*

### XI. TEST CONTROL

*A test program shall be established to assure that all testing required to demon-*

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<sup>33</sup>In its original petition, NEC supported the admission of NEC Contention 3 with a declaration by its consultant, Mr. Arnold Gunderson. NEC Petition, Exh. D, Declaration of Arnold Gunderson in Support of Petitioners' Contentions (Aug. 30, 2004). However, in the evidentiary phase of this proceeding, NEC did not submit written direct or rebuttal testimony from Mr. Gunderson and he was not available for questioning by the Board in the oral hearing on September 13-14, 2006. Therefore, Mr. Gunderson's declaration is not part of the evidence in this proceeding.

<sup>34</sup>Section 50.34(b)(6)(iii) also requires that the FSAR include the applicant's "[p]lans for preoperational testing and initial operations."

*strate that [SSCs] will perform satisfactorily in service is identified and performed* in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. The test program shall include, as appropriate, proof tests prior to installation, preoperational tests, and operational tests during nuclear power plant or fuel reprocessing plant operation, of [SSCs]. Test procedures shall include provisions for assuring that all prerequisites for the given test have been met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions. Test results shall be documented and evaluated to assure that test requirements have been satisfied.

10 C.F.R. Part 50, Appendix B, Criterion XI (emphasis added).

Thus, Criterion XI requires that each nuclear power plant have a QAP with a test program that includes “all testing required to demonstrate” that SSCs will perform satisfactorily in service. We note that this regulation is somewhat vague — Criterion XI *requires* “all testing *required*” to demonstrate that the SSC will perform “satisfactorily.” Exactly what is “required” and “satisfactory” is not specified. Nevertheless, this is the legal standard that the Board must use in resolving NEC Contention 3. More specifically, the legal standard for determining whether the VYNPS EPU amendment should be approved is whether, in the absence of the two large transient tests sought by NEC (the MSIV closure test and the generator load rejection test), Entergy’s EPU test program complies with Criterion XI, i.e., “assures that all testing required to demonstrate that SSC will perform satisfactorily in service is identified and performed.” Entergy, as the Applicant, has the burden of persuasion on this issue. 10 C.F.R. § 2.325; 69 Fed. Reg. 2182, 2213 (Jan. 14, 2004).

#### **IV. FINDINGS OF FACT**

##### **A. Basic Factual Framework and Staff Approach**

The issue before this Board — whether the two large transient tests sought by NEC (the MSIV closure test and the generator load rejection test) should be required as part of the VYNPS EPU — requires an understanding of several basic and uncontested terms. Thus, this section briefly discusses the meaning of such terms as “transient,” “MSIV transient,” and “MSIV transient test.” Likewise, an understanding of the key issue is significantly enhanced by a review of the basic guidance that the Staff uses when it considers the need for large transient testing. While this guidance is not controlling on the Board, it is helpful and relevant in understanding this case. Accordingly, this section IV.A provides some of the uncontested basics and background concerning this proceeding.

## ***1. Definitions and Basic Concepts***

### ***a. “Transient”***

Although it is commonly used in the NRC regulations and the nuclear industry, NRC regulations do not define the term “transient.” The NRC Web page states that a “transient” is “[a] change in reactor coolant system temperature and/or pressure due to a change in power output of the reactor.”<sup>35</sup> This description is useful, but not entirely correct. This Board uses the term “transient” to include a change in *any* reactor or reactor cooling system parameter, not just the temperature and/or pressure, and not just those “due to a change in the power output of the reactor.” Transients can be caused by (1) adding or removing neutron poisons, (2) increasing or decreasing the electrical load on the turbine generator, or (3) accident conditions. *Id.* The nontransient mode of operation is referred to as “steady-state operation,” which is the absence of change in the conditions within the reactor and reactor cooling systems.

Transients can be, and often are, “anticipated operational occurrences” which are “conditions of normal operation.” *See* 10 C.F.R. Part 50, Appendix A, General Design Criteria for Nuclear Power Plants, Definitions and Explanations. Normal operations include startups and shutdowns as well as power changes and steady-state operation. Anticipated operational occurrences are defined as “those conditions of normal operation which are expected to occur one or more times during the life of the nuclear power unit and include, but are not limited to, loss of power to all recirculation pumps, tripping of the turbine generator set, isolation of the main condenser, and loss of all offsite power.”<sup>36</sup> Criterion 10 of Appendix A states that “[t]he reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.” 10 C.F.R. Part 50, Appendix A, Criterion 10.

The two transients that the parties agreed are of concern here are an inadvertent closure of the main steam isolation valves (MSIV closure transient) and a generator load rejection (GLR) transient.<sup>37</sup>

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<sup>35</sup> U.S. NRC Glossary at <http://www.nrc.gov/reading-rm/basic-ref/glossary/transient.html>.

<sup>36</sup> *Id.* *See also* NUREG-0800, “Office of Nuclear Reactor Regulation, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants,” Draft Revision 0 (Dec. 2002), at 14.2.1-16 (Entergy Exh. 4) (also using the term “anticipated transients” for such occurrences).

<sup>37</sup> Licensing Board Order (Clarifying the Scope of NEC Contention 3) (Apr. 17, 2006) at 3 (unpublished).

b. “MSIV Transient”

An MSIV closure transient, or simply “MSIV transient,” is a transient involving the sudden closure of the main steam isolation valves. “Main steam isolation valves,” or MSIVs, are the valves that are intended to isolate the steam system “inside” the reactor containment<sup>38</sup> from the steam system “outside” the reactor containment. In the case of VYNPS, there are eight MSIVs. Nichols/Casillas Direct Testimony for Entergy at 9. These valves serve a safety function in the event of fuel failure by preventing fission products from the fuel inside of the reactor from being released into the steam system outside of the reactor containment. *See* 10 C.F.R. Part 50, Appendix A, Criterion 54.

In an MSIV transient, something triggers at least two of the eight MSIVs to close. When the two valves are about 10% closed, the reactor control system automatically initiates the sudden shutdown of the reactor by rapidly inserting the control rods into the reactor. Tr. at 1181-83. In short, the MSIV closure triggers a sudden reactor shutdown, or “SCRAM.”<sup>39</sup> Because the SCRAM signal is initiated based on the position of the stem of the MSIV (two valves at 10% closed), the SCRAM is referred to as a “position” SCRAM. Tr. at 1180. At the initiation of the position SCRAM, when only two valves are 10% closed, all of the valves are still essentially fully open.<sup>40</sup>

Once the MSIV closure triggers the SCRAM, the remaining MSIVs close fully in about 3 to 5 seconds. This isolates the reactor core, causing the pressure in the reactor to increase and resulting in an increase in moderator density.<sup>41</sup> The pressure increases until the effects of inserting the control rods, which shuts down the reactor, are able to offset any increase in power caused by the increase in reactor pressure. Tr. at 1183; *see also* Nichols/Casillas Direct Testimony for Entergy at 8-9. After SCRAM, operators would open safety relief valves to further control pressure and use the high-pressure emergency core cooling system to control primary system pressure and to remove residual heat from the system.

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<sup>38</sup> The reactor containment is a gas-tight shell or other enclosure around a nuclear reactor intended to confine fission products that otherwise might be released to the atmosphere in the event of an accident. U.S. NRC Glossary at <http://www.nrc.gov/reading-rm/basic-ref/glossary/containment-structure.html>.

<sup>39</sup> Nichols/Casillas Direct Testimony for Entergy at 9. A SCRAM is “[t]he sudden shutting down of a nuclear reactor, usually by rapid insertion of control rods, either automatically or manually by the reactor operator. May also be called a reactor trip. It is actually an acronym for ‘safety control rod axe man,’ the worker assigned to insert the emergency rod on the first reactor (the Chicago Pile) in the U.S.” U.S. NRC Glossary at <http://www.nrc.gov/reading-rm/basic-ref/glossary/scram.html>.

<sup>40</sup> The “10%” closure refers to the position of the stem of the valve at 10%, not to 10% of the sealing surface of the valve. Given the shape of the valves, even when the stem is at the 10% position, the valve remains open at much greater than 90%.

<sup>41</sup> A moderator is a material, such as ordinary water, heavy water, or graphite, that is used in a reactor to slow down high-velocity neutrons, thus increasing the likelihood of fission. U.S. NRC Glossary at <http://www.nrc.gov/reading-rm/basic-ref/glossary/moderator.html>.



Eventually, the reactor core isolation cooling system would be used to provide finer control of pressure until the system pressure was low enough for the residual heat removal system to be used and normal shutdown conditions achieved. Tr. at 1187-88.

Of the two transients considered here, the MSIV transient is the more severe operational transient from the standpoint of increased pressure on the nuclear reactor systems. *See* Nichols/Casillas Direct Testimony for Entergy at 9. During the MSIV transient, and subsequent SCRAM, there is an increase in the reactor vessel pressure on the order of 50 to 100 pounds per square inch gauge (psig).<sup>42</sup> The goal is to avoid a pressure increase that is large enough to reach the design pressure of the system and to avoid causing the American Society of Mechanical Engineers (ASME) code safety valves to open. Tr. at 1191-92. These pressure relief valves open when the system pressure reaches the 1375-psig limit, which is 110% of the reactor vessel design pressure of 1250 psig.<sup>43</sup>

Although MSIV transients are usually unintentional events, they occasionally occur. An MSIV transient is therefore classified as an “anticipated operational occurrence,” and the regulations require that nuclear power stations be designed and built to withstand them. 10 C.F.R. Part 50, Appendix A, Criterion 10. When an MSIV transient occurs, the reactor operator is required to analyze what happened and how the reactor systems responded and performed, and to report to the NRC. 10 C.F.R. § 50.73(a)(2)(iv)(A)-(B) (requiring submission of Licensee Event Reports (LERs) following such occurrences).

c. “MSIV Transient Test”

An “MSIV transient test,” also commonly referred to as an “MSIV closure test,” is an intentional triggering of an MSIV transient to determine how the reactor, reactor control system, and steam system will perform in the event of an MSIV transient. It is intended to demonstrate that the systems behave as expected in the event of an inadvertent MSIV closure transient, to check the MSIVs for proper operation, and to determine how long it takes for the MSIVs to close when the reactor is at full power. Nichols/Casillas Direct Testimony for Entergy at 9. When an MSIV transient test is performed, the operator issues a signal that causes all eight MSIVs to close from full power. *Id.* at 8-9. For safety reasons however, the MSIV transient test is conducted without defeating the plant’s safety systems.<sup>44</sup> Because the MSIV transient test results in a position SCRAM, it serves

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<sup>42</sup> Tr. at 1188-89. Pounds per square inch gauge, or psig, is equal to pounds per square inch absolute minus approximately 15 pounds.

<sup>43</sup> Tr. at 1192. Because the proposed uprate is a constant pressure power uprate, there is no change in the system design pressure or safety valve opening pressures.

<sup>44</sup> *Id.* at 9. *See also* Tr. at 1193-94, 1399-1402.

to confirm that (1) the signals to shut down the reactor are issued, (2) the safety systems respond as intended, and (3) the relief valves operate as expected.<sup>45</sup> The MSIV transient test is a type of large transient test that is typically performed during initial startup testing of every boiling water reactor. *See* section IV.A.2 herein.

*d. “Generator Load Rejection (GLR) Transient”*

A generator load rejection (GLR) transient is a transient that occurs when, for any reason, the electrical output from the nuclear power plant’s generators suddenly has no place to go. Tr. at 1219. This could occur if there is a break in the electrical power lines exiting the generators, or if a transformer immediately downstream of the generator malfunctions. In response, the steam flow control valves on the turbines (the turbines drive the generators) close in approximately 100 to 200 milliseconds, thereby initiating a reactor SCRAM. Tr. at 1256-58. As the turbine control valves close, the path of the steam through the turbine to the condenser begins to close as well, and the turbine bypass valves begin to open. VYNPS has ten such turbine bypass valves arranged in two banks, which, at the power uprate conditions, are capable of handling 86% of the full steam flow. Tr. at 1219-20. Because of the fast closure of the turbine control valves, a pressure wave travels backward, into the reactor, causing a pressurization whose magnitude is related to the difference between the steam that goes into the condenser via the bypass valves and the steam produced by the reactor. Tr. at 1256-58. The reactor thermal power will rise as the increase in pressure causes an increase in density of the steam-water mixture in the reactor core and in the moderator density, and will continue to do so until the control rods are fully inserted. After that occurs, the reactor power and pressure will decrease. Depending on the amount of pressure produced by the reactor power increase, a relief valve may or may not open. If the reactor power starts to decrease fast enough, there will be only a very small pressure rise in the reactor, and the pressure will be controlled by the bypass valves. Tr. at 1256-58. Compared to an MSIV transient, the peak pressure increase in a GLR transient is lower. Tr. at 1259-60.

Like MSIV transients, GLR transients occasionally occur and are classified as “anticipated operational occurrences” that nuclear power stations must be designed and built to withstand. 10 C.F.R. Part 50, Appendix A, Criterion 10. Similarly, GLR transients must be analyzed and reported to the NRC. 10 C.F.R. § 50.73(a)(2)(iv)(A)-(B).

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<sup>45</sup>Nichols/Casillas Direct Testimony for Entergy at 9; Tr. at 1196.

e. “GLR Transient Test”

A GLR transient test is a test of the reactor, reactor control system, steam bypass system, and steam systems of a nuclear power plant that is performed intentionally by closing the turbine control valves so that the test would progress as if it occurred during normal plant operations. Tr. at 1262. As discussed below, for safety reasons, in a GLR transient test no attempt is made to defeat operation of the bypass valves, because such a test would evaluate the outer limits of the system and thus be a design basis or bounding transient. Nichols/Casillas Direct Testimony for Entergy at 10; Tr. at 1222-23, 1262-63.

f. “Design Basis Transient Analysis”

It is important to distinguish between transients, transient tests, design basis transients, and design basis transient analyses. Anticipated transients are events that, though unintended, are expected and may occur from time to time at a nuclear power station. Although transients are inadvertent, examination of them can yield valuable data. In contrast, transient tests are planned events that are conducted without bypassing the necessary and appropriate safety systems of the nuclear reactor. The entire purpose of such tests is to gather valuable data.

Design basis transients are different. Under NRC regulations, each nuclear reactor must be designed to withstand certain challenging conditions or events, such as certain earthquakes and certain large pipe break LOCAs. The collection of specified events on which a reactor design is based constitute part of what is termed the reactor’s “design basis.” An event that would challenge the maximum limits of a reactor’s design basis is termed a “design basis transient.” For obvious safety reasons, NRC does not require or allow licensees to conduct actual design basis tests, i.e., tests that would reach maximum limits of an operating nuclear reactor’s design. Instead, NRC requires licensees to perform computer analyses of what would happen if a design basis transient happened at their reactor. These computer analyses are called “design basis transient analyses.”

In the case of MSIV transients, the actual test of the operating nuclear reactor (i.e., the MSIV transient test) is intentionally less challenging than the MSIV design basis transient computer analysis. The MSIV design basis transient analysis assumes that the SCRAM signal from the valve position indicators *fails* (i.e., the signal to shut down the reactor fails) and the reactor SCRAMs on high neutron flux level. Tr. at 1192-93. For the purposes of vessel pressurization, the MSIV design basis transient analysis is considered more severe (i.e., “bounding”) than what would be allowed in any actual MSIV transient test or is likely to occur during an unintentional MSIV transient. This is because the failure of the position indicator during an MSIV closure would result in a much greater power excursion

and a larger pressure increase than would otherwise occur. Tr. at 1192-93. *See also* Nichols/Casillas Direct Testimony for Entergy at 16, 20-21.

Similarly, in GLR design basis transient analysis, the computer simulation assumes that the bypass valves do *not* open. Such a postulated event is referred to as a “Generator Load Rejection from High Power Without Bypass” (GLRWB). Nichols/Casillas Direct Testimony for Entergy at 9-10. A GLRWB, where the bypass/relief valves do not open, would result in a far more severe transient than would otherwise be experienced during actual plant operations. Tr. at 1222-23. Such a postulated design basis transient provides a more severe challenge to the fuel than one in which the turbine bypass valves are assumed to operate properly. Nichols/Casillas Direct Testimony for Entergy at 10. Like the design basis MSIV transient analysis, a GLRWB would never form the basis for an actual test since it would pose a major threat to the plant. *Id.*

## **2. Staff Guidance Relating to Large Transient Testing**

Although the legal standards governing the Board’s decision are set forth in section III, above, the NRC Staff has issued certain guidance documents relevant to the need for, and value of, large transient testing for nuclear reactors. While these regulatory guides and Staff review plans are worth noting, they do not have the force of law and are not binding on our determination as to whether Entergy’s testing program satisfies the legal standard in 10 C.F.R. Part 50, Appendix B, Criterion XI. *See Curators of the University of Missouri (TRUMP-S Project)*, CLI-95-8, 41 NRC 386, 397 (1995).

The first example of relevant Staff guidance is NRC Regulatory Guide (RG) 1.68, Initial Test Programs for Water-Cooled Nuclear Power Plants.<sup>46</sup> As its name implies, RG 1.68 describes the general scope and depth of initial test programs that the NRC Staff has found acceptable during the review of initial operating license applications. Appendix A of RG 1.68 describes a set of tests that the Staff requires at the initial startup of a nuclear plant to demonstrate that it will operate in accordance with design specifications both during normal steady-state conditions and, to the extent practical, during and following anticipated operational occurrences. The MSIV transient test and the GLR transient test are both included in Appendix A of RG 1.68. Ennis *et al.* Direct Testimony for NRC Staff at 7; Entergy Exh. 4 at 1.68-18.

The second relevant document contains regulatory guidance for EPU. Known as RS-001, “Review Standard for Extended Power Uprates,” this document was developed primarily to increase the standardization and effectiveness of EPU

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<sup>46</sup> NRC Regulatory Guide (RG) 1.68, Initial Test Programs for Water-Cooled Nuclear Power Plants, Revision 2 (Aug. 1978) (Staff Exh. 4).

reviews performed by the NRC Staff.<sup>47</sup> RS-001 provides the Staff's reviewers with references to existing review criteria (i.e., applicable Standard Review Plan (SRP) sections, branch technical positions, information notices and bulletins, generic letters, NUREGs, industry standards, applicable generic topical reports, etc.) and includes a template safety evaluation. Safety evaluation template section 2.12, Power Ascension and Testing Plan, indicates that the acceptance criteria for a proposed EPU test program are based on Criterion XI. Ennis *et al.* Direct Testimony for NRC Staff at 8; *see also* Nichols/Casillas Direct Testimony for Entergy at 8.

As indicated in RS-001, Matrix 12, specific review criteria and NRC Staff guidance for assessing the extent of testing necessary for EPU applications is described in a third document, the Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants.<sup>48</sup> The relevant portion of this document is SRP § 14.2.1, Generic Guidelines for Extended Power Uprate Testing Programs. Subsection III.A, Review Procedures, of SRP § 14.2.1, provides Staff guidance for a comparison of the proposed EPU test program to the initial plant test program. Subsection III.B of the SRP provides guidance for a review of EPU post-modification testing requirements. Attachment 2 to SRP § 14.2.1, entitled "Transient Testing Applicable to Extended Power Uprates," provides a generic listing of transient tests, drawn from RG 1.68, that the Staff indicates are the "typical transient testing acceptance criteria and functions important to safety associated with these anticipated [EPU] events." Entergy Exh. 4 at 14.2.1-7. The two large transient tests that are the subject of the contention before us, the MSIV transient test and the GLR transient test, are included in Attachment 2 and are listed therein as "Dynamic Response of Plant to Automatic Closure of All Main Steam Isolation Valves," *id.* at 14.2.1-18, and "Dynamic Response of Plant for Full Load Rejection," *id.* at 14.2.1-17, respectively. Ennis *et al.* Direct Testimony for NRC Staff at 8-9; *see also* Nichols/Casillas Direct Testimony for Entergy at 8.

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<sup>47</sup> *See* Office of Nuclear Reactor Regulation, Review Standard for Extended Power Uprates, RS-001, Rev. 1 (Dec. 2003) (Staff Exh. 5).

<sup>48</sup> NUREG-0800, "Office of Nuclear Reactor Regulation, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," Draft Revision 0 (Dec. 2002) (Entergy Exh. 4). Entergy's EPU application, submitted in 2003, was prepared by the Applicant and was reviewed and approved by the Staff, in accordance with the regulatory guidance contained in the December 2002 draft of this document. Entergy's conformance with the draft guidance was addressed in the parties' testimony and in this decision. Nonetheless, we note (as did the Staff) that in August 2006, the Staff's draft guidance was superseded by the issuance of a final version of section 14.2.1 (Generic Guidelines for Extended Power Uprate Testing Programs). *See* Ennis *et al.* Direct Testimony for NRC Staff at 8 n.5. We overruled NEC's objection to the Staff's reference to this fact in its testimony; as we observed, the revised guidance was not introduced as evidence and it does not affect our decision. *See* Tr. at 1381-83.

Under SRP § 14.2.1, however, the Staff allows licensees to propose an EPU test program that does not include all of the large transient testing that would otherwise be required by subsections III.A and III.B of SRP § 14.2.1. Subsection III.C of section 14.2.1, Use of Evaluation to Justify Elimination, states:

In certain cases, the licensee may propose an EPU test program that does not include all of the power-ascension testing that would normally be required by the review criteria of Sections III.A and III.B above. The licensee shall provide an adequate justification for each of these normally required power-ascension tests that are not included in the EPU test program.

*Id.* at 14.2.1-7. The SRP specifies that “[i]f a licensee proposes to not perform a power-ascension test that would normally be required . . . the [Staff] reviewer should ensure that the licensee provides an adequate justification” and goes on to list the following seven “factors” that the reviewer should consider:

- previous operating experience;
- introduction of new thermal-hydraulic phenomena or identified system interactions;
- facility conformance to limitations associated with analytical analysis methods;
- plant staff familiarization with facility operation and trial use of operating and emergency operating procedures;
- margin reduction in safety analysis results for anticipated operational occurrences;
- guidance contained in vendor topical reports; and risk implications.

*Id.* at 14.2.1-7 to 10; Ennis *et al.* Direct Testimony for NRC Staff at 9.

In summary, the Staff’s regulatory guidance usually requires that large transient testing, including the MSIV closure transient test and the GLR transient test, be performed as part of an EPU, but also allows an applicant to propose, on a case-by-case basis, an EPU test program that does not include such large transient testing.

NRC recently rejected an industry request for a generic exemption from large transient testing for BWR EPU license applicants. Ennis *et al.* Direct Testimony for Staff at 10, 16. Two topical reports submitted by General Electric Company (GE), the nuclear steam supply system vendor for VYNPS, are of interest here. First, GE submitted General Electric Licensing Topical Report ELTR-1, Generic Guidelines for General Electric Boiling Water Reactor Extended Power Uprate,

to NRC.<sup>49</sup> The NRC Staff approved this report — Topical Report ELTR-1 — and issued it in February 1999. Ennis *et al.* Direct Testimony for Staff at 9. Topical Report ELTR-1 provides generic guidelines for BWR EPUs. GE’s Topical Report ELTR-1 specifies, in section 5.11.9 and Appendix L.2.4, that an MSIV transient test will be performed for any EPU greater than 10% and a GLR transient test will be performed for any EPU greater than 15%. *Id.* at 9-10. Topical Report ELTR-1 was based on the assumption that the maximum reactor operating pressure would be increased under EPU conditions. *Id.* at 10.

Subsequently, GE developed a different approach to uprating reactor power in BWRs that does not increase the maximum reactor operating pressure. This approach is described in GE Licensing Topical Report NEDO-33004-A, Constant Pressure Power Uprate [CPPU].<sup>50</sup> The CPPU approach forms the basis for the Vermont Yankee EPU application. Ennis *et al.* Direct Testimony for NRC Staff at 10; Nichols/Casillas Direct Testimony for Entergy at 5.

In the CPPU topical report, GE proposed that if an EPU used the constant pressure approach, it should be relieved or exempt from performing the large transient tests (e.g., MSIV closure and GLR tests) — which are otherwise required under Topical Report ELTR-1 (where the pressure is assumed to increase). In support of this proposed generic exemption, GE provided a generic justification for not performing these tests and concluded that they are not needed to demonstrate the safety of plants implementing a CPPU. Ennis *et al.* Direct Testimony for NRC Staff at 10.

The NRC Staff reviewed and approved the CPPU topical report, as described in a Safety Evaluation (CPPU SE) released in March 2003.<sup>51</sup> However, the Staff *rejected* GE’s proposed *generic* exception of CPPUs from MSIV transient and GLR transient testing. Ennis *et al.* Direct Testimony for NRC Staff at 10, 16. Instead, the Staff concluded that it would continue to consider the need to conduct these tests on a plant-specific basis. In evaluating GE’s generic justification to dispense with the two large transient tests, the Staff considered: (1) the modifications made to the plant for a CPPU that are related to the two tests; (2) component and system level testing that will be performed, either as part of the licensee’s power ascension and test plan or to meet technical

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<sup>49</sup> See Ennis *et al.* Direct Testimony for Staff at 9; Entergy Exh. 25 at 3 (referencing Generic Guidelines for General Electric Boiling Water Reactor Extended Power Uprate, NEDC-3242P-A (Feb. 1999) [ELTR-1]).

<sup>50</sup> GE Licensing Topical Report NEDO-33004-A, Constant Pressure Power Uprate, Revision 4 (July 2003) (Entergy Exh. 25 (non-proprietary version) or 30P (proprietary version)).

<sup>51</sup> Safety Evaluation by the Office of Nuclear Reactor Regulation, GE Nuclear Energy Licensing Topical Report, NEDC-33004P, Revision 3, “Constant Pressure Power Uprate” (Mar. 31, 2003) [CPPU SE]. This document is incorporated into Entergy Exh. 25 at 3-87 (nonproprietary version) and in Entergy Exh. 30P at the same page numbers (proprietary version).

specification surveillance requirements; (3) past experience at other plants; and (4) the importance of the additional information that could be obtained from performing the two tests with respect to plant analyses. *Id.* at 10. The Staff stated that it was “developing guidance to generically address the requirement for conducting large transients tests in conjunction with power uprates,” adding that “information obtained from the MSIV closure and generator load rejection tests could be useful to confirm plant performance, adjust plant control systems, and enhance training material.” *Id.*; *see also* CPPU SE § 10.5.9. Finally, the CPPU SE indicated that, for BWRs using the CPPU approach, licensees may request plant-specific exemptions from the need to conduct the large transient tests in EPU situations. Ennis *et al.* Direct Testimony for NRC Staff at 10-11; CPPU SE §§ 10.5.8, 10.5.9.

## **B. Factual Findings on Key Contested Issues**

The Board now turns to the specific contested issues in this proceeding. The basic facts are that Entergy asserts, pursuant to subsection III.C, SRP 14.2.1, that there is no need to perform the MSIV transient test or the GLR transient test. The Staff agrees and so states in its FSER. NEC objects. And now this Board must decide whether an MSIV transient test and a GLR transient test are “required to demonstrate that the structures, systems and components [of the VYNPS on the reactor at the uprated conditions] will perform satisfactorily in service.” 10 C.F.R. Part 50, Appendix B, Criterion XI.

### ***1. Assertions of Parties — Overview***

Entergy and the Staff assert that an MSIV transient test and a GLR transient test are not “required to demonstrate that [the VYNPS] will perform satisfactorily in service” at the uprated power because operational experience shows that the effects of large transients on the VYNPS at EPU conditions can be predicted analytically, on a plant-specific basis, without the need for actual transient testing. They base this argument on (a) the similarity of the pre-EPU and post-EPU VYNPS design configuration and system functions; (b) the results of past transient testing at the VYNPS and other BWRs, and the plant’s response to unplanned transients; (c) confirmation that the results of transient computer simulations are consistent with, and bound, the experience from actual transients; and (d) the experience with unplanned transients at other plants that have been granted an EPU. Nichols/Casillas Direct Testimony for Entergy at 4.

In contrast, NEC asserts that Entergy’s rationale is technically unsound because it is based on three unsubstantiated propositions. The *first* of these allegedly unsound propositions is that none of the plant modifications introduces new



thermal-hydraulic phenomena or system interactions during or as a result of the transients introduced. The *second* is that the computer simulations or analysis performed accurately predict the plant response during a large transient. The *third* allegedly unsound proposition is that the computer simulations of the transients that were done for VYNPS were performed using General Electric's NRC-approved transient analysis computer code "ODYN," which NEC asserts is problematic.<sup>52</sup>

Dr. Hopenfeld asserts that each of these propositions is flawed because new and unexpected effects could occur during large transients due to the numerous system and component modifications made for the power uprate. He specifically cites the changes that were made to the steam dryers. Hopenfeld Direct Testimony for NEC at 6. With regard to the computer simulations, Dr. Hopenfeld states that Entergy has not provided a discussion showing why its simulations can be used as a substitute for transient testing. *Id.* at 5. Finally, NEC's witness asserts that Entergy does not state how the ODYN code was benchmarked against experiments for pressurization transients or for steady-state operation. *Id.*

In subsections IV.B.2, .3, and .4 we evaluate each of NEC's three main arguments in turn. We find some merit in portions of NEC's concerns. In subsection IV.C however, we turn to the ultimate factual issue and conclude that although there are some questions about the benchmarking of the ODYN code, other more important factors, such as industry and VYNPS operating experience, provide assurance that large transient testing of the VYNPS at uprate conditions is not required.

## **2. *Contested Issue 1 — Existence of New Thermal-Hydraulic Phenomena and/or New System Interactions***

### **a. *Key Evidence Presented***

NEC's first argument is that, in order to justify the exemption from the MSIV transient test and the GLR transient test, Entergy needs to show that "[n]one of the plant modifications that have been or will be made for the EPU will introduce new thermal hydraulic phenomena, nor will there be any new system interaction during or as a result of the analyzed transients introduced," and that Entergy has failed to do so. Hopenfeld Direct Testimony for NEC at 4. Dr. Hopenfeld stated,

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<sup>52</sup>Hopenfeld Direct Testimony for NEC at 4. "The 'ODYN code' is the One Dimensional DYNamic (ODYN) Core Transient Model, which is a General Electric licensing code designed to simulate selected fast transients in boiling water reactors. . . . ODYN has been approved by the NRC for application to transients such as feedwater controller failure–maximum demand; pressure regulator failure–closed; generator load reject; turbine trip; MSIV closure; loss of auxiliary power–all grid connections; and MSIV closure with position switch failure (MSIV flux scram)." Ennis *et al.* Direct Testimony for NRC Staff at 17.

for example, that, because of the increased flow velocity at EPU conditions, steady-state temperature and pressure fluctuations will increase the fatigue usage factors of the steam dryer, leading to a cumulative usage factor (CUF) that could be above the allowable limit of 1.<sup>53</sup> In discussing industry experience, he argued that Entergy's reference to several BWR reactors that have undergone transients, and for which Entergy claimed that no new phenomena have been exhibited, is insufficient. *Id.* at 5. Dr. Hopenfeld asserted that Entergy has not provided any analysis to indicate why these results are applicable to the VYNPS at the EPU conditions. Hopenfeld Rebuttal Testimony for NEC at 5. To make a valid comparison between the experience at other reactors and what is expected to occur at the VYNPS under transient conditions, Dr. Hopenfeld said, Entergy must show by actual computer analysis — including calculation of the stresses on key components — that the reactor experience referenced by Entergy is of sufficient relevance to support an exemption to the transient testing requirement. *Id.* at 14.

Entergy disagrees, arguing that assurance that operations at EPU will not introduce new thermal hydraulic phenomena or unexpected system interactions is provided by (1) the behavior of similar BWRs at EPU conditions, (2) the behavior of the VYNPS *after* it was physically modified for the EPU but prior to implementation of the actual uprate, (3) the system and component testing performed by Entergy during normal operations, and (4) the similarities between pre- and post-EPU plant design and configuration. Entergy Statement of Position at 9-15; Nichols/Casillas Direct Testimony for Entergy at 18-26.

With regard to industry experience, Entergy referred to thirteen BWRs (asserted to be similar to the VYNPS) that have implemented EPUs and noted that none of the eleven EPUs that occurred in the United States have been required to perform large transient testing. Entergy Statement of Position at 9. In particular, Entergy's witnesses pointed to two of these BWRs — the two-unit Brunswick plant<sup>54</sup> and the Hatch plant<sup>55</sup> — to support the proposition that large transient testing is not required under Criterion XI "to demonstrate the [VYNPS at EPU] will perform satisfactorily in service." Entergy Statement of Position at 9-11; Nichols/Casillas Direct Testimony for Entergy at 18-20. In an exhibit to its

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<sup>53</sup> *Id.* at 6. The cumulative usage factor (CUF) can be defined as the number of actual events divided by the maximum number of allowable events of that type. The ASME Boiler and Pressure Vessel Code invoked by 10 C.F.R. § 50.55a(c) limits the value of the CUF to 1 or less.

<sup>54</sup> Brunswick consists of two reactors, Units 1 and 2, that are located near Southport, North Carolina. Unit 1 has an electrical output of 872 MWe, was manufactured by General Electric, and is a BWR 4 with a Mark I containment. Unit 2 has a slightly lower electrical output of 811 MWe but is otherwise the same as Unit 1. See <http://www.nrc.gov/info-finder/reactor/bru2.html>.

<sup>55</sup> Hatch consists of two reactors, Units 1 and 2, that are located near Baxley, Georgia. Unit 1 has an electrical output of 856 MWe, was manufactured by General Electric, and is a BWR 4 with a Mark I containment. Unit 2 has an electrical output of 870 MWe and is also a General Electric BWR 4 with a Mark I containment. See <http://www.nrc.gov/info-finder/reactor/hat2.html>.

testimony, Entergy compared a number of parameters for Brunswick and VYNPS (including power density, relief capacity and bypass capacity) and asserted that the facilities are similar in all significant respects that bear on large transient performance. Entergy Exh. 38 at 1. For example, Entergy noted that the Brunswick units are both BWR 4s with Mark 1 containments — as is the VYNPS. Entergy’s witnesses asserted that a comparison of the design-important parameters for the Brunswick and VYNPS plants show that they are similar in the parameters that would affect the large transient performance of the plants, for example, power density and steam relief and bypass capacities. Nichols/Casillas Direct Testimony for Entergy at 6; Entergy Exh. 3. Mr. Nichols and Casillas further stated that in the fall of 2003, Brunswick Unit 2, which was granted a 120% EPU, experienced an unplanned generator turbine trip transient<sup>56</sup> when it was at 115.2% of its original licensed thermal power (OLTP) and that no anomalies or unanticipated plant behavior or phenomena occurred. Nichols/Casillas Direct Testimony for Entergy at 19.

Entergy also made reference to Unit 2 of the Hatch plant, another BWR 4 with a Mark 1 containment system similar to the VYNPS, which experienced an MSIV closure from 113% of the OLTP. *Id.* at 18. The operators of Hatch reported that all of the Hatch systems functioned as expected. *Id.*; Entergy Exh. 10. Entergy’s witnesses concluded that the absence of anomalies or unexpected phenomena during the post-uprate unplanned transients at Brunswick and Hatch supports the conclusion that the VYNPS should also perform as predicted during uprated conditions. Nichols/Casillas Direct Testimony for Entergy at 20.

With regard to the operational experience of VYNPS itself, Mr. Nichols and Mr. Casillas testified that five large transients occurred between 1991 and 2005 while the VYNPS was operating at full pre-EPU power levels, including two that occurred “after most of the modifications associated with the EPU were already implemented,” and that VYNPS experienced no significant anomalies during these transients. *Id.* at 23. Entergy’s witnesses also stated that there are great similarities between VYNPS’s pre- and post-EPU plant design and physical configuration and concluded that none of the EPU changes will introduce new thermal-hydraulic phenomena or new system interactions. *Id.* at 24-25.

The Staff agrees with Entergy on this matter. Staff witnesses stated that the information submitted by Entergy, including the operating experience at Hatch Units 1 and 2, support the proposition that the EPU-related modifications at VYNPS will not introduce new operating phenomena or anomalies. Ennis *et al.* Direct Testimony for NRC Staff at 12. For example, the Staff witnesses stated that, after uprate the Hatch plant experienced a Unit 1 turbine trip transient in

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<sup>56</sup> A “generator turbine trip transient” is a transient whose triggering event is different from that of a GLR transient, but which proceeds in the same manner as a GLR transient.

2000, a Unit 1 GLR transient in 2001, and a Unit 2 GLR transient in 1999, and that these transients produced no anomalies or unexpected phenomena. *Id.* In sum, the Staff witnesses stated that they reviewed Licensee Event Reports (LERs) concerning transients at other BWR units operating at EPU levels, looking specifically for examples of new phenomena, different responses in the modified systems, or any unusual behavior that could be attributed to the increased steam flow or feed flow. *See Ennis et al.* Direct Testimony for NRC Staff at 13. The Staff witnesses stated that they did not observe any such abnormal behavior, nor did they see any modifications to the VYNPS that were inconsistent with the modifications implemented at other facilities. *Id.*

Ms. Abdullahi of the Staff also testified that, for overpressure protection, the most important plant parameter in an MSIV transient is safety relief valve (SRV) capacity. Tr. at 1471. In contrast, for a GLR transient, she said the most important parameter is bypass capacity. Tr. at 1473. Ms. Abdullahi stated that the Staff examined the similarities of Brunswick and the VYNPS to determine if the performance of the two plants during MSIV transients and GLR transients would be similar, and concluded that they would. With regard to the MSIV transient, Ms. Abdullahi stated the SRV capacity for the VYNPS (at uprate) is 60%, which is similar to, and more conservative (i.e., safer) than the 56% SRV capacity for the Brunswick plant (at uprate). Tr. at 1471-72. With regard to the GLR transient, Ms. Abdullahi testified that the VYNPS has a bypass capacity of 86% of rated steam flow (at uprate), which is similar to and more conservative than the 69% bypass capacity of Brunswick Unit 2 (at uprate). Tr. at 1473. According to Ms. Abdullahi, these comparisons suggest to the Staff that the VYNPS has sufficient relief valve and bypass capacity in the event of an overpressure transient such as an MSIV closure or a GLR transient. Tr. at 1471-74.

*b. Board Findings*

The Board finds that the comparisons and similarities between the Brunswick BWRs and the VYNPS are persuasive. Both Brunswick and VYNPS are BWR 4s with Mark 1 containments, and they have similar power densities. Since both transients under consideration are pressurization transients, it is particularly important that the VYNPS has slightly greater relief capacity than Brunswick (60% for the VYNPS and 56% of total steam flow at uprated conditions for Brunswick). For the GLR transient, the higher steam bypass capacity for the VYNPS (86%) compared to Brunswick (60%) provides an even greater margin of assurance. Since the relief and steam bypass capacities to a large extent determine how a plant performs during a pressurization transient, the Board finds that Brunswick and the VYNPS would be expected to respond in a similar manner to either an MSIV closure transient or a GLR transient, with VYNPS having a somewhat greater safety margin in both instances.

This finding is further supported by the testimony regarding the actual behavior of the VYNPS during recent GLR transients. As Mr. Nichols pointed out, the transients at the VYNPS in 2004 and 2005 occurred *after* most of the modifications associated with the EPU were already implemented, including the new high-pressure turbine rotor, main generator stator rewind, the new high-pressure feedwater heaters, condenser tube staking, an upgraded isophase bus duct cooling system, and condensate demineralizer filtered bypass. Nichols/Casillas Direct Testimony for Entergy at 23. He added that VYNPS's performance during these transients, including that of the modified components, demonstrated that the EPU modifications do not introduce new hydraulic phenomena or significantly affect the plant's response during transient conditions. *Id.* Although these transients occurred at the original license power (or below) and not at the uprated conditions, they took place after most of the uprate modifications were completed. No anomalies were observed during the VYNPS transients.

While neither Entergy nor the Staff provided detailed comparisons of Hatch and the VYNPS, they did note that both are BWR 4s with Mark 1 containments and would thus be expected to behave in a similar manner during large transients. Hatch showed no anomalous behavior during an MSIV closure at uprated conditions.

Based on the testimony and exhibits concerning the operating experiences at Hatch and Brunswick under uprate conditions, the similarities between those plants and the VYNPS, and the transients and events that have occurred at the VYNPS, including two that occurred after most of the uprate modifications were made at VYNPS, albeit prior to the implementing the actual power increase, the Board finds that there is reasonable assurance that the operation of VYNPS at uprated conditions will not introduce new thermal hydraulic phenomena or system interactions that would occur during an MSIV transient or GLR transient.

### ***3. Contested Issue 2 — Adequacy of Computer Stress Analysis***

#### ***a. Key Evidence Presented***

One argument put forth by NEC concerning the computer analysis centers on the allegation that although General Electric's ODYN code is able to predict the maximum system pressure during a transient, it fails to predict the stress or vibration levels in individual components. Hopenfeld Rebuttal Testimony for NEC at 4, 7. Dr. Hopenfeld asserted that the applied structural stresses and allowable stresses ultimately determine whether a given component performs satisfactorily in service, and thus that ODYN's focus on the maximum pressure alone is insufficient to assure system performance. *Id.* at 7-8. Dr. Hopenfeld also asserted that "[t]he frequency and amplitude of the vibrations as well as the

component's natural frequency, which is affected by temperature and temperature gradients, for example, govern failure of components from vibrations." *Id.*

Dr. Hopenfeld testified that he was concerned that resonance vibrations of high amplitude could be excited during a transient. Tr. at 1517. If a given component is already weakened and has used up its fatigue cycles, he claimed, the component would already be at its endurance limit for fatigue prior to the stresses imposed by a transient. Or, if there is stress corrosion and the components are already cracked, then the resonant vibration could potentially cause a problem such that the component would not fulfill its design requirement. Tr. at 1516.

Mr. Casillas, testifying for Entergy, acknowledged that the ODYN computer analysis of large transient tests focuses on the peak vessel pressure and does not analyze other loads or stresses on individual components. Nichols/Casillas Direct Testimony for Entergy at 15-16. He asserted, however, that the peak vessel pressure analysis was appropriate to confirm that the reactor components and vessel meet the loads used in their design. *Id.* at 16-17. Mr. Nichols pointed out that there was a whole section of structural analysis performed for the power uprate, covering steady state, transients, and accident loads. Tr. at 1576.

Mr. Ennis, speaking for the Staff, also acknowledged that ODYN does not do a calculation of the stress in a component or what is commonly referred to as a "stress analysis." Tr. at 1482-83. He asserted, however, that a stress analysis for important components was done using other acceptable methods, as outlined in the constant pressure power uprate (CPPU) safety evaluation. *Id.* (citing CPPU SE § 3.2). For example, Mr. Ennis testified that the Staff review found that General Electric had calculated the stresses for the ASME base load code cases, and those calculations include transient conditions, as well as other conditions such as seismic. Tr. at 1481-82. He stated that the methodology used was consistent with the CPPU SE, that the stresses would remain within acceptable limits, and structural integrity would be maintained under EPU conditions, including transients. Ennis *et al.* Direct Testimony for Staff at 11-12; Tr. at 1482-83. He added that section 3.2 of the CPPU SE discusses the stress analysis of the reactor pressure vessel and its internals, and that section 3.4 discusses piping systems and associated components. Tr. at 1481-83; *see also* CPPU SE §§ 3.2, 3.4. Mr. Ennis further testified that a stress analysis was performed for the steam dryers, including stress under transient and steady-state conditions, even though they are not ASME components.<sup>57</sup> Mr. Ennis stated that the results of the analysis predicted that the structural integrity of the steam dryer and of piping system and components would be maintained under repeated loading conditions. Tr. at 1484.

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<sup>57</sup> Tr. at 1486. "ASME components" is a term of art that refers to those components required by 10 C.F.R. § 50.55a(c) to meet the requirements of Class 1 components in section III of the ASME Boiler and Pressure Vessel Code.

*b. Board Findings*

Because it was acknowledged that General Electric's ODYN computer code does not do a component stress analysis, the Board finds that NEC is correct that the ODYN code, by itself, is inadequate to determine the structural integrity of the components at steady state and during transients at the uprated power. As the Staff testified, however, the ODYN code was not used by itself. Additional stress analysis, as outlined in the CPPU SE, was done to determine the stress levels in various critical components, including the steam dryers, and the results were acceptable. The Board therefore finds that the stress analysis performed in accordance with ASME-accepted analysis<sup>58</sup> methods on the steam dryer and on the ASME components, in conjunction with the ODYN computer analysis, provided adequate assurance of safe operation after the uprate and is therefore acceptable.

**4. Contested Issue 3 — Adequacy of ODYN Code Benchmarking for Pressurization Transients or for Steady-State Operation**

*a. Key Evidence Presented*

NEC's expert, Dr. Hopenfeld, is critical of Entergy's use of the General Electric ODYN computer code, asserting that such a computer code must be validated (i.e., "benchmarked") by comparing its predictions with data from well-instrumented prototype components. Hopenfeld Direct Testimony for NEC at 5. Dr. Hopenfeld stated that, if such validation or benchmarking is not done, the predictions of the code may result in significant errors in values calculated by the code, for example, in the values of the parameters that determine the transfer of heat. *Id.* at 6. Knowing the uncertainty in a code's predictions, which is to say how much error there might be in the calculation, is essential to understanding the capability of the code to estimate whether the component will fail under uprated conditions. Dr. Hopenfeld testified that, when Entergy discussed the benchmarking of the ODYN code, Entergy (1) provided no comparison of experimental data with code predictions, (2) did not describe in sufficient detail how the code was qualified, and (3) failed to state that the ODYN code was benchmarked for pressurized transients and for steady-state operations. *Id.* at 5-7. Dr. Hopenfeld asserted that Entergy must provide the public with an analysis of the key assumptions underlying use of the code. *Id.* at 5.

Dr. Hopenfeld further pointed out that because computer codes such as ODYN incorporate certain simplifications to describe transient behavior, their validity is

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<sup>58</sup> Tr. at 1486. Acceptable methods are discussed in the ASME Boiler and Pressure Vessel Code, the use of which is required by 10 C.F.R. § 50.55a(c).

limited to those cases in which the code was benchmarked by comparison with real-world data. *Id.* He further testified that, because of those simplifications, a computer code such as ODYN has a limited range of validity, i.e., such codes can predict outcomes very accurately under a certain set of boundary conditions, yet the codes might be very inaccurate in predicting the outcome under different boundary conditions.<sup>59</sup> Dr. Hopenfeld asserted that it is not the amount of conservatism that is important, but rather the understanding of the reasons for any discrepancy between the experimental data and the code predictions. Hopenfeld Rebuttal Testimony for NEC at 9.

According to Dr. Hopenfeld, neither Entergy nor the Staff discusses the specific test data, particularly the Peach Bottom turbine trip data,<sup>60</sup> that was compared to the ODYN predictions to validate the code. *Id.* at 6. NEC's expert also stated that neither Entergy nor the Staff explain why the predicted peak reactor pressure calculated by the ODYN code for the Peach Bottom turbine trip experiment exceeded the measured experimental data. *Id.* at 9. Dr. Hopenfeld acknowledged that, to understand the validity of the code predictions, one need not review or be interested in the specific mathematical techniques in the ODYN code or in any proprietary data. Rather, he declared that it would be sufficient to be able to determine, from information Entergy should be supplying, how accurately ODYN can predict the experimental measurements from the Peach Bottom experiment. *Id.* For example, he testified that Entergy should compare the ODYN code predictions of core exit pressure rise, pressure oscillations, and water levels to the measured values from the turbine trip tests at Peach Bottom. *Id.* at 9-10.

Mr. Casillas, testifying for Entergy, disagreed, asserting that the ODYN code accurately models BWR vessel physical components, mechanical equipment functions, and control systems and accurately predicts the nuclear thermal-hydraulic phenomena. Nichols/Casillas Direct Testimony for Entergy at 12-13. He stated that “[t]he simulation involves describing the actual physical plant in the model (i.e., volumes, flow paths, resistances), establishing the desired operating conditions (i.e., water level, power, pressure) and introducing a disturbance (i.e., valve closure, pump trip, control action).” *Id.* at 13. Based on the physical model correlations, Mr. Casillas concluded that the ODYN code accurately predicts the plant response behavior. *Id.*

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<sup>59</sup> Declaration of Dr. Joram Hopenfeld Supporting New England Coalition's Response to ENVY's Motion for Summary Disposition (Dec. 21, 2005) at 3 (incorporated by reference into Hopenfeld Direct Testimony for NEC at 7).

<sup>60</sup> Peach Bottom Unit 2 is a General Electric BWR 4 with a Mark 1 containment. <http://www.nrc.gov/info-finder/reactor/pb2.html>. The Peach Bottom turbine trip tests refer to a series of three turbine trip experiments performed at Peach Bottom Unit 2 in April 1977. General Electric Licensing Topical Report, Qualification of the One-Dimensional Core Transient Model for Boiling Water Reactors, Vol. 1 (Aug. 1986) at II-39 to II-40 (Entergy Exh. 26).



Mr. Casillas further asserted that GE has benchmarked the ODYN code “against all significant plant transients including turbine trips (equivalent in its effects to a generator load rejection test) and main steam valve isolation events.” *Id.* at 14. He stated that the turbine trip data were obtained from the Peach Bottom and Swiss KKM plants, and that the MSIV closure data were obtained from the Hatch plant. *Id.* Mr. Casillas further declared that the Peach Bottom turbine trip tests date back to the late 1970s and form the initial benchmark for pressurization transients and uncertainty margins for the ODYN code. *Id.* According to him, all subsequent advanced versions of the ODYN code have been assessed against these tests and continue to form the basis for the code’s accuracy. *Id.* at 14-15. He stated that “the current version of the ODYN code continues to accurately predict the overpower magnitude and slightly overpredict the overpressure magnitude vis-a-vis the Peach Bottom tests.” *Id.* at 15.

Mr. Casillas testified that an earlier version of the ODYN code, the 05 version, was qualified (i.e., benchmarked) by GE against MSIV transient data from a cycle-one test at the Hatch nuclear power plant that occurred in 1983. Tr. at 1330; Nichols/Casillas Direct Testimony for Entergy at 14. Mr. Casillas stated that there are two important parameters in an MSIV closure — pressure and water level. Tr. at 1602 (redacted version). According to him, GE compared the water level and pressure that were predicted by ODYN (05 version) against the actual water level and pressure that occurred during the Hatch test and concluded that the ODYN (05 version) code was accurate and conservative in its prediction of peak pressure and water level during an MSIV transient. *See id.* at 1602-05. Mr. Casillas pointed out, however, that NRC accepted the ODYN code based on the Peach Bottom tests/benchmark and that the Hatch benchmark was not part of that acceptance. Tr. at 1330.

Mr. Casillas acknowledged that current code validation practice requires that one perform representative transients that one intends to analyze using the subject code, and that this approach is substantially different from what was done with ODYN for an MSIV transient. Tr. at 1333-35. In the case of ODYN, he pointed out that GE includes the Peach Bottom turbine trip transient in its suite of code comparisons used to benchmark the code for licensing applications, but does not include an MSIV closure such as the Hatch test. Tr. at 1329-30.

Mr. Casillas also acknowledged that in addition to benchmarking the code, an analyst must ensure that the plant model represents the subject reactor. He testified that GE indeed uses a design procedure whereby the inputs are verified to ensure that they reflect the characteristics of the subject plant. Tr. at 1352-53. He indicated

that the procedure tells the analyst how to nodalize<sup>61</sup> the model, where the nodes should be, how big or how small they need to be, and how many of them are needed. Tr. at 1353. Mr. Casillas explained that the plant data used to develop the ODYN plant model are taken from drawings, system settings and set points, and plant dimensions. *Id.* He stated that the designer runs some stability tests and some model comparisons, including the steady-state condition predicted by the model with the plant conditions. *Id.* But, he acknowledged that no comparisons are made between the ODYN code that uses the plant model and data from actual transients. Tr. at 1354. Once completed, the model is checked by an independent verifier. Tr. at 1355.

The NRC Staff witnesses Zeynab Abdullahi and George Thomas pointed out that ODYN “has been approved by the NRC for application to transients such as . . . generator load reject, turbine trip; [and] MSIV closure.” Ennis *et al.* Direct Testimony for Staff at 17. They testified further that the qualification process for the code included “quantifying the accuracy of the code’s predictions” and comparing ODYN predictions with real-world occurrences and with the predictions of other models. *Id.* at 18-20. After the Staff initially approved it, Ms. Abdullahi and Mr. Thomas stated that the ODYN code was assessed against actual transients in plants at EPU conditions, and the model has performed properly in these circumstances. *Id.* at 21-24. According to Ms. Abdullahi and Mr. Thomas, these tests “provide reasonable assurance that use of the ODYN code will acceptably simulate plant response to limiting pressurization response.” *Id.* at 23-24.

*b. Board Findings*

It is the Board’s conclusion that, as Entergy has acknowledged, current code validation practices require that a code be benchmarked or compared against all transients of interest. The transients of interest here (i.e., the ones that are the subject of NEC Contention 3) are the GLR transient and the MSIV transient. In the case of GLR transients, the Board finds that the GE benchmarking of the ODYN code against data from the Peach Bottom turbine trip experiment satisfied the benchmarking requirement for GLR transients because, for this purpose, we consider turbine trip transients equivalent to GLR transients.

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<sup>61</sup> As the Board understands it, the term “nodalize” refers to the fact that, once a geometric model has been created, a procedure is used to define and break up the model into smaller elements called nodes. The computer model is defined by a geometric mesh or network of these nodes. The nodes represent the regions or volumes where the physical parameters of interest such as pressure and temperature are calculated. The nodes are defined by a numbering scheme that allows reference to be made to the parameters of interest at specific locations in the model.

With regard to MSIV transients, however, even Entergy's witnesses admit that GE does not routinely benchmark or do a comparison of versions of the ODYN code with plant data from an MSIV closure. For the model of the plant used with the ODYN code, Entergy witnesses explained that the model is checked using a validation procedure where the input data are confirmed by an independent verifier. Tr. at 1353. The model is then used with the ODYN code to calculate the pressures, temperatures, and other reactor and reactor system characteristics of the plant while at steady-state conditions. The results are compared with actual plant data to validate the plant model. Tr. at 1353-54. Entergy witnesses stated, however, that no transients are analyzed using the plant data to benchmark the plant model. Tr. at 1354.

As was noted above, the Board finds that the method used by GE to benchmark the ODYN code for steady state and for a GLR transient are adequate to calculate reactor pressure for a GLR transient because each version of the code is checked against a test suite that includes the Peach Bottom turbine trip transient. We find that the methods used to benchmark the ODYN code for an MSIV transient are *not* adequate, however, because data from such a transient are not in the test suite used to assess each version of the ODYN code. We also find that the plant models are not adequately verified because the verification process does not include checking the models' ability to replicate anything other than steady-state conditions.

While thus concluding that the ODYN code benchmarking for MSIV transients could be improved, we do not agree, based on the evidence before us, that this deficiency alone is a sufficient basis for resolving this challenge to Entergy's EPU request in NEC's favor. As the record before us amply demonstrates, actual operational experience, rather than the ODYN code, is the important factor in determining what testing is needed to assure safe operation under uprated conditions.

While any benchmarking deficiencies relative to the ODYN code thus are not determinative in our decision on NEC Contention 3, we do note that there have been a number of improvements made (and assessed) to the ODYN code since it was originally approved for use in licensing by the NRC in 1981.<sup>62</sup> Code development and verification and benchmarking techniques have evolved over the years and currently are relatively sophisticated when compared to those in use when ODYN was approved. Understanding the inherent uncertainties in the various models internal to the code is especially important where safety margins are reduced, as in the case of power uprates. Consequently, if continued regulatory

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<sup>62</sup> See Letter from Robert L. Tedesco, Assistant Director for Licensing, NRC, to Dr. G.G. Sherwood, Manager for Safety and Licensing, General Electric Co., Acceptance for Referencing General Electric Licensing Topical Report NEDO-24154/NEDE-24154P (Feb. 4, 1981) (incorporated into Entergy Exh. 26 at 3).

use of ODYN is contemplated, the Board encourages the Staff to take a fresh look at the code's components and their uncertainties to see if a reassessment of the ODYN code using modern methods is warranted.

### C. Ultimate Factual Finding

As framed by the three specific objections raised by NEC in Contention 3, the ultimate factual and legal issue in this case may be summarized as whether, under all of the facts and circumstances presented in the record, Entergy has adequately demonstrated that the VYNPS structures, systems, and components will perform satisfactorily under uprated conditions, without the need for an MSIV transient test or a GLR transient test. Entergy, not NEC or the Staff, bears the burden of proof on this question.

Our consideration of this issue begins with the proposition that the NRC Staff's guidance contemplates that, as a general rule, a MSIV transient test and a GLR transient test should be performed prior to an EPU. Entergy Exh. 4 (SRP § 14.2.1). However, the Staff guidance also provides a mechanism whereby the EPU applicant can submit a case-by-case justification as to why such testing is unnecessary. The guidance specifies seven factors that should be considered in determining whether these large transient tests are needed. *See* discussion *supra* at 175. And while the Staff guidance is not binding on the Board, we find it provides a set of reasonable and useful factors to consider.

In this case, Entergy and the Staff followed the approach outlined in SRP 14.2.1. Entergy's EPU application included a request and justification as to why large transient testing should not be required. Entergy Exh. 5. Entergy's justification covered six of the seven factors laid out in SRP 14.2.1. *Id.* The Staff reviewed this request and determined that it should be granted, i.e., "that there is reasonable assurance that the VYNPS SSCs will perform satisfactorily in service under EPU conditions." Entergy Exh. 7 (FSER at 271). NEC disagreed, and filed the instant contention, raising the specific issues and challenges set forth above.

As an initial matter in resolving NEC Contention 3, the Board attempted to understand the basis for the Staff's conclusion that the MSIV and GLR transient tests were unnecessary. All of the filings and the exhibits including those taken from the FSER (1) recited the factors identified in SRP § 14.2.1, (2) repeated Entergy's statements and justifications, and (3) summarily concluded, with virtually no explanation, that the Staff believed that Entergy had satisfied the guidance and that it should be exempt from large transient testing.<sup>63</sup> Given

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<sup>63</sup>The Staff's explanation of its conclusion seemed to be a generic one. "From the EPU experience referenced by the licensee, it can be concluded that large transients, either planned or unplanned, have  
(Continued)

this information, NEC's position was not entirely surprising. Our concern was further fueled by the fact that, although the Staff previously denied GE's request for generic exemption from large transient testing in EPU situations, and instead required that a case-by-case justification be presented, in reality the Staff has granted every case-by-case exemption that has ever been requested (all fifteen). Tr. at 1454. Of great concern was the Staff's failure to explain, until questioned by the Board, the logic used in reaching the conclusion that large transient testing was not necessary at VYNPS.

As it turned out, however, during the evidentiary hearing both Entergy and the Staff provided persuasive testimony and evidence supporting the proposition that the MSIV and GLR transient tests are not required to demonstrate that the VYNPS structures, systems, and components will perform satisfactorily under the uprated conditions. In this regard, Entergy and the Staff provided ample evidence that the industry operating experience at analogous BWR plants indicated that large transient testing at VYNPS under uprated conditions is not needed. They discussed the thirteen BWR plants that have implemented EPUs and focused specifically on the Hatch and Brunswick units, explaining the substantial similarities between those facilities and the VYNPS. Nichols/Casillas Direct Testimony for Entergy at 18-20; Ennis *et al.* Direct Testimony for Staff at 12. This testimony included evidence that the performance of the Hatch and Brunswick plants under MSIV and GLR transients has been satisfactory with no anomalies or unexpected thermal-hydraulic phenomena. Nichols/Casillas Direct Testimony for Entergy at 18-20; Entergy Exh. 38; Ennis *et al.* Direct Testimony for Staff at 12. Likewise, Ms. Abdullahi of the Staff testified that "everything happened as designed, and as expected" during the MSIV closure event (at 113% uprate) at Hatch and the turbine trip event (at 120% uprate) at Brunswick. Tr. at 1434. Ms. Abdullahi emphasized, rightly we believe, that empirical operating experience, not ODYN, is the most important factor in evaluating what testing, if any, is necessary to assure that the VYNPS will perform safely at uprate conditions. Tr. at 1433-35.

The Board is also impressed that the operating experience at VYNPS, the nature of the modifications made at the plant as a part of the EPU, and the component testing, all indicate that the EPU will not introduce new thermal or hydraulic phenomena that warrant conducting MSIV or GLR transient tests. In this regard, Mr. Jones, testifying for the Staff, stated they considered four factors in evaluating the delta of the EPU. Tr. at 1427. First, Mr. Jones stated that the Staff evaluated the scope of the modifications. Tr. at 1428. According to him, there were twenty modifications, the most important of which were listed

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not provided any significant new information about transient modeling or actual plant response." Entergy Exh. 7 (FSER at 271). We do not know what to make of this rationale, given that the Staff previously rejected GE's attempt to obtain a generic exemption from large transient testing in a CPPU EPU.

by Entergy in Exhibit 39. Tr. at 1426; Staff Exh. 2 at 273. In assessing the impact of the modifications on a GLR transient, Mr. Jones asserted that very few that would alter the response of either the turbine bypass system or the feed and condensate system to a GLR transient. Tr. at 1428. Second, Mr. Jones said that the Staff looked for any indication that there would be new thermal-hydraulic phenomena that would affect the response of the VYNPS to a GLR. He stated that the Staff's conclusion that no such phenomena can be identified is based on several LERs from other plants that have experienced load rejection transients at extended power uprate conditions. Tr. at 1428. Third, Mr. Jones stated that the Staff considered the recent experience at the VYNPS after many of the modifications for the uprate had been made, including the load rejection event occurred at the VYNPS in June 2004. *Id.* Although the 2004 event occurred at a lower power than that of the uprate, it occurred *after* many of the balance of plant modifications for the uprate had already been implemented. Mr. Jones stated that no unusual behavior was observed as a result of this event. Tr. at 1428. Fourth, Mr. Jones declared that the Staff considered the power ascension test program, which included extensive monitoring of the plant under steady-state conditions as well as during a slow power ascension. Tr. at 1428-29.

He added that the Staff also considered the separate effects tests, such as the technical specification test that checks the feedwater isolation if the reactor vessel is overfilled and the tests of other systems that would be implemented as part of the post-modification EPU testing. Tr. at 1429. Finally, Mr. Jones cited the condensate and feedwater test that was implemented as part of the license condition, asserting that it demonstrated, again, the proper integrated performance in the feedwater and condensate systems to a transient. Tr. at 1429.

On the basis of the foregoing, and the entire record herein, the Board finds that the industry experience at the Hatch and Brunswick plants, as well as prior experience at VYNPS, has shown no abnormal behavior or evidence of fuel damage as a result of the transients experienced. Further, although it occurred before the uprate was completed, the 2004 transient at the VYNPS also provides reassurance that transient testing is not required because most of the EPU modifications were already in place at the time. Most fundamentally, the Board agrees with the NRC Staff's assertion that industry operating experience, not code predictions, should be the major factor in this type of decision. Furthermore, although the ODYN code predictions were not the major determination in the Staff's decision, or in ours, the Board notes that the predictions of the ODYN code are consistent with the observed transient behavior of Hatch, Brunswick, and the VYNPS despite the apparent lack of adequate benchmarking.

The Board finds that the industry experience cited by the Staff and applicant, as well as the transient experienced at the VYNPS, provides an adequate basis for us to conclude that it is not necessary to perform an MSIV closure test or a

generator load rejection test to satisfy the regulatory requirements described in section III of this order.

## V. CONCLUSIONS OF LAW

Criterion XI of 10 C.F.R. Part 50, Appendix B and 10 C.F.R. § 50.54(a)(1) require that each nuclear power plant implement a quality assurance program that includes “all testing required to demonstrate that the structures, systems and components will perform satisfactorily in service.” It is the burden of the EPU applicant, Entergy, to show that its QAP testing program meets this criterion. Here, the New England Coalition asserts that large transient testing — specifically a main steam isolation valve transient test and a generator load rejection test — are needed to demonstrate that the VYNPS will perform satisfactorily in EPU service. The NRC Staff and the Advisory Committee on Reactor Safeguards considered the matter and concluded that such large transient testing is not required.<sup>64</sup>

As stated above, the Board is persuaded by the evidence presented, particularly the industry experience cited by the Staff and Entergy and the transient experienced at the VYNPS, that a main steam isolation valve closure test or a generator load rejection test are not necessary to assure safe operation of the VYNPS after its extended power uprate. Accordingly, we conclude that Entergy’s quality assurance program satisfies Criterion XI and 10 C.F.R. § 50.54(a)(1) by providing “all testing required to demonstrate that the structures, systems and components will perform satisfactorily in service.” Thus, NEC Contention 3 is resolved in favor of Entergy.

## VI. ORDER

For the foregoing reasons it is hereby ordered that NEC Contention 3 is resolved in favor of the applicant, Entergy. This initial decision shall constitute the final decision of the Commission forty (40) days from the date of its issuance, unless, within fifteen (15) days of its service, a petition for review is filed in accordance with 10 C.F.R. §§ 2.1212 and 2.341(b).<sup>65</sup> Filing of a petition for review is mandatory for a party to exhaust its administrative remedies before seeking judicial review. 10 C.F.R. § 2.341(b)(1).

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<sup>64</sup> Entergy Statement of Position; *see also* Entergy Exh. 22.

<sup>65</sup> Pursuant to 10 C.F.R. § 2.1207(a)(3)(iii), the Board, by separate order, is providing to the Commission’s Secretary all questions submitted by the parties under 10 C.F.R. § 2.1207(a)(3)(i)-(ii).

It is so ORDERED.

THE ATOMIC SAFETY AND  
LICENSING BOARD<sup>66</sup>

Alex S. Karlin, Chairman  
ADMINISTRATIVE JUDGE

Anthony J. Baratta  
ADMINISTRATIVE JUDGE

Lester Rubenstein  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
February 26, 2007

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<sup>66</sup>Copies of this Memorandum and Order were sent this date by Internet e-mail transmission to representatives for (1) licensees Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.; (2) intervenor New England Coalition of Brattleboro, Vermont; and (3) the NRC Staff.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

J.E. Dyer, Director

In the Matter of

Docket Nos. 50-498  
50-499  
(License Nos. NPF-76,  
NPF-80)

STP NUCLEAR OPERATING  
COMPANY  
(South Texas Project, Units 1  
and 2)

February 24, 2007

The Petitioner requested that the Nuclear Regulatory Commission (NRC) issue demands for information (DFIs) to STP Nuclear Operating Company (STPNOC), Licensee for the South Texas Project (STP) Electric Generating Station, Units 1 and 2, to provide NRC the results of assessments of the safety-conscious work environment (SCWE) at STP conducted since January 1, 2004; summaries of action plans and results of actions to remedy the problems revealed by the assessments, including documents mentioned at an August 2005 meeting convened to discuss the STP SCWE; summaries of action plans and results of efforts to remedy problems revealed by such assessments in 2001 and 2003; and all correspondence between the NRC, STPNOC, and Wackenhut Corporation concerning the 2001, 2003, and 2005 comprehensive cultural assessments.

The Petitioner requested that NRC issue DFIs to obtain information in order to be better informed and to better assess the effectiveness of steps taken by STPNOC regarding Wackenhut Corporation and other entities who, according to the Petitioner, have had persistent problems. The Petitioner requested that NRC require the licensee to docket the information subject to DFIs.

The final Director's Decision (DD) was issued on February 24, 2007. The final DD addresses the Petitioner's requested actions as follows. Since the NRC already has reviewed and has ready access to all of the information requested

by the Petitioner, and since issuance of the requested DFIs to STPNOC would not result in an order or other action, the requested DFIs are not warranted. Additionally, since the requested material was not required by a previous NRC order (Confirmatory Order Modifying License (Effective Immediately) of June 9, 1998) addressing the concerns with Wackenhut, which required STPNOC to conduct the actions for which the Petitioner requested that the NRC issue DFIs, and since the material was not submitted to the NRC, and is maintained at the Licensee's facility and readily accessible to the NRC Staff, docketing the requested information is unwarranted.

Accordingly, the NRC denied the Petitioner's requests to issue DFIs to STPNOC, and to require STPNOC to docket the documents for which DFIs were requested.

## **DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

### **I. INTRODUCTION**

By letter dated May 16, 2006, as supplemented on June 26, 2006, Mr. Glenn Adler of Service Employees International Union (hereinafter Petitioner) filed a petition pursuant to Title 10 of the *Code of Federal Regulations* (10 C.F.R.), section 2.206. The Petitioner requested that the U.S. Nuclear Regulatory Commission (NRC) take certain enforcement action.

#### **A. Actions Requested**

The Petitioner requested that NRC issue a demand for information (DFI) to require STP Nuclear Operating Company (STPNOC), the Licensee for South Texas Project Electric Generating Station (STP), to provide the following information:

1. any assessments of the safety-conscious work environment (SCWE) at STP conducted since January 1, 2004;
2. summaries of any associated action plans and the results of any efforts to remedy problems revealed by these assessments, including the following documents mentioned at an August 2005 meeting, apparently convened to discuss the plant's SCWE:
  - a. strengths, weaknesses, opportunities, and threats analysis to assess the issues and actions required and follow-up on these actions to improve station alignment,
  - b. outsourcing lessons learned, and

- c. an evaluation of information technology, supply chain, technical training, and Wackenhut Corporation to assess the issues and recommended actions;
3. summaries of any associated action plans and the results of efforts to remedy problems revealed by such assessments in 2001 and 2003; and
4. all correspondence between the NRC, STPNOC, and Wackenhut concerning the 2001, 2003, and 2005 comprehensive cultural assessments (CCAs).

#### **B. Petitioner's Bases for the Requested Actions**

The Petitioner stated that in 1998, the NRC found that STP had violated Federal law by subjecting four employees to a "hostile work environment" after the employees raised safety concerns. As a basis for the request, the Petitioner noted that the NRC issued an order requiring STP to hire an independent contractor to conduct periodic CCAs.

The Petitioner stated that Wackenhut took over security at STP in July 2001, after winning a 3-year contract for security, with an option for 2 additional years. The Petitioner further noted that in the 2001 and 2003 CCAs, Wackenhut scored poorly on independent surveys assessing the STPNOC nuclear safety culture, SCWE, general culture and work environment, leadership, management, and supervisory skills and practices.

The Petitioner stated that despite apparently repeated efforts by STPNOC to remedy the poor performance of Wackenhut, a more recent survey revealed that Wackenhut's performance problems continued, as indicated in the 2005 CCA, and that the STPNOC action plans apparently were not successful with respect to Wackenhut and other entities. The Petitioner requested that the NRC scrutinize the steps taken by STPNOC to rectify problems identified in the 2001, 2003, and 2005 CCAs.

The Petitioner asserted that by obtaining the requested documents, the NRC will be better informed about improvement in the Licensee's SCWE at STPNOC, and will be better able to assess the effectiveness of the steps taken to remedy persistent problems regarding Wackenhut and other entities.

#### **C. NRC Petition Review Board's Meeting with the Petitioner**

The Petitioner met with the Office of Nuclear Reactor Regulation's petition review board (PRB) on June 27, 2006, to clarify the bases for the petition. The transcript of this meeting was included in the PRB meeting summary, treated as a supplement to the petition, and is available in the Agencywide Documents Access

and Management System (ADAMS) for inspection at the Commission's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible from the ADAMS Public Electronic Reading Room on the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, or 301-415-4737, or by e-mail to [pdr@nrc.gov](mailto:pdr@nrc.gov).

The NRC Staff sent a copy of the proposed director's decision to the Petitioner and STPNOC for comment by letters dated November 22, 2006. At the request of the Petitioner, the NRC extended the end of the comment period from December 21, 2006, to January 12, 2007. The NRC Staff did not receive any comments on the proposed director's decision.

## II. DISCUSSION

The Petitioner raised issues related to the SCWE and the general work environment at STP, and requested enforcement action in the form of a DFI that would require STPNOC to provide certain information to the NRC. The Petitioner stated that the information would allow the NRC to be better informed and to better assess the effectiveness of previous steps taken with Wackenhut and other entities which have persistent problems.

To address these issues, the NRC Staff reviewed its oversight of STPNOC since June 9, 1998, when the NRC Staff issued a Confirmatory Order Modifying License (Effective Immediately), EA 97-341, to STPNOC. The Order confirmed STPNOC's agreement to improve the handling of safety concerns brought to management by workers. The Order required STPNOC to use an independent contractor to periodically survey its employees, supervisors, management, and contractors about their concerns regarding SCWE through 2002 and report the results of each survey to the NRC. The final CCA required by the Order was performed in January 2003. The NRC reviewed this CCA as documented in Inspection Report ID 50-498/03-09 and 50-499/03-09. This inspection closed the Order. NRC Inspection Report ID 50-498/03-09 and 50-499/03-09 is publicly available on the NRC Web site via ADAMS at Accession No. ML031920509.

The Petitioner requested that any assessments of the SCWE at STP conducted since January 1, 2004, be provided to the NRC and docketed to enable the NRC to provide better oversight. The NRC Staff's review identified the following three assessments of the SCWE at STP, which were conducted since January 1, 2004:

1. The NRC assessed the SCWE at STP, as documented in NRC Problem Identification and Resolution Inspection Report ID 05000498/2004011 and 05000499/2004011, using the guidance in Inspection Procedure

71152B, "Identification and Resolution of Problems," revised September 8, 2003. NRC Inspection Report ID 05000498/2004011 and 05000499/2004011 is publicly available via ADAMS at Accession No. ML050040481.

2. The Licensee contracted with Management Insight Technologies to perform a sitewide culture assessment in May 2005. The survey evaluated general worker morale and the SCWE at the STP site. In September 2006, the NRC reviewed the assessment as it related to the STP SCWE, using the guidance of Inspection Procedure 71152B, "Identification and Resolution of Problems," revised June 22, 2006. This review is documented in NRC Problem Identification and Resolution Inspection Report, ID 05000498/2006009 and 05000499/2006009, and is publicly available via ADAMS at Accession No. ML063200197. The NRC reviewed the May 2005 CCA, while on site and does not have a copy of the contractor's assessment.
3. In September 2006, the NRC initiated a security inspection at STP that addressed SCWE issues and other general culture and work environment issues. The agency summarized the results of this inspection in "Summary of NRC's Review of the Recent Security Issues at the South Texas Nuclear Power Plant," publicly available on the NRC Web site via ADAMS at Accession No. ML063310469 as well as in a "For the Record" entry dated November 27, 2006, at <http://www.nrc.gov/reading-rm/doc-collections/for-the-record/2006/south-texas-project.pdf>.

Based on the referenced assessments and associated NRC inspection reports, the NRC determined that overall a positive SCWE currently exists at STP. Nonetheless, some general culture issues were identified at STP that, if not corrected, may have the potential to impact SCWE. The NRC therefore will continue to monitor the SCWE at STP, during the next Security baseline inspection scheduled for early 2007.

The Petitioner requested that the NRC issue a DFI, that would require STPNOC to provide summaries of any action plans and the results of any efforts to remedy problems associated with the assessments of the SCWE at STP conducted since January 1, 2004. The Petitioner requested that this information be docketed to enable the NRC to provide better oversight. The NRC Staff has reviewed several of the documents and continues to have access while on site to all of the information requested by the Petitioner.

Pursuant to 10 C.F.R. § 2.204, the NRC may issue DFIs to NRC licensees for the purpose of determining whether an order under 10 C.F.R. § 2.202 should be issued, or whether other actions should be taken. In addition, the NRC Enforcement Manual (available on the NRC Web site at <http://www.nrc.gov/what->

*we-do/regulatory/enforcement/guidance.html*) states, “A DFI is a significant action. It should be used only when it is likely that an inadequate response will result in an Order or other enforcement action.”

Since the NRC has reviewed and has ready access to all of the information for which Petitioner has requested a DFI, NRC would not obtain any additional information by issuing the requested DFI. As a result, issuance of the requested DFI to STPNOC would not result in an order or other action and is not warranted. Accordingly, Petitioner’s request for a DFI is denied. The NRC has also denied Petitioner’s request to docket the documents for which Petitioner requested a DFI. The NRC will docket only documents which are submitted to the NRC. However, the NRC is denying Petitioner’s request for a DFI, and NRC did not require submission of the documents in its Confirmatory Order Modifying License (Effective Immediately) of June 9, 1998. Instead, STPNOC maintains the documents for ready access by the NRC at the site.

## II. CONCLUSION

The Petitioner raised issues related to the SCWE at STP. The NRC has determined that overall a positive SCWE currently exists at STP. The Petitioner raised issues related to the general work environment at STP as these conditions affect the SCWE. Some general culture issues were identified at STP during the recent security inspection. The NRC will continue to monitor the SCWE at STP and as part of the next security baseline inspection scheduled for early 2007.

The Petitioner requested that NRC issue a DFI to obtain information in order to be better informed and to better assess the effectiveness of steps taken by STPNOC regarding Wackenhut and other entities who have had persistent problems. Since the NRC already has reviewed and has ready access to all of the information requested by the Petitioner, issuance of the requested DFI to STPNOC would not result in an order or other action and is not warranted. Since the requested material was not required by the NRC order and was not submitted to the NRC, and is maintained at the Licensee’s facility and readily accessible to the NRC Staff, docketing the requested information is unwarranted. Accordingly, the NRC denies the Petitioner’s requests to issue a DFI to STPNOC, and to docket the documents for which a DFI was requested.

As provided in 10 C.F.R. § 2.206(c), a copy of this Director’s Decision will be filed with the Secretary of the Commission for the Commission to review. As provided for by this regulation, the Decision will constitute the final action of the

Commission 25 days after the date of the Decision unless the Commission, on its own motion, institutes a review of the Decision within that time.

FOR THE NUCLEAR REGULATORY  
COMMISSION

J. E. Dyer, Director  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,  
this 24th day of February 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 52-007-ESP**

**EXELON GENERATION COMPANY, LLC**  
**(Early Site Permit for Clinton**  
**ESP Site)**

**March 8, 2007**

**EARLY SITE PERMIT PROCEEDING**

An initial decision authorizing a construction permit is considered stayed pending Commission action. 10 C.F.R. § 2.340(f). An early site permit is considered a partial construction permit, and thus requires action by the Commission even in the absence of any appeal from the Board's Initial Decision.

**LICENSE CONDITIONS**

The Commission has the authority to appropriately condition the license approved by the Board.

**LICENSE APPLICATIONS**

The NRC has broad legal authority under the Atomic Energy Act and has authority to independently verify the facts contained in an application. The Staff appropriately uses an audit system to prioritize the facts it will independently verify, taking into account whether the issue involves "first-of-a-kind analysis, use of new modeling techniques, application of new or revised review guidance,



areas of higher significance based upon risk-informed reviews, or where the Staff's independent analysis or technical experience and judgment does not support the analysis results of the Applicant.' See NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (1996), and Review Standard RS-002, "Processing Applications for Early Site Permits" (2004).

#### **LICENSE APPLICATIONS**

An application for an NRC permit must be made under oath or affirmation. See AEA § 182, 42 U.S.C. 2232. Section 186 of the Atomic Energy Act allows the NRC to revoke any license for a material false statement in the application. Thus, the NRC reasonably relies on its licensees and applicants to submit complete and accurate information. A violation of this requirement is a serious violation and can result in a range of enforcement actions.

#### **EARLY SITE PERMIT PROCEEDING**

Issues resolved in the ESP proceeding are treated as "resolved" in a subsequent construction permit or COL proceeding that references the ESP, unless a contention is admitted under narrowly specified conditions. 10 C.F.R. § 52.39(a)(2). For instance, a contention arguing that the proposed reactor does not fit into the site parameters of the ESP, or that the terms and conditions of the ESP are not met, is potentially admissible at the COL stage. But any challenge to the established terms and conditions of the ESP could only be raised as a petition to modify a license under 10 C.F.R. § 2.206.

#### **EARLY SITE PERMIT PROCEEDING**

Whether or not any petitioner challenges the construction permit, the NRC Staff will address each COL action item at the construction permit stage.

### **MEMORANDUM AND ORDER**

Today we approve the issuance of an Early Site Permit (ESP) for the Clinton ESP site.

## I. BACKGROUND

Exelon Generation Company, LLC, filed its application for an ESP for the Clinton, Illinois, site in 2003. Although a group of intervenors was admitted as a party to the proceeding at its onset, the group's contention was resolved through summary disposition in 2005.<sup>1</sup> After that action, the proceeding became uncontested but still subject to a mandatory hearing under the Atomic Energy Act.<sup>2</sup> After the Board issued its Initial Decision,<sup>3</sup> the Commission invited the parties to the proceeding to submit comments responding to the Board's findings therein.<sup>4</sup>

Pursuant to 10 C.F.R. § 2.340(f), an initial decision authorizing a construction permit is considered stayed pending Commission action. An early site permit is considered a partial construction permit, and thus requires action by the Commission even in the absence of any appeal from the Board's Initial Decision.

In this instance a stay is not warranted. No party has requested a stay and the Commission approves, in this Memorandum and Order, issuance of the ESP. In any event, it should be recognized that an ESP is not an authorization to construct or operate a nuclear power plant. It relates only to site suitability.

## II. ISSUES ON REVIEW

In support of our review, we asked the NRC Staff and Exelon to respond to two specific findings in the Board's order and invited them to provide comments on any other matter of concern. In addition to responding to our two inquiries, the NRC Staff asked us to clarify an issue raised by the Initial Decision. Exelon confined itself to answering our two questions. Because we have confidence in our Staff's review, no party has brought any other issue to our attention, and we see no additional issues, we have confined our review to these issues.

### A. Modification of Hydrology Permit Conditions

We asked the NRC Staff and Exelon for comments on the Board's expansion of Permit Condition 3 and the Board's characterization of Permit Condition 4. We have considered the three hydrology-related permit conditions in the SER,

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<sup>1</sup> LBP-05-19, 62 NRC 134, 183 (2005), *review denied*, CLI-05-29, 62 NRC 801 (2005), *petition for review denied sub nom. Environmental Law and Policy Center v. NRC*, 470 F.3d 676 (7th Cir. 2006).

<sup>2</sup> See AEA § 189a, 42 U.S.C. § 2239(a).

<sup>3</sup> LBP-06-28, 64 NRC 460 (2006).

<sup>4</sup> CLI-07-4, 65 NRC 24 (2007).

the Board's discussion of them, and the NRC Staff's and Exelon's explanation of them.

Permit Conditions 3 and 5 were included to ensure that the effects that construction of a particular facility will have on groundwater flows are considered at the later construction permit or combined license (COL) phase. According to the Staff's Final Safety Evaluation Report (FSER),<sup>5</sup> the Applicants' safety analysis report described the groundwater flowpath in "limited detail," and did not provide the precise location for the proposed ESP facility.<sup>6</sup> The Staff concluded that the Applicant had not provided sufficient information on the potential impact of the ESP facility on groundwater flows.<sup>7</sup> Permit Condition 3 was included to resolve the missing information:

The applicant's description of the effluent-holding facility presumed (see Section 2.4.13.1 and 2.4.13.3 of this SER) that there will be no scenario where liquid radioactive effluent could be released above the ambient groundwater table, including the scenario where the effluent-holding facility could be flooded raising the release point above the ambient groundwater table. The staff agreed that under these assumptions, release of liquid radioactive effluent to ambient groundwater can be precluded. Therefore, the staff determined that it is necessary to ensure that the hydraulic gradient will always point inwards into the radwaste holding and storage facility from ambient groundwater during construction and operation of the ESP facility, including the time during which recovery of groundwater occurs to near its pre-dewatering elevation.<sup>8</sup>

Permit Condition 5 requires groundwater monitoring to assure that Permit Condition 3 is not violated.<sup>9</sup>

Permit Condition 4 would provide: "The NRC staff proposes to include a condition in any ESP that might be issued in connection with this application requiring a radwaste facility design for a future reactor with features to preclude any and all accidental releases of radio-nuclides into any potential liquid pathway is necessary."<sup>10</sup>

The Board found Permit Condition 4's language precluding "any and all" releases to be so broad as to be "unachievable as a practical matter" and

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<sup>5</sup> NUREG-1844, "Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon Generation Company, LLC (EGC) ESP Site" (May 2006).

<sup>6</sup> FSER at 2-156.

<sup>7</sup> *See id.* at 2-159. This was designated Open Item 2.4-18 in the draft SER.

<sup>8</sup> FSER, Appendix A at A-3.

<sup>9</sup> *Id.* The Staff has said it intends to combine these two conditions in the ESP. *See* NRC Staff's Response to Commission's January 22, 2007, Order (Feb. 1, 2007) at 3 n.2.

<sup>10</sup> FSER, Appendix A at A-3.

potentially unenforceable.<sup>11</sup> The Board proposed that Permit Condition 3 be expanded to say that the hydraulic gradient must point inward, not only to the radwaste facility itself, but to any “piping leading into the radwaste building or other buildings [containing] liquid radwaste.”<sup>12</sup>

The NRC Staff insisted, as it still does, that no modification of Permit Condition 3 is necessary in light of Permit Condition 4, which will assure that the appropriate design features are included to protect surface and ground waters outside the engineered systems.<sup>13</sup>

The Commission believes that a modification of Permit Condition 4 is warranted in order to meet the intent of the Staff’s proposed language while addressing concerns raised by the Board and the Applicant. The Commission revises Permit Condition 4 to require, as a condition of the grant of the ESP, that:

radioactive waste management systems, structures, and components, as defined in Regulatory Guide 1.143, for a future reactor include features to preclude accidental releases of radionuclides into potential liquid pathways.

In light of this revision of Permit Condition No. 4, the Commission does not believe that the Board’s expansion of Permit Condition No. 3 is necessary. Although the Commission is not altering the Staff’s proposed Permit Conditions 3 and 5 out of deference for the Staff’s findings in this particular case, this decision should not be considered to be precedent-setting in regard to the need for these conditions for any other current or future ESP applications. The Commission believes that the issues addressed by Permit Conditions 3 and 5 will be more fully fleshed out in a COL application referencing this ESP. The Commission also cautions the Staff that a more functional, performance-oriented approach, when adequate, is likely to avoid the questions of interpretation and practicality that have arisen in this case.

#### **B. NRC Staff’s “Audit” Method of Verifying Underlying Facts**

In its ruling, the Board stated that it had been constrained by previous Commission rulings on the scope of its review and expressed concerns about the extent of the Staff’s independent verification of factual assertions in Exelon’s ESP application.<sup>14</sup> We consider our current regulatory approach, of relying on our licensees

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<sup>11</sup> LBP-06-28, 64 NRC at 495.

<sup>12</sup> *Id.*

<sup>13</sup> See NRC Staff’s Response to the Board’s December 12, 2006, Order (Dec. 14, 2006); see NRC Staff’s Response to Commission’s January 22, 2007, Order (Feb. 1, 2007), at 2-4.

<sup>14</sup> LBP-06-28, 64 NRC at 491-93.

to submit complete and accurate information, and auditing that information as appropriate, to be entirely consistent with sound regulatory practice.

First, the NRC has broad legal authority under the Atomic Energy Act and certainly has authority to independently verify the facts contained in an application. However, as explained in its brief for the Commission, the Staff uses an audit system which allows it to prioritize which facts it will independently verify. We agree with the Staff that it appropriately selects areas to verify information, “such as areas involving first-of-a-kind analysis, use of new modeling techniques, application of new or revised review guidance, areas of higher significance based upon risk-informed reviews, or where the Staff’s independent analysis or technical experience and judgment does not support the analysis results of the Applicant.”<sup>15</sup> In addition, according to the Staff, the review here was conducted in conformity with NUREG-0800 Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants” (1996), and RS-002, “Processing Applications for Early Site Permits” (2004).

Moreover, applications — and statements made in connection with applications, such as this one — are required to be made under oath or affirmation.<sup>16</sup> Section 186 of the Atomic Energy Act allows the NRC to revoke any license for a material false statement in the application. Thus, the NRC reasonably relies on its licensees and applicants to submit complete and accurate information. A violation of this requirement is a serious violation and can result in a range of enforcement actions.

Therefore, we fully expect our Staff to continue to utilize our longstanding regulatory practice of only verifying facts as necessary, based on its expert judgment, as it did in this case.

### **C. Open or Unresolved Items**

In its response to our order seeking comments on the Board’s Initial decision, the NRC Staff raised a concern that the Board’s order improperly characterized as “unresolved” issues relating to permit conditions and COL action items.<sup>17</sup> Specifically, in the portion of its order addressing NEPA, the Board said that, while the ESP should be issued subject to the permit conditions and COL action items identified in the Staff’s review, “none of the aforesaid Permit Conditions,

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<sup>15</sup> *Id.*, citing NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants” (1996), and Review Standard RS-002, “Processing Applications for Early Site Permits” (2004).

<sup>16</sup> See AEA § 182, 42 U.S.C. § 2232.

<sup>17</sup> Staff’s Response to Commission’s January 22, 2007, Order, at 8.

the COL Action Items, or items listed as requiring further action or followup shall be treated as 'resolved' for the purposes of 10 C.F.R. § 52.39(a)(2).'<sup>18</sup>

NRC regulations provide that all issues resolved in the ESP proceeding shall be treated "as resolved" in a subsequent construction permit or COL proceeding that references the ESP, unless a contention is admitted under narrowly specified conditions.<sup>19</sup> For instance, a contention arguing that the proposed reactor does not fit into the site parameters of the ESP would be admissible at the COL stage, providing that the petitioner meets the applicable contention standards. A contention arguing that the terms or conditions of the ESP are not met would fall into this category. But any challenge arguing that the terms or conditions of the ESP should be modified may only be raised as a petition to modify a license under 10 C.F.R. § 2.206.

It is unclear to us whether the Board intended its statement about "unresolved" matters to say anything more than the regulation already says. Certainly, whether or not a permit condition is met would be a potentially litigable issue in a construction permit or COL proceeding for the Clinton site.<sup>20</sup> Similarly, whether or not any petitioner challenges the construction permit, the NRC Staff will address each COL action item, so that those matters are not "resolved" in the sense that they will receive further attention in the future.

### III. CONCLUSION

For the foregoing reasons, we authorize the Staff to issue the ESP, subject to the direction in this Memorandum and Order.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 8th day of March 2007.

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<sup>18</sup> LBP-06-28, 64 NRC at 488.

<sup>19</sup> 10 C.F.R. § 52.39(a)(2).

<sup>20</sup> See Staff Response to Commission's January 22, 2007, Order, at 8.

### **Commissioner Merrifield — Concurring in Part and Dissenting in Part**

I agree with the majority decision in most respects. I write separately to emphasize my disagreement with the majority's approval of Permit Condition 3 which requires that the hydraulic gradient will always point inward into the radwaste holding and storage facility during construction and operation of the ESP facility.

I am disappointed that the majority has chosen to leave this permit condition undisturbed. In this instance it appears that the Applicant has identified a favorable site condition — that due to the hydraulic gradient of the site, it was extremely unlikely that any radioactive liquids would be released into the surrounding environment. Rather than accepting this for what it was, a measure of additional protection, the Staff decided to make maintaining the inward pointing hydraulic gradient an absolute requirement.

The Applicant proposed modifying the permit condition so that they would either ensure that the hydraulic gradient is pointed in an inward direction, or they would provide design features to preclude accidental releases of radionuclides. As the Applicant correctly notes, the Staff has not required either the Grand Gulf Early Site Permit or the North Anna Early Site Permit to have a hydraulic gradient that points in an inward direction.

For the Clinton ESP, the Staff has required the Applicant to have both the hydraulic gradient pointing inward, and design features to preclude any release. The Staff asserts that both are needed for adequate protection, but fails to explain why they are required at the Clinton site, but not required at any other site.

In my mind it is poor regulatory practice to turn favorable site characteristics that an Applicant has brought to our attention into absolute permit conditions. I am concerned that we are imposing a condition that could potentially require the permit holder to construct unusual and unnecessary means (such as continuous groundwater pumping to maintain hydrologic flow) to maintain the gradient when there is no corresponding safety need for such a requirement. I am unaware of any other instances in which a federal regulator has imposed ongoing groundwater pumping requirements as a site condition absent actual contamination at the site. I believe this outcome could lead to regulatory instability in this area and would have preferred to see the Commission remove this absolute requirement that the hydraulic gradient always point in an inward direction.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-271-LR**

**ENTERGY NUCLEAR VERMONT  
YANKEE, LLC, and ENTERGY  
NUCLEAR OPERATIONS, INC.  
(Vermont Yankee Nuclear Power  
Station)**

**In the Matter of**

**Docket No. 50-293-LR**

**ENTERGY NUCLEAR GENERATION  
COMPANY and ENTERGY  
NUCLEAR OPERATIONS, INC.  
(Pilgrim Nuclear Power Station)**

**March 15, 2007**

**MOTIONS FOR RECONSIDERATION**

A motion for reconsideration must demonstrate “compelling circumstances, such as the existence of a clear and material error in a decision, which could not have reasonably been anticipated, that renders the decision invalid.” 10 C.F.R. § 2.323(e). The Massachusetts Attorney General has not demonstrated a “clear and material error” in our affirming the two Board decisions we were reviewing.



## **FINALITY**

Our decision in CLI-07-3 was final as to the Massachusetts Attorney General's only claims in the two license renewal proceedings. The Massachusetts Attorney General has no claim remaining in either adjudication. A request for judicial review must be brought immediately if at all. *See Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 681 (7th Cir. 2006). She also has the option of awaiting an NRC decision in her petition for rulemaking. Agency decisions on rulemaking petitions are judicially reviewable. *See, e.g., Bullcreek v. NRC*, 359 F.3d 536 (D.C. Cir. 2004).

## **FINALITY**

The mere potential that an issue may become moot in the future due to a rulemaking does not affect the finality of a decision resting on current law.

## **STAY**

Only a "party" to a proceeding, or an interested governmental entity participating under 10 C.F.R. § 2.315, may file a request to stay proceedings pending a rulemaking under 10 C.F.R. § 2.802. The Mass AG did not offer an admissible contention and was never admitted to either of these two proceedings as a "party."

## **MEMORANDUM AND ORDER**

Today we deny the Massachusetts Attorney General's (Mass AG's) Motion for Reconsideration of CLI-07-3.<sup>1</sup> In CLI-07-3 we rejected the Mass AG's appeal of decisions by two different Licensing Boards in proceedings to renew the operating license at the Vermont Yankee Power Station in Windham County, Vermont,<sup>2</sup> and the Pilgrim Nuclear Power Station in Plymouth, Massachusetts.<sup>3</sup>

### **I. BACKGROUND**

In CLI-07-3, we affirmed the Boards' rejection in each proceeding of a contention which disputed findings in the Generic Environmental Impact Statement for license renewal concerning the environmental consequences of spent fuel

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<sup>1</sup> CLI-07-3, 65 NRC 13 (2007).

<sup>2</sup> LBP-06-20, 64 NRC 131 (2006).

<sup>3</sup> LBP-06-23, 64 NRC 257 (2006).

storage. The contention argued that recent evidence showed that high-density storage in spent fuel pools is more dangerous than previously believed. In our decision, we noted that the Mass AG had filed a petition for rulemaking raising even broader issues than the contention,<sup>4</sup> and said that a petition for rulemaking is a more appropriate avenue for resolving generic concerns about spent fuel fires than a site-specific contention in an adjudication.<sup>5</sup>

The Mass AG argues that CLI-07-3 was ambiguous in terms of its finality and whether the Mass AG is considered a ‘party’ to the ongoing license proceedings. Her motion asks that the Commission:

- (a) confirm [that CLI-07-3] is a non-final decision with respect to the Attorney General, (b) clarify that the Attorney General continues to have party status in the individual license renewal proceedings until those proceedings are concluded, and (c) further clarify that the Attorney General has the right to seek judicial review, as necessary, to ensure the application of the final rulemaking to the individual license renewal proceedings for Pilgrim and Vermont Yankee.<sup>6</sup>

The Mass AG pointed to language in CLI-07-3 saying that it would be ‘‘premature’’ to consider staying the license renewal proceedings to await the outcome of the rulemaking petition because many issues unrelated to the Mass AG’s rulemaking petition must also be resolved in those proceedings.<sup>7</sup> The Mass AG contends that if it is premature to rule on her request to halt the license renewal proceedings, then her request is still pending and, therefore, CLI-07-3 is not in all respects a ‘‘final’’ decision.

The NRC Staff and Entergy<sup>8</sup> oppose the Motion for Reconsideration.<sup>9</sup> They say that the Mass AG’s motion has not shown any basis for us to reconsider the ruling, and the motion is more a request for clarification than a request for reconsideration. They also suggest that the Commission make clear that our

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<sup>4</sup> See Massachusetts Attorney General’s Petition for Rulemaking To Amend 10 C.F.R. Part 51 (Aug. 25, 2006); see 71 Fed. Reg. 64,169 (public notice).

<sup>5</sup> CLI-07-3, 65 NRC at 17.

<sup>6</sup> See Massachusetts Attorney General’s Motion for Reconsideration and Clarification of CLI-07-03, at 3 (Feb. 1, 2007).

<sup>7</sup> See CLI-07-3, 65 NRC at 22 n.37.

<sup>8</sup> Entergy Nuclear Operations, Inc., together with Entergy Nuclear Generation Company, holds the operating license for the Pilgrim Nuclear Power Station. Entergy Nuclear Operations, Inc. and Entergy Vermont Yankee, LLC, hold the license for the Vermont Yankee Nuclear Power Station. In today’s decision we refer to the license applicants collectively as ‘‘Entergy.’’

<sup>9</sup> See NRC Staff Answer to Massachusetts Attorney General Motion for leave To File and Motion for Reconsideration of CLI-07-03 (Feb. 16, 2007); Entergy’s Response to Massachusetts Attorney General’s Motion for Reconsideration and Clarification of CLI-07-03 (Feb. 16, 2007).

previous ruling was final with respect to the Mass AG's participation in the *Pilgrim* and *Vermont Yankee* license renewal proceedings.<sup>10</sup>

## II. ANALYSIS

### A. No Basis for Reconsideration

Despite its characterization as a motion for “reconsideration,” the Mass AG’s pleading gives us no reason to reconsider our decision in CLI-07-3. A motion for reconsideration must demonstrate “compelling circumstances, such as the existence of a clear and material error in a decision, which could not have reasonably been anticipated, that renders the decision invalid.”<sup>11</sup> The Mass AG calls the decision “internally inconsistent, unclear, or potentially prejudicial” to her claims,<sup>12</sup> but does not contend that it violates our regulations or NEPA. The whole of the Mass AG’s argument goes to the supposed “ambiguity” concerning the decision’s finality. She has not demonstrated a “clear and material error” in our affirming the two Board decisions we were reviewing.

### B. Finality of Decision

Our decision in CLI-07-3 was final as to the Mass AG’s only claims in the two license renewal proceedings. The Mass AG has no claim remaining in either adjudication. Thus, if she wants to pursue judicial review of our rejection of her contentions, she must do so now.<sup>13</sup> It is true that the petition for rulemaking currently under consideration might possibly render judicial review moot. But the mere potential that an issue may become moot in the future due to a rulemaking does not affect the finality of the decision today.

To clarify an additional point, under NRC regulations, the Mass AG currently has no right to request that the final decisions in *Pilgrim* and *Vermont Yankee* license renewal proceedings be stayed until the rulemaking is resolved.<sup>14</sup> As we indicated in CLI-07-3, only a “party” to the proceedings, or an interested governmental entity participating under 10 C.F.R. § 2.315, may file a request to

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<sup>10</sup>NRC Staff Answer at 5; Entergy’s Response at 5.

<sup>11</sup> 10 C.F.R. § 2.323(e).

<sup>12</sup> Massachusetts Attorney General’s Motion for Reconsideration at 2.

<sup>13</sup> See *Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 681 (7th Cir. 2006). She also has the option of awaiting an NRC decision in her petition for rulemaking. Agency decisions on rulemaking petitions are judicially reviewable. See, e.g., *Bullcreek v. NRC*, 359 F.3d 536 (D.C. Cir. 2004).

<sup>14</sup>The Mass AG’s rulemaking petition requested such. CLI-07-3, 64 NRC at 22 n.37.

stay proceedings (pending a rulemaking) under 10 C.F.R. § 2.802.<sup>15</sup> The Mass AG is neither. Because she did not offer an admissible contention, she was never admitted to either of the two proceedings as a “party.”<sup>16</sup>

### III. CONCLUSION

For the forgoing reasons, the Mass AG’s motion for reconsideration is denied. Our decision in CLI-07-3 is clarified as above.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
This 15th day of March 2007.

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<sup>15</sup> *Id.*

<sup>16</sup> A state may participate *either* as an interested governmental entity *or* as a party with its own contentions, but not both. *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 626-27 (2004). Therefore, the Mass AG could not have sought “participation” status under section 2.315 while the appeal on the admissibility of her contention was still pending. But, as at least one contention has been admitted for hearing in each of the *Vermont Yankee* and *Pilgrim* proceedings, the Mass AG could seek participant status even now.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 52-009-ESP**

**SYSTEM ENERGY RESOURCES, INC.**  
**(Early Site Permit for Grand Gulf**  
**ESP Site)**

**March 27, 2007**

**NEPA: EARLY SITE PERMIT APPLICATIONS**

It is appropriate to defer issues concerning the effects of short-term damage to the environment and the irretrievable commitment of resources to the construction permit or combined license stage. These effects cannot be meaningfully assessed at the ESP stage because such an inquiry requires weighing the short-term damage against long-term benefits of the project, and the long-term benefits cannot be assessed until the construction permit or COL stage. For the proposed facility, the precise electrical output of the unit, which will be selected at the construction permit phase, is not yet known. Similarly, an assessment of the irretrievable commitment of resources — i.e., construction resources — will not be known until a particular reactor design is selected.

**NEPA: EARLY SITE PERMIT APPLICATIONS**

Any power level selected at the COL stage other than the 2000-MWe target value used in the Environmental Impact Statement's alternative energy analysis would constitute new information that, if found to be significant, would have to be evaluated at the construction permit or combined license application stage.

## MEMORANDUM AND ORDER

Today we approve the issuance of an Early Site Permit (ESP) for the Grand Gulf ESP site.

### I. BACKGROUND

System Energy Resources, Inc. (SERI), filed its application for an ESP for the Grand Gulf, Mississippi site in 2003. Although a group of intervenors sought intervention, none of the group's contentions were found to present a litigable issue in this proceeding.<sup>1</sup> Thereafter, the proceeding was uncontested but still subject to a mandatory hearing under the Atomic Energy Act.<sup>2</sup>

In support of our review, the Commission asked the NRC Staff and SERI to respond to three specific findings in the Board's Initial Decision,<sup>3</sup> and invited them to provide comments on any other matter of concern.<sup>4</sup> Because we have confidence in our Staff's review, no party has brought any other issue to our attention, and we see no additional issues, we have confined our discussion to the three issues we specified.

### II. ISSUES ON REVIEW

#### A. Deferral of Site Characterization Relating to Radionuclide Transport

We asked the parties to respond to the Board's observations about deferring any further site characterization relating to radionuclide transport until the construction permit or combined license (COL) stage.<sup>5</sup>

The Staff proposed to include in the ESP a Permit Condition 2 "requiring that an applicant referencing such an ESP design any new unit's radwaste systems with features to preclude any and all accidental releases of radionuclides into any potential liquid pathway."<sup>6</sup> In its response to our briefing order, SERI proposed

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<sup>1</sup> See LBP-04-19, 60 NRC 277 (2004), *aff'd*, CLI-05-4, 61 NRC 10 (2005).

<sup>2</sup> See AEA § 189a, 42 U.S.C. § 2239(a).

<sup>3</sup> LBP-07-1, 65 NRC 27 (2007).

<sup>4</sup> CLI-07-7, 65 NRC 122 (2007).

<sup>5</sup> We note that SERI agreed, in its response to the Commission, that deferral of certain further site characterization to the COL stage is appropriate. System Energy Resources, Inc.'s Response to Commission Order Regarding Atomic Safety and Licensing Board's Initial Decision (Feb. 22, 2007) (SERI's Response) at 2-3.

<sup>6</sup> See NUREG-1840, "Safety Evaluation Report for an Early Site Permit (ESP) at the Grand Gulf ESP Site" (Apr. 2006), App. A at A-2.

that the scope of the proposed permit condition be clarified.<sup>7</sup> We agree that a modification of Permit Condition 2 is warranted.<sup>8</sup> We revise Permit Condition 2 to require, as a condition of the grant of the ESP that: “radioactive waste management systems, structures, and components, as defined in Regulatory Guide 1.143, for a future reactor include features to preclude accidental releases of radionuclides into potential liquid pathways.” As we did in *Clinton*, the Commission cautions the Staff that a more functional, performance-oriented approach, when adequate, is likely to avoid the questions of interpretation and practicality that have arisen in this case.

### **B. Deferral of NEPA Analysis of Short-Term Damage and Commitments of Resources**

We asked the NRC Staff and SERI to respond to the Board’s view that the Staff finding that an ESP by its nature can have no short-term damage to the environment and involves no commitment of resources was inconsistent with CEQ regulations.<sup>9</sup> The Board said the NRC Staff’s position violated the CEQ regulation requiring agencies to consider the environmental effects of “related” actions.<sup>10</sup> According to the Board, the construction and operation of a power plant should be considered an action “related” to issuing an ESP. The Board found, however, that this inconsistency did not preclude issuing the ESP because the NRC Staff considered the issue unresolved and deferred to the COL stage.<sup>11</sup>

We disagree with the Board’s suggestion. In our view, the Staff’s finding is correct: the effects of short-term damage to the environment cannot be meaningfully assessed at the ESP stage because such an inquiry requires weighing the short-term damage against long-term benefits of the project, and the long-term benefits cannot be assessed until the construction permit or COL stage. As of now, it is not even known what the electrical output of the selected unit will be. Similarly, an assessment of the irretrievable commitment of resources — i.e., construction resources — will not be known until a particular reactor design

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<sup>7</sup> SERI’s Response at 9-10.

<sup>8</sup> The Board raised a number of questions and concerns about the intent and effect of the “any and all” terminology. See LBP-07-1, 65 NRC at 57-60. In the proceeding on the issuance of an ESP for the Clinton ESP site, the Board in its Initial Decision noted that similar permit condition language precluding “any and all” releases was so broad as to be “unachievable as a practical matter and, therefore, may be unenforceable as a legal matter . . . .” *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-06-28, 64 NRC 460, 495 (2006).

<sup>9</sup> See LBP-07-1, 65 NRC at 102.

<sup>10</sup> 40 C.F.R. § 1508.27(b)(7).

<sup>11</sup> See NUREG-1817, “Environmental Impact Statement for an Early Site Permit (ESP) at the Grand Gulf Site” (April 2006) at 10-6.

is selected. Because the Staff merely deferred these narrow questions to a time when they can be accurately assessed, we find the Staff's actions consistent with NEPA's requirements.

### **C. Effect of Power Level Selection on Environmental Analysis**

We asked the NRC Staff and SERI for comments on the Board's finding that any power level selected at the COL stage other than the 2000-MWe target value used in the alternative energy analysis would constitute new information that, if found to be significant, would have to be evaluated at the COL stage.<sup>12</sup> Both the NRC Staff and SERI agree with the Board's assessment.<sup>13</sup>

For purposes of comparing alternative sources for generating power, the Staff compared the environmental impacts of a nuclear reactor generating approximately 2000 MWe against the impacts caused by other types of generating facilities generating approximately 2000 MWe. At the hearing, expert witnesses for both the NRC Staff and SERI acknowledged that selection of a different size plant would be new information.<sup>14</sup> In that situation, SERI says that it would inform the NRC Staff of the new information and perform its own analysis of whether the information is significant in terms of whether it could affect the EIS's alternatives analysis.<sup>15</sup> In other words, simply because the reactor design selected by SERI might have a different MWe value at the COL stage than what was assumed at the ESP stage does not mean there would have to be a full reanalysis of alternatives. That would depend on SERI's (and the NRC Staff's) significance analysis.

We agree with the parties that a different power level would be new information that would have to be evaluated to determine whether or not it is significant.

## **III. CONCLUSION**

For the foregoing reasons, we authorize the Staff to issue the ESP, subject to the direction in this Memorandum and Order.

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<sup>12</sup> LBP-07-1, 65 NRC at 80.

<sup>13</sup> Staff Brief in Response to CLI-07-07, at 8; SERI's Response at 8.

<sup>14</sup> *See, e.g.*, statement of Kathryn M. Sutton, Applicant's attorney, at Tr. at 361 ("It's a certainty that [a different Mwe target value] would be new. Its not a certainty for all parameters that it would necessarily be significant").

<sup>15</sup> *See* SERI's Response at 8-9. Testimony of John Cesare, for Applicant, Tr. at 349-52, 354-57.



IT IS SO ORDERED.

For the Commission

ANDREW L. BATES  
Acting Secretary of the Commission

Dated at Rockville, Maryland,  
this 27th day of March 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 70-00698**

**CBS CORPORATION**  
**(Waltz Mill Facility)**

**March 29, 2007**

**CBS CORPORATION**

The Commission holds in abeyance a request for a hearing by CBS Corporation (CBS) on the NRC Staff's denial of CBS's application for a declaratory order which would relax cleanup standards at a Waltz Mill, Pennsylvania site or in the alternative, for an amendment to the materials license, which is held by Westinghouse Electric Company, LLC (Westinghouse).

**ADJUDICATORY BOARDS: ROLE**

The Commission will not be drawn into commercial contractual disputes, absent a concern for the public health and safety or the common defense and security, except to carry out its responsibilities to act to enforce its licenses, orders, and regulations.

**RULES OF PRACTICE: RIPENESS**

The Commission is holding this hearing request in abeyance because Staff action may obviate the need for the Commission to address the hearing request presented by CBS for the Westinghouse license. Additionally, the commercial

dispute between the two licensees may be resolved in binding arbitration before the Arbitration Panel.

## MEMORANDUM AND ORDER

### I. INTRODUCTION

By this Order, we hold in abeyance a request for a hearing by CBS Corporation (CBS) on the NRC Staff's denial of CBS's<sup>1</sup> application for a declaratory order regarding NRC Materials License No. SNM-770, NRC Docket No. 70-00698 or, in the alternative, for an amendment to the license. The declaratory order and alternative license amendment proposals involved efforts by CBS to relax cleanup standards in the materials license held by Westinghouse Electric Company LLC

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<sup>1</sup>“CBS” in this Memorandum and Order refers to CBS and all its corporate predecessors both prior and subsequent to the execution of the commercial agreement entered into between CBS and Westinghouse in March 1999 at the Waltz Mill site southwest of Pittsburgh (the primary corporate predecessor of CBS was Westinghouse Electric Corporation). However, the “Westinghouse” referred to throughout this Memorandum and Order is Westinghouse Electric Company LLC, the claimant in the commercial dispute and holder of the materials license.

CBS Corporation is primarily a media conglomerate that became involved at the Waltz Mill site in December 1997 when Westinghouse Electric Corporation (not the Westinghouse Electric Company LLC currently involved in this dispute) acquired CBS, resulting in Westinghouse Electric Corporation changing its corporate name to CBS Corporation. Prior to the December 1997 corporate name change, both the test reactor license and the materials license had been held by one licensee, Westinghouse Electric Corporation. However, on January 23, 1998, the name on the SNM-770 materials license became “Westinghouse Electric Company, a division of CBS Corporation” until March 1, 1999, when it was changed to Westinghouse Electric Company LLC. The name on the retired test reactor license, effective July 31, 1998, became “CBS Corporation Acting Through Its Westinghouse Electric Company Division” and was shortened to “CBS Corporation” on March 25, 1999, when CBS entered an agreement for the sale of its commercial nuclear business to a consortium composed of British Nuclear Fuels Ltd. and Morris Knudsen Corporation (hereinafter referred to as BNFL). CBS retained the test reactor license; BNFL created a new subsidiary, calling it the Westinghouse Electric Company LLC. (BNFL recently sold its business to Toshiba, effective October 2006. However, the name that has appeared on the NRC materials license since March 1999 is Westinghouse Electric Company LLC).

As a result of restructuring, Viacom, Inc. replaced CBS as the holder of the test reactor license in 2000. Subsequently, Viacom was restructured, with some assets transferred to a new publicly traded entity referred to as the New Viacom, while other assets — including the retired test reactor facility — became part of the new publicly traded entity, CBS. In January of 2006, the NRC received a license amendment request from Viacom to change the name on the test reactor license back to CBS to reflect the restructuring changes. Although the NRC Staff has not taken action on the amendment request, the current submissions from each entity involved in this Waltz Mill dispute identify CBS, not Viacom, as the current Waltz Mill test reactor license holder.

(Westinghouse), not CBS, at an 85-acre site southeast of Pittsburgh, Pennsylvania, known as Waltz Mill. The NRC Staff denied CBS's request on August 9, 2006, because CBS is not the holder of the materials license. The Staff concluded that CBS could not properly apply for an amendment to someone else's license.

In the same letter denying CBS's request, the NRC Staff also acknowledged receipt of CBS's "Application To Amend TR-2 Final Decommissioning Plan, Rev. No. 1, NRC Docket No. 50-22," the decommissioning plan for the retired test reactor facility on the Waltz Mill site. CBS is the licensee for the retired test reactor facility at Waltz Mill. The NRC Staff is now reviewing whether CBS's license amendment application regarding its own Decommissioning Plan, which incorporates the cleanup criteria that were approved by NRC and made part of Westinghouse's materials license, is complete and acceptable for docketing.

CBS and Westinghouse are two adversarial licensees embroiled in a commercial dispute at Waltz Mill. The dispute centers on the completion of decommissioning of CBS's retired test reactor facility and the remediation of radiological contamination in other facilities, soils, and groundwater at Waltz Mill. The commercial dispute is currently before an American Arbitration Association Panel (Arbitration Panel), consisting of the Honorable Patricia M. Wald, Gerald Charnoff, Esq., and the Honorable Steven S. Honigman.

## II. BACKGROUND

For a complete factual background on the complicated procedural history of this commercial dispute that ultimately brought the remediation criteria question before the Arbitration Panel and the Commission, we rely on the Initial Arbitration Opinion and Order issued on September 14, 2004, by the Arbitration Panel, summarized below. *See Initial Arbitration Opinion and Order*, Westinghouse Electric Company LLC, Claimant, and Viacom (now CBS), Respondent, September 14, 2004 (ADAMS Accession No. ML062850506); *see also* note 1, *supra*, for the pertinent history of test reactor and materials license holders at Waltz Mill.

In the 1950s, Westinghouse Electric Corporation was licensed by the Atomic Energy Commission (AEC) to build and operate a nuclear test reactor on the Waltz Mill site under an AEC-issued test reactor license, known as the TR-2 license. A test reactor accident significantly contaminated portions of the Waltz Mill site in 1960, resulting in the shutdown of the test reactor in 1962. The next year, the AEC amended the test reactor license to authorize the licensee to possess the test reactor and related radioactive material but not to operate the reactor (a possession-only license). In the 1980s, Westinghouse Electric Corporation began to use the Waltz Mill site for its nuclear services business. To do so, Westinghouse Electric Corp. obtained from the NRC the SNM-770 materials license, which

authorized it to possess and use radioactive materials at Waltz Mill, except at the reactor facilities covered by the test reactor possession-only license.

Because Waltz Mill still contained significant soil contamination that potentially created offsite groundwater contamination, the NRC placed it on its Site Decommissioning Management Plan in 1990. This placement required Westinghouse Electric Corporation to conduct a series of specific actions, which resulted in Westinghouse Electric Corporation's submitting the SNM-770 Remediation Plan to the NRC to address the remediation of the contaminated soils and the retired facilities covered by the materials license. The SNM-770 Remediation Plan stated that it was not a decommissioning plan because Westinghouse Electric Corporation planned to continue licensed nuclear services operations at the site.

In July 1997, Westinghouse Electric Corporation submitted the TR-2 Decommissioning Plan to the NRC to address the activities necessary in order to terminate the test reactor license, such as removal of the internal contents of the remaining reactor vessel, the reactor vessel, and the biological shield. When that part of the test reactor decommissioning was complete, the residual radioactive material and facilities were to be transferred to the SNM-770 materials license (so that radioactive materials would be under NRC license at all times) before Westinghouse Electric Corporation's test reactor license could be terminated.

Up to this point, both the materials and the test reactor licenses were held by the same owner (the "old" Westinghouse Electric Corporation). A name change occurred in December 1997, when Westinghouse Electric Corporation acquired CBS and changed the name of the corporate entities involved in the Waltz Mill activities and licenses to CBS. (*See note 1, supra*, for complete license identification and history). Meanwhile, in early 1998, *before the NRC had approved either the SNM-770 Remediation Plan or the TR-2 Decommissioning Plan*, CBS (so-called now because when Westinghouse Electric Corporation acquired CBS in late December 1997, Westinghouse changed the name of the corporate entities involved in the Waltz Mill activities and licenses to CBS) decided to sell its Energy Systems Business Unit. In May 1998, CBS began negotiations with a business consortium consisting of British Nuclear Fuels Ltd. and Morrison Knudsen Corporation (hereinafter referred to as BNFL) for the sale of its interests in both the materials and test reactor-licensed facilities at Waltz Mill. Negotiations for the CBS sale of both the materials and test reactor-licensed facilities to BNFL (now Westinghouse Electric Company LLC and hereinafter referred to as "Westinghouse") stalled because Westinghouse was only interested in acquiring the nuclear services business at Waltz Mill, not the test reactor and retired facilities. At first, Westinghouse declined to take the retired test reactor structures, material, and equipment because they were not part of the ongoing nuclear services business Westinghouse was primarily interested in acquiring; Westinghouse was evidently reluctant to assume responsibilities for the size, costs, and uncertainties involved with remediating the retired facilities.

But CBS wanted Westinghouse to acquire all of the facilities at Waltz Mill, including facilities covered by the test reactor license. To effect a sale of the Waltz Mill site, CBS attorneys proposed that if Westinghouse agreed to take the entire Waltz Mill site, including the test reactor and other retired facilities, CBS would complete the remediation of the facilities in accord with the test reactor Decommissioning Plan and the SNM-770 Remediation Plan, whatever the remediation conditions turned out to be, once they received NRC approval. During the negotiations, CBS emphasized that the Plans before the NRC had not yet been approved and were not designed to decontaminate the retired facilities to the unrestricted release standard; rather, the Plans proposed a partial remediation: CBS was to decontaminate the facilities to the point where they could be used for future licensed activities under the SNM-770 materials license (to be acquired by Westinghouse), with final decommissioning of these facilities to be the responsibility of Westinghouse when it ceased licensed activities at the site and sought termination of its SNM-770 materials license.

The Westinghouse attorneys accepted this CBS proposal, saying the proposed compromise got the company “where it needed to go, which was to have the benefit of such parts of Waltz Mill as were involved in the service business, and have the legacy [contamination] taken care of by the predecessor.” *See* Arbitration Opinion, para. 9, at 9. Westinghouse and CBS attorneys ultimately agreed upon compromise language that became section 8.1(a) of the Asset Purchase Agreement, an agreement that the parties entered into on June 25, 1998, effective March 22, 1999. At the time of the Agreement, CBS had submitted the plans for approval, had hired a remediation contractor to do some preliminary work under specific NRC approvals, and was in communication with the NRC Staff about the ultimate criteria to be used in the remediation. The attorneys on both sides who negotiated the Agreement had no detailed understanding of the Plans or the content of discussions between the NRC Staff and CBS employees at Waltz Mill, other than that the ultimate remediation standard CBS would be required to meet would be whatever NRC approved in the Plans.

Upon execution of the Agreement, CBS applied to the NRC to transfer the SNM-770 materials license to Westinghouse. Included in that application was a letter — the language of which had been negotiated between Westinghouse and CBS — stating that CBS had agreed to remediate the retired Waltz Mill facilities “as may be required by and are in accordance with approvals it is currently seeking” under the SNM-770 Remediation Plan submitted to the NRC. Arbitration Opinion, para. 13, at 11. The letter asked NRC to rely on CBS both to complete remediation of the retired facilities and to acknowledge that CBS would have the primary responsibility for dealing with NRC about completion of remediation activities involving the retired facilities. The letter said CBS would remain financially responsible for the remediation activities for the retired

facilities until the work was complete and the NRC had approved completion of the plans.

The NRC authorized the transfer of the SNM-770 materials license from CBS to Westinghouse on March 10, 1999, but modified some portions of CBS's proposed terms. The NRC recognized the contractual agreement between the two companies, including CBS's agreement to retain financial responsibility for decommissioning certain facilities associated with the materials license, but said it would hold Westinghouse, as the new materials licensee, "responsible for all requirements and conditions of its license, "including financial responsibility for decommissioning." *Id.*, para. 14, at 12. The NRC agreed to keep CBS informed on all decontamination and decommissioning matters related to the materials license now transferred to Westinghouse. CBS and Westinghouse filed the letters of credit and standby trusts with the NRC to provide the requisite financial assurances.

Before the NRC gave final approval to the decommissioning and remediation plans, NRC told CBS that remediation of the retired facilities could be performed safely under the existing SNM-770 materials license as long as CBS provided "specific criteria for these retired areas based upon proposed future use of areas." *Id.*, para. 18, at 13. In response to the requested "specific criteria," CBS proposed a partial remediation standard for the retired facilities of "4x" — or four times the amount of radioactive contamination specified in NRC Regulatory Guide 1.86 as acceptable for decommissioning to unrestricted status — before transfer to Westinghouse. CBS's 4x proposal was provided to the NRC in an attachment to a letter dated June 19, 1998, and titled "Submittal of Additional Information To Support Application for Approval of Remediation Plan" (June 19, 1998 letter).<sup>2</sup> The NRC accepted the remediation criteria set forth in the June 19, 1998 letter as a revision to the criteria in the original SNM-770 Remediation Plan, affirmed those criteria in an August 21, 1998 letter, and accepted them as an approval of the revised section of the Plan. The approval criteria were incorporated into Amendment # 21 to the SNM-770 materials license on January 19, 2000.

The partial remediation addressed in the criteria permitted future licensed activity, not decommissioning; decommissioning was to occur at the cessation of all licensed Waltz Mill activities at some future time, when Westinghouse, in accord with commitments in place concerning the test reactor Decommissioning Plan and the materials license Remediation Plan, agreed to decontaminate the

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<sup>2</sup>The Arbitration Panel identified the letter as being dated June 18, 1998, *see* para. 19, at 13; and the attachment to the letter as being dated June 19, 1998, *see* para. 19, at 14, and then in the next paragraph dated both the letter and attachment as June 19, 1998. For simplicity's sake, the letter and remediation criteria provided in the attachment to the letter hereinafter will be referred to as the June 19, 1998 criteria, or the June 19, 1998 letter.

site to an unrestricted release criteria under the requirements of the License Termination Rule.<sup>3</sup>

With commitments in place concerning the TR-2 Decommissioning Plan and the SNM-770 Remediation Plan, CBS undertook extensive remediation of the retired facilities at the site, completing removal of the reactor internals according to the test reactor Decommissioning Plan. But the task of remediating certain structures and equipment of the retired facilities for continued licensed activity — to meet the so-called “4×” standard that CBS had itself proposed for such areas in the attachment to the June 19, 1998 letter and that NRC had approved — proved more difficult, and more expensive, than anticipated. Despite NRC’s approval of 4× as the cleanup standard to be applied to the retired facility and materials, CBS then took the position that the criteria establishing a “4×” decontamination standard for retired facilities and structures for future licensed use was simply a “goal” and that the proper standard to be applied was ALARA (As Low As Reasonably Achievable), which would permit higher levels of surface contamination to remain in remediated surfaces or equipment within the retired buildings.

In early 2001, CBS halted the remediation efforts, asserting that the June 19, 1998 criteria had been met. Westinghouse did not agree. With the parties at an impasse and CBS’s work at a halt, Westinghouse invoked the binding arbitration clause provided in the Asset Purchase Agreement as the means to resolve the parties’ dispute about whether CBS had satisfied its remediation obligations under section 8.1(a) of the Agreement.

### **III. ISSUES PRESENTED TO THE ARBITRATION PANEL AND THE COMMISSION**

#### **A. Arbitration Panel Opinion**

The Arbitration Panel, in its September 14, 2004 Arbitration Opinion (ADAMS Accession No. ML062850506), found that the “plain language” of criteria set forth in section 8.1(a) regarding remediation criteria for surface and equipment decontamination intended for future use was 4×, thus agreeing with Westinghouse and rejecting CBS’s interpretation that the standard was ALARA. *Id.*, para. 37, at 22. The Panel agreed with Westinghouse that NRC’s August 21, 1998 approval of the remediation criteria contained in the attachment to the June 19, 1998 letter was an “approval” within the meaning of section 8.1(a) of the Agreement. *Id.*, para. 35, at 21. These approvals permitted the remediation to begin and made the SNM-770 Remediation Plan, as revised through various documents submitted to

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<sup>3</sup> See 10 C.F.R. Part 20, Subpart E, which is referenced in 10 C.F.R. § 50.82(b)(6).



the NRC, part of the license in Amendment #21 in January 2000. Thus, CBS was obligated to fulfil its obligations under the June 19, 1998 remediation criteria — obligations requiring CBS to decontaminate all surfaces or equipment in the retired facilities that may be used for future licensed activities under the license to a “4×” standard — “unless and until the criteria are modified by the NRC or the NRC grants some form of relief from them.” *Id.*

Where CBS and Westinghouse are in agreement is that many surfaces in the retired facilities have not yet been remediated to the 4× standard permitting future licensed activity. CBS claims to have spent \$93 million in cleanup efforts where, as cited by NRC inspectors, removal efforts through a process called “scabbling” eliminated some but not all the contamination in the top layers of concrete, resulting in many “as left” conditions falling short of the 4× standard.

#### **B. Arbitration Panel’s Request to NRC**

At the conclusion of its findings on the Asset Purchase Agreement, the Arbitration Panel turned to the NRC Staff for a determination of the regulatory status between the licensees before it assigned economic responsibility to either licensee regarding any breach of remediation obligations in section 8.1(a) of the Agreement. In doing so, the Arbitration Panel considered, on the one hand, CBS’s testimony that the contamination was much deeper in the concrete in some areas than initial characterization studies had shown, and, on the other hand, Westinghouse’s expert testimony asserting that the best way to achieve the 4× standard in certain buildings would be to demolish them. In light of the unexpected cleanup data, the Panel was unwilling to hold CBS to remediating all surfaces in the retired facilities to a 4× standard without ensuring this would satisfy NRC requirements. The Arbitration Panel posed two questions to the NRC, seeking NRC guidance “about the scope of the NRC’s regulatory requirements — the extent of remediation that is required at this intermediate phase of the SNM-770 license, when the Waltz Mill site continues to be used for licensee activities — and whether that required remediation has been fully performed.” *Id.*, para. 52, at 27. “The critical point for us is that the NRC has the regulatory responsibility and authority to decide the extent to which the retired facilities should be remediated at this time and what, if any, additional remediation may be deferred until final decommissioning.” *Id.*

In a letter to the NRC dated October 8, 2004, the Arbitration Panel asked the NRC to address the following two questions:

- a. Whether the TR-2 Decommissioning Plan has been satisfactorily completed. If not, what further remediation remains to be done; and
- b. Whether the SNM-770 Plan has been satisfactorily completed and, if not, what further remediation remains to be done.

### **C. NRC Response to Arbitration Panel**

Upon receipt of the Arbitration Panel's request, the NRC Staff allowed both CBS and Westinghouse to make additional written submissions to address their respective positions on the disagreement, and allowed each side to file replies to those submittals. The NRC Staff reviewed the Arbitration Panel's Initial Opinion and Order, the licensees' followup submissions, and official NRC records.

The NRC Solicitor John Cordes, in a March 17, 2006 letter to Westinghouse and CBS attorneys, provided the NRC Staff views on the two Arbitration Panel questions. The Staff concluded that CBS's test reactor Decommissioning Plan had not been satisfactorily completed. The Staff said that the CBS Decommissioning Plan approved by the NRC provided that decommissioning of the retired test reactor facility would only be considered complete when the decommissioning requirements described in the Decommissioning Plan for the retired test reactor were met, and residual radioactive material and the retired test reactor structures were transferred to the materials license for further remediation. The Staff said that removal of the reactor components and related equipment and materials required by the Decommissioning Plan had been completed, even though portions of the biological shield remained (which had been an issue between the two licensees), but that the residual radioactive material and the retired test reactor structures and equipment had not been transferred to the materials license for further remediation. Therefore, the Staff said, what is necessary to complete the Decommissioning Plan is: (1) the required documentation for transfer of the remaining residual radioactivity and the retired test reactor facilities to Westinghouse's materials license; and (2) issuance of an amendment to the Westinghouse materials license that transfers residual radioactivity from the retired test reactor structures, materials, and equipment onto that license. To do this, the Staff said, Westinghouse should file a license application to amend its materials license to transfer the retired test reactor structures and, at that time, provide an estimate of the types and quantities of radioactive materials. "If necessary, possession limits in the license may need to be increased to accommodate the increased radioactive material inventory," the Staff said.

In response to the question whether Westinghouse's Remediation Plan regarding the materials license had been successfully completed, the NRC Staff evaluated whether the remediation criteria it had previously approved had been met. The NRC Staff response stated that it could not make that determination without more information about the extent of contamination remaining in the retired structures, emphasizing that such information would have to be submitted by Westinghouse, the licensee, in an application to accept the transfer of any residual radioactive material remaining in the retired test reactor facilities to the materials license held by Westinghouse. The Staff said that the application must

include an estimate of the types and quantities of radioactive materials so that the quantities could be delineated in the amended materials license.

#### **D. NRC Staff's Recommended Path Forward for Licensees**

The NRC Staff provided "Path Forward" guidance directly to each licensee, laying out NRC's procedural and substantive expectations regarding the anticipated Westinghouse license amendment application in a March 17, 2006 letter sent to both CBS and Westinghouse.

The Path Forward stated that because the retired test reactor component and equipment removal required by the CBS Decommissioning Plan were complete, the next regulatory action expected by NRC was receipt of the application from Westinghouse — not CBS — for an amendment to Westinghouse's materials license for the transfer of any residual radioactive materials remaining in the CBS-licensed retired facilities. Changes, if any, to the remediation criteria could then be made in the context of a license amendment proceeding.

The Path Forward guidance in one part focused on the anticipated materials license amendment application. The guidance pointed out that under the current Westinghouse materials license Remediation Plan, a process existed whereby detailed work procedures for each remediation activity would be evaluated by the NRC Staff to assess consistency with the generalized remediation methods described in the Plan. The guidance said that if necessary the licensee could seek NRC approval prior to performance of work. To date this approach has resulted in NRC reviews of specific remediation procedures of the soils, groundwater, and certain facilities and materials transferred to the materials license. The Staff said this same pre-approval approach would be acceptable for any further remediation of the test reactor facilities and materials transferred to the materials license. The Staff said it would be unnecessary to develop an entirely new Remediation Plan for the materials license if demolition and removal of equipment and buildings were to be proposed as part of the further remediation because such activity would be consistent with the objectives and requirements already approved in the Remediation Plan.

The Path Forward further stated that, among other things, the Westinghouse license amendment application should also include changes, if any, to descriptions of remedial activities in the Remediation Plan, details of specific remedial work procedures to be employed, and proposed changes to any methodologies approved by the NRC in the Remediation Plan. The guidance stated that the

NRC anticipates that the license amendment application would address areas of uncertainty that have been discussed in the Arbitration Panel's Initial Opinion and Order, such as the future uses of the facilities/structures, the schedule for finishing

the decommissioning, and the methods to be employed to complete remediation (e.g., if demolition of buildings and structures will be used).

The Path Forward also explained the procedures NRC expected to be followed in order for termination of the retired test reactor license to occur. The guidance provided that NRC would terminate CBS's test reactor license when (1) the amendment to Westinghouse's materials license is issued, which would ensure that radioactive materials remaining in the retired test reactor facility are controlled under an NRC license at all times; and (2) when NRC's license termination requirements for reactors have been satisfied.<sup>4</sup>

#### **E. CBS Request to NRC To Amend Remediation Criteria**

Despite the NRC's Staff's urging that the next regulatory action should emanate from Westinghouse, Westinghouse has not yet applied to the NRC for any action regarding its materials license.

Without waiting for Westinghouse action, CBS submitted two requests simultaneously to the NRC, one of which is the subject of this Order. Each request involves CBS's continuing efforts to seek relief from the remediation criteria as they apply to buildings within the purview of CBS's test reactor license and to the same buildings once they come within the purview of Westinghouse's materials license upon transfer to Westinghouse (if such a transfer occurs).

In its first submission, dated July 12, 2006, CBS, as the retired test reactor licensee, asked that NRC docket its "Application To Amend TR-2 Final Decommissioning Plan, Rev. No. 1, NRC Docket No. 50-22." This submittal seeks to revise the June 19, 1998 building remediation criteria (incorporated into the CBS Decommissioning Plan) in the retired facilities "so that they conform to current NRC practice and policy which encourage a risk-informed approach to nuclear

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<sup>4</sup> As the Path Forward guidance notes, Westinghouse has agreed to meet the License Termination Rule (LTR) requirements at the Waltz Mill site for all of the residual materials connected with operations (including the materials transferred from the test reactor license) when it seeks termination of its materials license once all activity has ceased at the site. Therefore, in order to terminate the test reactor license and implement Westinghouse's current commitment to meet the LTR at a later time than normally required by NRC regulations, the NRC Staff intends to consider an exemption to LTR's requirements, document the exemption in the SER supporting the termination of the test reactor license, and include appropriate conditions in Westinghouse's amended materials license to preserve the commitment. The guidance suggested that the licensees make joint application for the exemption or, in the alternative, CBS should apply for the exemption, with concurrence or a supporting affidavit from Westinghouse regarding its willingness to accept the facility in the condition as left. Attachment to March 17, 2006 Letter at 6, ADAMS Accession No. ML060750730.

decommissioning and remediation.’’ *Id.* The NRC Staff has acknowledged receipt of this application and is reviewing it for completeness before docketing it.<sup>5</sup>

In its second filing dated the same day, CBS asked Region I, where Waltz Mill is located, to accept for docketing its submission regarding *Westinghouse’s* materials license titled ‘‘Order Regarding NRC License No. SNM-770, NRC Docket No. 070-00698 or, in the Alternative, for an Amendment to SNM-770.’’ CBS requested that at the conclusion of its requested application proceeding regarding CBS’s own license, should NRC grant some or all of its requested changes to the June 19, 1998 remediation criteria as they apply to section 1.2 of CBS’s Final Decommissioning Plan, Rev. 2 (which ultimately reference the criteria in the June 19, 1998 letter), then the NRC would issue a ‘‘declaratory order’’ making those changes applicable to the retired facilities covered by Westinghouse’s materials license and Remediation Plan as well.

Alternatively, should NRC decline to issue the requested ‘‘declaratory order,’’ CBS asked that its letter be treated as an application to amend the June 19, 1998 criteria as incorporated into the materials license to the extent that the criteria define CBS’s remediation responsibilities. Under this alternate proposal, CBS requested an exemption under 10 C.F.R. § 30.11 from the requirements of 10 C.F.R. § 30.38 (‘‘Applications for amendment of a license . . . shall specify the respects in which the *licensee* desires its license to be amended and the grounds for the amendment’’ (emphasis added)).

The next day, in a letter dated July 13, 2006, CBS advised NRC’s Executive Director of Operations, Luis D. Reyes, of its July 12 filings. In the letter, CBS acknowledged that ‘‘The circumstances where two NRC licensees share decommissioning and remediation responsibilities for the same buildings and

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<sup>5</sup>In sum, CBS objections to the June 19, 1998 remediation criteria are that the criteria: are based on outdated measurement capabilities unrelated to uniform doses or risks; are too costly and not reasonably achievable, given the condition of the retired facilities; are more restrictive than the ALARA standard currently permitted under Westinghouse’s materials license applicable to those areas where radioactivity remained on a surface despite repeated decontamination attempts to remove it; are too restrictive, given that ALARA remediation objectives, along with procedures and engineering controls, would assure the applicable exposure limits relating to occupational exposures are met; are inconsistent with NRC’s current risk-informed approach to decommissioning, which already allows dose-based assessments and realistic exposure scenarios that permit contamination in excess of allowable limits under some circumstances; lack merit because the ‘‘as is’’ condition of the retired facilities provides no risk to public health and safety and would not affect the objective of Westinghouse’s Remediation Plan to meet the terms of the License Termination Rule regarding the ultimate radiological condition when all activity has ceased at Waltz Mill, and at that time Westinghouse must meet the decommissioning standard of the License Termination Rule. *See* CBS’s ‘‘Application for Order Regarding NRC License No. SNM-770, NRC Docket No. 070-00698 or in the Alternative, for an Amendment to SNM-770,’’ at 4-7, July 12, 2006; *see also* CBS’s ‘‘Application To Amend TR-2 Final Decommissioning Plan, Rev. No. 1, NRC Docket No. 50-22,’’ at 3-6, July 12, 2006 (ADAMS Accession No. ML062140476).

areas on the same site is unique in NRC practice and has hindered progress.’’ CBS requested consideration of the two applications ‘‘on their safety merits’’ and asked for disposition of its docketing requests within 30 days, adding that a negative response to one or both of the requests ‘‘would entitle CBS to request further administrative and judicial review under section 189 of the Atomic Energy Act.’’

On August 9, 2006, the NRC Staff declined to accept CBS’s application on Westinghouse’s license for docketing because ‘‘CBS is not the holder of License No. SNM-770 and, therefore, cannot apply for an amendment to that license.’’

CBS responded on August 25, 2006, by filing the Petition for Hearing, now before the Commission, regarding the NRC Staff’s refusal to docket its application with respect to Westinghouse’s materials license. CBS requests a hearing because the ‘‘denial of this application directly affects and harms CBS’s interests . . . because it leaves in place remediation criteria for SNM-770 structures that are costly, arbitrary, and unnecessary for safety, thereby harming CBS’s interests as the owner of the site, as the co-licensees on the site, as the obligor under the letter of credit (CBS maintains a letter of credit for \$10,401,000 and a standby trust agreement to support the partial remediation), and as the effective obligor under the SNM-770 Remediation Plan.’’

At the heart of its requests, CBS asks that any changes to the June 19, 1998 remediation criteria approved by the NRC Staff for its retired test reactor facility under the license ‘‘would apply equally to CBS’s remedial action obligations in regard to structures on the same Site within the scope of Westinghouse’s SNM-770 license.’’ The petition essentially restates CBS’s arguments presented in its July 12, 2006 application regarding Westinghouse’s license, this time stating as ‘‘contentions’’ its requests for a ‘‘declaratory order’’ or, in the alternative, consideration of issuance of an exemption by the NRC Staff permitting NRC to amend a license held by another licensee. CBS stated it would consider withdrawing its hearing request if the NRC Staff decided that any approved changes to the remediation criteria in CBS’s parallel application to amend its test reactor license would apply to CBS’s remedial obligations with respect to structures covered by Westinghouse’s materials license.

#### **F. Westinghouse Comment on CBS Petition for Hearing**

Westinghouse filed ‘‘Comments’’ opposing CBS’s hearing request regarding its materials license in a submittal to the NRC on September 19, 2006. Westinghouse asserted that the CBS petition was ‘‘without precedent,’’ that no pending proceeding was underway in which CBS could seek intervention, and that CBS had no ‘‘standing’’ to amend the materials license held by Westinghouse because a claim of economic injury was insufficient to meet standing requirements.

CBS responded to the Westinghouse ‘‘Comments’’ on September 25, 2006,

arguing that Westinghouse's "Comments" on CBS's petition for a hearing should be struck for failure to follow proper channels to petition for leave to intervene in the CBS proceeding under 10 C.F.R. § 2.309; that the NRC Staff's denial of its July 12 Application for an Order or To Amend Westinghouse's license initiated a "proceeding" within the meaning of section 189a(1)(A) of the Atomic Energy Act; that CBS had "standing" to request a hearing on Westinghouse's license because of the overlap of licensed responsibilities and shared financial risks at the site; and that CBS, as applicant for a hearing and not an intervenor, need not submit admissible contentions as required under 10 C.F.R. § 2.309(f), Westinghouse assertions notwithstanding.

#### IV. ANALYSIS

This case, at its core, is a commercial contractual dispute between regulated parties. The Commission will not be drawn into such disputes, absent a concern for the public health and safety or the common defense and security, except to carry out its responsibilities to act to enforce its licenses, orders, and regulations.

In its regulatory posture, this case involves two filings by CBS: a CBS application, now under review by the NRC Staff, asking that the NRC amend the CBS license to permit more relaxed cleanup standards than are now allowed under that license; a second CBS application, essentially seeking to have any changes the Commission permits for the retired facilities now under the CBS license to extend as well to those same facilities when they are transferred to Westinghouse and become subject to Westinghouse's materials license, as contemplated by the commercial agreement entered into by the parties. When the parties entered an agreement that the CBS facilities would be cleaned up in accordance with the NRC requirements, both parties understood the criteria were to be approved by NRC at some date following the date the two licensees actually entered the Asset Purchase Agreement. The criteria NRC would find satisfactory for cleaning up the retired facilities were not tied to a specific date or time or standard when the parties signed the commercial agreement. Sometime after signing the agreement, CBS proposed a 4× standard to satisfy an NRC request for "specific criteria." That 4× standard would later prove unfortunate for CBS in that achieving it turned out more costly and difficult than anticipated at the time it was set. Nevertheless, that was the standard put forth to the NRC, which NRC accepted and approved.

Now CBS, in the July 12, 2006 application to amend its own Decommissioning Plan, Rev. No. 1 currently before the Staff, asks NRC to review what criteria should apply to the retired facilities and to relax the 4× cleanup standard to the less stringent ALARA requirement. The Staff is currently conducting a sufficiency review of CBS's request for its own license. The Staff denied the CBS application for an order regarding the Westinghouse license, causing CBS

to then file a “Petition for Hearing” on the denial. CBS’s petition essentially couched in “contention” terms the same two approaches (declaratory order or, alternately, license amendment) raised in its earlier request to NRC to relax the cleanup standards in the Westinghouse license, should NRC grant CBS’s license amendment request for its own license.

Based upon our review of these facts we harbor substantial doubt whether CBS has filed a request entitling them to a hearing which could result in either the declaratory order or, alternately, the license amendment they seek. However, the Commission need not resolve those issues now. The NRC Staff has pending before it the CBS request to relax the decommissioning criteria for its own license. Staff action may obviate the need for the Commission to address the hearing request presented by CBS for the Westinghouse license. Additionally, the differences between the two licensees in their ongoing commercial dispute may be resolved in binding arbitration before the Arbitration Panel, causing CBS to withdraw its request to amend the Westinghouse license. Therefore, we are holding the hearing request in abeyance. The Commission directs the NRC Staff to notify the Commission when it has issued a decision on CBS’s July 12, 2006 application to amend its own TR-2 Final Decommissioning Plan. Once that decision has been rendered, the Commission can revisit the question presented by CBS’s application for a declaratory order or, in the alternative, an amendment to Westinghouse’s SNM-770 materials license. The Commission also directs attorneys representing CBS and Westinghouse in the commercial dispute before the Arbitration Panel to notify the Commission of any pertinent action by the Panel that could be relevant to a Commission decision on the hearing request.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 29th day of March 2007.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before the Licensing Board:**

**G. Paul Bollwerk, III, Chairman**  
**Nicholas G. Trikouros**  
**Dr. James F. Jackson**

**In the Matter of**

**Docket No. 52-011-ESP**  
**(ASLBP No. 07-850-01-ESP-BD01)**

**SOUTHERN NUCLEAR OPERATING  
COMPANY**

**(Early Site Permit for Vogtle  
ESP Site)**

**March 12, 2007**

In this 10 C.F.R. Part 52 proceeding regarding the application of Southern Nuclear Operating Company (SNC) for an early site permit (ESP) for an additional two reactors at the Vogtle Electric Generating Plant site, ruling on a petition filed jointly by five public interest organizations seeking to intervene to contest the SNC ESP request, the Licensing Board concludes that, having established the requisite standing and proffering two admissible environmental contentions, each of the Petitioners is admitted as a party to the proceeding.

**RULES OF PRACTICE: STANDING TO INTERVENE**

In determining whether an individual or organization should be granted party status in a proceeding based on standing “as of right,” the agency has applied contemporaneous judicial standing concepts that require a participant to establish (1) it has suffered or will suffer a distinct and palpable injury that constitutes injury-in-fact within the zones of interests arguably protected by the governing statutes (e.g., the Atomic Energy Act of 1954 (AEA), the National Environmental

Policy Act of 1969 (NEPA)); (2) the injury is fairly traceable to the challenged action; and (3) the injury is likely to be redressed by a favorable decision. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996).

**RULES OF PRACTICE: STANDING TO INTERVENE  
(PRESUMPTION BASED ON GEOGRAPHIC PROXIMITY)**

In cases involving the possible construction or operation of a nuclear power reactor, proximity to the proposed facility has been considered sufficient to establish the requisite standing elements. *See Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989).

**RULES OF PRACTICE: STANDING TO INTERVENE  
(REPRESENTATIONAL)**

When an entity seeks to intervene on behalf of its members, that entity must show it has an individual member who can fulfill all the necessary standing elements and who has authorized the organization to represent his or her interests. *See Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 (2000).

**RULES OF PRACTICE: STANDING TO INTERVENE  
(CONSTRUCTION OF PETITION)**

In assessing a petition to determine whether these elements are met, which a presiding officer must do even though there are no objections to a petitioner's standing, the Commission has indicated that a presiding officer is to "construe the petition in favor of the petitioner." *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995).

**RULES OF PRACTICE: CONTENTIONS (SPECIFICITY AND BASIS)**

Section 2.309(f) of the Commission's rules of practice specifies the requirements that must be met if a contention is to be deemed admissible. Specifically, a contention must provide (1) a specific statement of the legal or factual issue sought to be raised; (2) a brief explanation of its basis; (3) a concise statement of the alleged facts or expert opinions, including references to specific sources and documents, that support the petitioner's position and upon which the petitioner intends to rely at hearing; and (4) sufficient information demonstrating that a

genuine dispute exists in regard to a material issue of law or fact, including references to specific portions of the application that the petitioner disputes, or in the case when the application is alleged to be deficient, the identification of such deficiencies and supporting reasons for this belief. *See* 10 C.F.R. § 2.309(f)(1)(i), (ii), (v), and (vi). In addition, the petitioner must demonstrate that the issue raised in the contention is both “within the scope of the proceeding” and “material to the findings the NRC must make to support the action that is involved in the proceeding.” *Id.* § 2.309(f)(1)(iii)-(iv). Failure to comply with any of these requirements is grounds for dismissing a contention. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); *see also Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

#### **RULES OF PRACTICE: CONTENTIONS (CHALLENGE OF COMMISSION RULE)**

An adjudication is not the proper forum for challenging applicable statutory requirements or the basic structure of the agency’s regulatory process. *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20, *aff’d in part on other grounds*, CLI-74-32, 8 AEC 217 (1974). Similarly, a contention that attacks a Commission rule, or which seeks to litigate a matter that is, or clearly is about to become, the subject of a rulemaking, is inadmissible. *See* 10 C.F.R. § 2.335; *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85, 89 (1974). This includes contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking. *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 159 (2001); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-93-1, 37 NRC 5, 29-30 (1993); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1656 (1982); *see also Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 251 (1996); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), LBP-91-19, 33 NRC 397, 410, *aff’d in part and rev’d in part on other grounds*, CLI-91-12, 34 NRC 149 (1991). By the same token, a contention that simply states the petitioner’s views about what regulatory policy should be does not present a litigable issue. *See Peach Bottom*, ALAB-216, 8 AEC at 20-21 & n.33.

**RULES OF PRACTICE: CONTENTIONS (SCOPE OF PROCEEDING)**

All proffered contentions must be within the scope of the proceeding as defined by the Commission in its initial hearing notice and order referring the proceeding to the Licensing Board. *See* 10 C.F.R. § 2.309(f)(1)(iii); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-00-23, 52 NRC 327, 329 (2000); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790-91 (1985). As a consequence, any contention that falls outside the specified scope of the proceeding must be rejected. *See Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979).

**RULES OF PRACTICE: CONTENTIONS (SUPPORTING INFORMATION OR EXPERT OPINION)**

It is the petitioner's obligation to present factual information and/or expert opinion necessary to support its contention. *See* 10 C.F.R. § 2.309(f)(1)(v); *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305, *vacated in part and remanded on other grounds*, CLI-95-10, 42 NRC 1, *and aff'd in part*, CLI-95-12, 42 NRC 111 (1995). While a Board may appropriately view a petitioner's supporting information in a light favorable to the petitioner, failure to provide such information regarding a proffered contention requires that the contention be rejected. *See Palo Verde*, CLI-91-12, 34 NRC at 155. In this connection, neither mere speculation nor bare or conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention. *See Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). If a petitioner neglects to provide the requisite support for its contentions, it is not within the Board's power to make assumptions of fact that favor the petitioner, nor may the Board supply information that is lacking. *See Palo Verde*, CLI-91-12, 34 NRC at 155; *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 422 (2001); *Georgia Tech Research Reactor*, LBP-95-6, 41 NRC at 305.

**RULES OF PRACTICE: CONTENTIONS (SUPPORTING INFORMATION OR EXPERT OPINION)**

Providing any material or document as a basis for a contention, without setting forth an explanation of its significance, is inadequate to support the admission of the contention. *See Fansteel*, CLI-03-13, 58 NRC at 205. Along these lines, any supporting material provided by a petitioner, including those portions of the

material that are not relied upon, is subject to licensing board scrutiny. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 (1996), *rev'd in part on other grounds*, CLI-96-7, 43 NRC 235 (1996). Thus, the material provided in support of a contention will be carefully examined by a licensing board to confirm that it does indeed supply an adequate basis for the contention as asserted by the petitioner. *See Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 48 (1989), *vacated in part on other grounds and remanded*, CLI-90-4, 31 NRC 333 (1990).

#### **RULES OF PRACTICE: CONTENTIONS (SUPPORTING INFORMATION OR EXPERT OPINION)**

Simply attaching material or documents as a basis for a contention, without setting forth an explanation of that information's significance, is inadequate to support the admission of the contention. *See Fansteel*, CLI-03-13, 58 NRC at 204-05. Along these lines, any supporting material provided by a petitioner, including those portions of the material that are not relied upon, is subject to Board scrutiny. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 (1996), *rev'd in part on other grounds*, CLI-96-7, 43 NRC 235 (1996). Thus, the material provided in support of a contention will be carefully examined by the Board to confirm that on its face it does supply an adequate basis for the contention. *See Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 48 (1989), *vacated in part on other grounds and remanded*, CLI-90-4, 31 NRC 333 (1990).

#### **RULES OF PRACTICE: CONTENTIONS (MATERIALITY)**

To be admissible, the regulations require that all contentions assert an issue of law or fact that is material to the outcome of a licensing proceeding, meaning that the subject matter of the contention must impact the grant or denial of a pending license application. *See* 10 C.F.R. § 2.309(f)(1)(iv). This requirement of materiality often dictates that any contention alleging deficiencies or errors in an application also indicate some significant link between the claimed deficiency and either the health and safety of the public or the environment. *See Yankee Nuclear*, LBP-96-2, 43 NRC at 75-76; *see also Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), LBP-02-23, 56 NRC 413, 439-41 (2002), *petition for review denied*, CLI-03-12, 58 NRC 185, 191 (2003).

#### **RULES OF PRACTICE: CONTENTIONS (CHALLENGE TO LICENSE APPLICATION)**

All properly formulated contentions must focus on the license application in question, challenging either specific portions of or alleged omissions from the application (including the Safety Analysis Report and the Environmental Report) so as to establish that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994); *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992).

#### **RULES OF PRACTICE: CONTENTIONS (SCOPE)**

Although licensing boards generally are to litigate “contentions” rather than “bases,” it has been recognized that “[t]he reach of a contention necessarily hinges upon its terms coupled with its stated bases.” *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988), *aff’d sub nom. Massachusetts v. NRC*, 924 F.2d 311 (D.C. Cir.), *cert. denied*, 502 U.S. 899 (1991); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 379 (2002).

#### **NEPA: ENVIRONMENTAL ANALYSIS (AQUATIC BASELINE)**

A National Environmental Policy Act (NEPA) analysis relating to aquatic impacts must, as a practical matter, have a baseline from which to operate. *See American Rivers v. Federal Energy Regulatory Commission*, 201 F.3d 1186, 1195 n.15 (9th Cir. 2000). It is equally apparent, however, that nothing in the agency’s 10 C.F.R. Part 51 NEPA regulations, *see* 10 C.F.R. § 51.45(b) (environmental report (ER) must contain “description of the environment affected”), or the Staff’s ER preparation guidance regarding providing a description of the local environment, *see* Office of Standards Development, U.S. Nuclear Regulatory Commission [(NRC)], Preparation of [ERs] for Nuclear Power Stations, Regulatory Guide 4.2, at 2-3 to -4 (rev. 2, July 1976) (ADAMS Accession No. ML003739519), indicates exactly how, as a general matter, such a baseline is to be established.

### **NEPA: ENVIRONMENTAL ANALYSIS (BASELINE SCOPE)**

The appropriate scope of the baseline for a project is a functional concept: an applicant must provide enough information and in sufficient detail to allow for an evaluation of important impacts. *See* Office of Nuclear Reactor Regulation, [NRC], “Standard Review Plans for Environmental Reviews for Nuclear Power Plants,” NUREG-1555, at 4.3.2-1 to -2 (Oct. 1999); Office of Nuclear Regulatory Research, [NRC], General Site Suitability Criteria for Nuclear Power Stations, Regulatory Guide 4.7, at 4.7-14 to -15 (rev 2, Apr. 1998) (ADAMS Accession No. ML003739894).

### **NEPA: ENVIRONMENTAL ANALYSIS (NO-ACTION ALTERNATIVE)**

No-action alternative discussions can be brief and can incorporate by reference other sections of an ER discussing the project’s adverse consequences. *See Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 54 (2001) (“[f]or the ‘no action’ alternative, there need not be much discussion”); *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 98 (1998) (“[w]e do not find the [final environmental impact statement’s (FEIS)] incorporation by reference approach unreasonable as such”).

### **NEPA: INDEPENDENT INQUIRY BY FEDERAL AGENCY**

Established case law teaches that, except for its overall NEPA balancing, the NRC can limit its analysis of aquatic impacts to those determined by the Environmental Protection Agency (EPA), *see New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 98 (1st Cir. 1978), when EPA has analyzed an alternative technology extensively and made conclusions as to its suitability.

### **NEPA: ENVIRONMENTAL ANALYSIS (ENVIRONMENTAL JUSTICE)**

The NRC has made a commitment as part of its NEPA review process to strive to reach the environmental justice goals described in Executive Order 12898. *See* 69 Fed. Reg. 52,040, 52,041-42 (Aug. 24, 2004) (final Commission environmental justice policy statement). As the Commission previously has noted in reviewing environmental justice claims, “[a]dverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny.” *Claiborne Enrichment Center*, CLI-98-3, 47 NRC at 106. There are, however, two requirements necessary to implicate this close environmental justice scrutiny. First, support

must be presented regarding the alleged existence of adverse impacts or harm on the physical or human environment. Second, a supported case must be made that these purported adverse impacts could disproportionately affect poor or minority communities in the vicinity of the facility at issue. *See* 69 Fed. Reg. at 52,047.

**NEPA: SUFFICIENCY OF CONTENTIONS (ENVIRONMENTAL JUSTICE)**

The NRC requires that environmental justice contentions be based on the specific characteristics of a particular minority community. *See Claiborne Enrichment Center*, CLI-98-3, 47 NRC at 100.

**RULES OF PRACTICE: CONTENTIONS (SUPPORTING INFORMATION OR EXPERT OPINION)**

It being well established that the Board cannot be expected to sift through reams of data to determine whether a contention is admissible, *see Georgia Tech Research Reactor*, LBP-95-6, 41 NRC at 305; *International Uranium (USA) Corp.* (Receipt of Material from Tonawanda, New York), LBP-98-21, 48 NRC 137, 142 n.7 (1998); *Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1 and 2), LBP-76-10, 3 NRC 209, 216 (1976), a nonselective citation is not consistent with the obligation to provide analyses and expert opinion supporting a contention.

**NEPA: ENVIRONMENTAL ANALYSIS (ENVIRONMENTAL JUSTICE)**

NRC has expressed a commitment to considering cumulative impacts in its environmental justice analysis, making nearby nuclear facility-related harm an appropriate issue to consider cumulatively with any impacts from proposed reactors. *See* 69 Fed. Reg. at 52,042-43.

**NEPA: ENVIRONMENTAL ANALYSIS (ENVIRONMENTAL JUSTICE)**

In accord with the environmental justice executive order, the NRC has obligated itself to address only the disproportionate distribution of “high and adverse” effects in its NEPA analysis. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-20, 56 NRC 147, 154 (2002).



## **NEPA: SUFFICIENCY OF CONTENTIONS (MATERIALITY)**

### **RULES OF PRACTICE: CONTENTIONS (MATERIALITY)**

While one of the central purposes of NEPA is information gathering and disclosure, information immaterial to the proceeding does not necessarily need to be included. *See Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-29, 62 NRC 801, 811 (2005) (“There may, of course, be mistakes in the [draft environmental impact statement (DEIS)], but in an NRC adjudication, it is intervenors’ burden to show their significance and materiality. Our boards do not sit to ‘flyspeck’ environmental documents or to add details or nuances.”); *see also Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002) (“NEPA does not call for examination of every conceivable aspect of federally licensed projects” (internal quotes omitted)).

### **RULES OF PRACTICE: CONTENTIONS (CHALLENGE OF COMMISSION RULE)**

A challenge to an agency rule is not permitted in an agency adjudication. *See* 10 C.F.R. § 2.335(a); *see also Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-07-3, 65 NRC 13, 20 (2007) (contention seeking ER analysis of long-term effects of high-density pool spent fuel storage inappropriately challenges rule-based generic environmental findings for reactor life extension proceedings). The agency’s procedural rules do, however, offer an opportunity to request a waiver or exception to the application of a rule in a particular adjudicatory proceeding. *See* 10 C.F.R. § 2.335(b); *see also Vermont Yankee*, CLI-07-3, 65 NRC at 20.

### **RULES OF PRACTICE: COMMISSION CONSIDERATION OF PROCEDURAL MATTERS**

The Commission has the authority to enter case-specific procedural orders to facilitate the efficient resolution of issues before a licensing board. *See Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-88-9, 28 NRC 567, 569 (1988) (noting “the Commission’s inherent supervisory authority over the conduct of adjudicatory proceedings”); *see also, e.g., Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-3, 59 NRC 10, 16-21 (2004) (establishing general schedule for proceeding).

**NEPA: FINAL ENVIRONMENTAL IMPACT STATEMENT  
(LICENSING BOARD DECISION AS AMENDMENT)**

Any Licensing Board merits litigation-based findings have the effect of amending or supplementing the FEIS. *See Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-06-15, 63 NRC 687, 707 n.91 (2006).

**RULES OF PRACTICE: REOPENING OF PROCEEDINGS**

If admitted contentions are resolved before the FEIS is issued so as to conclude the contested portion of a proceeding, an intervenor (or anyone else) could timely seek to litigate contentions regarding FEIS data or conclusions that differ significantly from the ER or the DEIS. *See* 10 C.F.R. § 2.309(c), (f)(2).

**MEMORANDUM AND ORDER  
(Ruling on Standing and Contentions)**

On August 15, 2006, Southern Nuclear Operating Company (SNC) applied to the Nuclear Regulatory Commission (NRC) for an early site permit (ESP) under 10 C.F.R. Part 52 for an additional two reactors at the Vogtle Electric Generating Plant site near Waynesboro, Georgia. On December 11, 2006, five organizations — the Center for a Sustainable Coast, Savannah Riverkeeper, the Southern Alliance for Clean Energy, the Atlanta Women’s Action for New Directions, and the Blue Ridge Environmental Defense League (hereinafter referred to collectively as Joint Petitioners) — jointly filed a hearing petition seeking to intervene and challenge the ESP application, or more particularly, certain aspects of the SNC Environmental Report (ER).

For the reasons set forth below, we find that each of the Joint Petitioners has established the requisite standing to intervene in this proceeding and that they have submitted two admissible contentions, which are set forth in an appendix to this decision. Accordingly, we admit each of the Joint Petitioners as a party to this proceeding. Additionally, we outline certain procedural and administrative rulings regarding the litigation of these admitted contentions, as well as certify to the Commission a question regarding the Licensing Board’s ability to proceed with litigating the merits of the two admitted contentions on the basis of the NRC Staff’s draft environmental impact statement (DEIS).

## I. BACKGROUND

### A. SNC Early Site Permit Application

Under the Part 52 licensing process, an entity may apply for an ESP that allows it to resolve key site-related environmental, safety, and emergency planning issues before choosing the design of a nuclear power facility for, or deciding to build such a facility on, that site. Thus, if granted, an ESP essentially allows an entity to “bank” a possible site for the future construction of a specified number of new nuclear power generation facilities.

SNC filed its ESP application on behalf of itself and the owners of the Vogtle Electric Generating Plant site (Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton, Georgia). In addition to the ER that is the focus of the Joint Petitioners concerns, the application consists of a section on Administrative Information (AI) about SNC and the site owners, a Site Safety Analysis Report (SSAR), an Emergency Plan (EP), and a Site Redress Plan (SRP). The particular site for which SNC seeks to obtain an ESP is the Vogtle Electric Generating Plant site (Plant Vogtle), where an existing two-unit nuclear power facility has been producing electricity since 1987. SNC is the licensed operator of the existing generating units at the Plant Vogtle site. *See* [SNC] Vogtle Early Site Permit Application (Rev. 1, Nov. 2006).<sup>1</sup>

### B. Joint Petitioners Hearing Request/Licensing Board Establishment and Initial Procedures

In response to the October 5, 2006 notice of hearing and opportunity to petition for leave to intervene regarding the Vogtle ESP application, 71 Fed. Reg. 60,195 (Oct. 12, 2006), Joint Petitioners filed a timely request for hearing and petition to intervene that sought to establish the case for their standing and the admissibility of what they designated as five contentions. *See* Petition for Intervention (Dec. 11, 2007) [hereinafter Intervention Petition]. Thereafter, on December 15, 2006, this Atomic Safety and Licensing Board was established to adjudicate the Vogtle ESP

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<sup>1</sup>Revision 1 of the Vogtle ESP application can be found in the agency’s ADAMS document management system at Accession Nos. ML063210521, ML063210525 (AI), ML063210528 (SSAR), ML063210530 (SSAR), ML063210533 (SSAR), ML063210535 (SSAR), ML063210537 (SSAR), ML063210541 (SSAR), ML063210542 (SSAR), ML063210543 (SSAR), ML063210544 (SSAR), ML063210546 (SSAR), ML063210549 (SSAR), ML063210551 (SSAR), ML063210553 (SSAR), ML063210554 (SSAR), ML063210555 (ER), ML063210558 (ER), ML063210560 (ER), ML063210562 (ER), ML063210565 (ER), ML063210568 (SRP), ML063210569 (EP).

proceeding.<sup>2</sup> *See* 71 Fed. Reg. 77,071 (Dec. 22, 2006). In the December 18, 2006 initial prehearing order, in addition to establishing several procedural measures to govern matters such as the filing of time extension motions, the Licensing Board indicated that it would treat the three designated subparts of the first of the Joint Petitioners contentions as three separate contentions and requested that for these and their other contentions, Joint Petitioners designate each as being in one or more of the following subject matter categories: (1) Administrative, (2) Site Safety Analysis, (3) Environmental, (4) Emergency Planning, or (5) Miscellaneous. *See* Licensing Board Memorandum and Order (Initial Prehearing Order) (Dec. 18, 2006) at 1-2 (unpublished) [hereinafter Initial Prehearing Order]. This prehearing order also set a January 10, 2007 deadline for SNC and Staff responses to the Joint Petitioners contention supplement and a January 17, 2007 deadline for the Joint Petitioners response, which was later extended to January 24, 2007. *See id.* at 3; Licensing Board Order (Granting in Part Motion for Time Extension To File Reply Pleading) (Jan. 16, 2007) at 2 (unpublished).

Within 10 days of the initial prehearing order, Joint Petitioners timely complied with the Board's request regarding contention designation with a supplemental pleading indicating that their seven issue statements were all environmental contentions (EC). *See* Joint Supplement to Petition for Intervention (Dec. 27, 2006). Thereafter, SNC and the NRC Staff both responded to the Joint Petitioners hearing request on January 10, 2007. *See* Southern Nuclear Operating Company's Answer in Response to Petition for Intervention (Jan. 10, 2007) at 11 [hereinafter SNC Answer]; NRC Staff Answer to Petition for Intervention (Jan. 10, 2007) at 14 [hereinafter Staff Answer]. The next day, the Board issued an order establishing the location and timing for an initial prehearing conference intended to provide the participants with an opportunity to present oral argument and answer Board questions regarding contention admissibility. *See* Licensing Board Memorandum and Order (Initial Prehearing Conference Schedule; Argument Allocations; Opportunity for Written Limited Appearance Statements) (Jan. 11, 2007) at 1 (unpublished). Finally, on January 24, Joint Petitioners filed their reply to the SNC and Staff answers. *See* Petitioners' Reply to NRC Staff Answer and SNC Answer to Petition for Intervention of [Joint Petitioners] (Jan. 24, 2007) [hereinafter Joint Petitioners Reply].

On February 13, 2007, in Waynesboro, Georgia, the Board conducted a 1-day prehearing conference during which it heard oral presentations from the partici-

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<sup>2</sup>Further, acting on a Commission directive designating this proceeding as a pilot for the use of an electronic, Internet-based document submission system in agency adjudicatory proceedings generally, the Chief Administrative Judge established procedures requiring the use of an E-Submittal process for all filings in this proceeding. *See* Chief Administrative Judge Memorandum and Order (Establishing Procedures for Submitting Documents Using Agency Electronic Information Exchange/E-Submittal Process) (Dec. 15, 2006) (unpublished).

pants regarding the admissibility of the Joint Petitioners seven contentions. *See* Tr. at 5-192. Less than 2 weeks later, on February 26, 2007, the Commission issued a series of decisions that arguably had an impact on one of the Joint Petitioners proffered environmental contentions, EC 4, regarding the need to include in the ER a discussion of the impacts of a terrorist attack on the existing and proposed Vogtle facilities.<sup>3</sup> The next day, the Board issued an order permitting the participants to provide supplemental briefs and responsive filings addressing the impact of these Commission decisions on the admissibility of that contention, which SNC and the Staff did on March 1, 2007. *See* Licensing Board Memorandum and Order (Briefing Schedule Regarding Impact of Commission Decisions on Joint Petitioners Environmental Contention 4) (Feb. 27, 2007) at 1-2 (unpublished); [SNC] Brief on the Commission’s Recent Decisions Concerning Analysis of Terrorist Impacts Under NEPA on the Admissibility of EC 4 (Mar. 1, 2007) [hereinafter SNC NEPA Terrorist Impacts Brief]; NRC Staff Brief Addressing Impact of Commission Decisions on Joint Petitioners’ Proposed [EC] 4 (Mar. 1, 2007) [hereinafter Staff NEPA Terrorist Impacts Brief].

## II. ANALYSIS

### A. Joint Petitioners Standing

#### 1. Standards Governing Standing

In determining whether an individual or organization should be granted party status in a proceeding based on standing “as of right,” the agency has applied contemporaneous judicial standing concepts that require a participant to establish (1) it has suffered or will suffer a distinct and palpable injury that constitutes injury-in-fact within the zones of interests arguably protected by the governing statutes (e.g., the Atomic Energy Act of 1954 (AEA), the National Environmental Policy Act of 1969 (NEPA)); (2) the injury is fairly traceable to the challenged action; and (3) the injury is likely to be redressed by a favorable decision. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996). In this regard, in cases involving the possible construction or operation of a nuclear power reactor, proximity to the proposed facility has been considered sufficient to establish the requisite standing elements. *See Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30

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<sup>3</sup> *See Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-07-11, 65 NRC 148 (2007); *System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-07-10, 65 NRC 144 (2007); *Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-07-9, 65 NRC 139 (2007); *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007).

NRC 325, 329 (1989). Further, when an entity seeks to intervene on behalf of its members, that entity must show it has an individual member who can fulfill all the necessary standing elements and who has authorized the organization to represent his or her interests. *See Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 (2000). In assessing a petition to determine whether these elements are met, which a presiding officer must do even though there are no objections to a petitioner's standing, the Commission has indicated that we are to "construe the petition in favor of the petitioner." *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995). We apply these rules and guidelines in evaluating each of the Joint Petitioners standing presentations.

### **2. *Atlanta Women's Action for New Directions (Atlanta WAND)***

DISCUSSION: Intervention Petition at 4-5 & Exh. 1; SNC Answer at 6 n.7; Staff Answer at 9 & Attach. A.

RULING: Atlanta WAND is a not-for-profit organization whose members oppose the issuance of an ESP to SNC. Attached to the Joint Petitioners hearing request are the affidavits of three WAND members, each of whom states that Atlanta WAND is authorized to represent his or her interests. All three members reside within 50 miles of the Plant Vogtle site, and at least one lives within 30 miles of the facility. These individuals' asserted health, safety, and environmental interests and their agreement to permit Atlanta WAND to represent their interests are sufficient to establish Atlanta WAND's standing to intervene in this proceeding.

### **3. *Blue Ridge Environmental Defense League (BREDL)***

DISCUSSION: Intervention Petition at 4-5 & Exh. 1; SNC Answer at 6 n.7; Staff Answer at 10 & Attach. A.

RULING: BREDL is a not-for-profit organization whose members oppose the issuance of an ESP to SNC. Attached to the Joint Petitioners hearing request are the affidavits of sixteen BREDL members, each of whom states that BREDL is authorized to represent his or her interests. All sixteen members reside within 50 miles of the Plant Vogtle site, and at least one lives within 25 miles of the facility. These individuals' asserted health, safety, and environmental interests and their agreement to permit BREDL to represent their interests are sufficient to establish BREDL's standing to intervene in this proceeding.

**4. *Center for a Sustainable Coast (CSC)***

DISCUSSION: Intervention Petition at 4-5 & Exh. 1; SNC Answer at 6 n.7; Staff Answer at 10-11 & Attach. A.

RULING: CSC is a not-for-profit corporation whose members oppose the issuance of an ESP to SNC. Attached to the Joint Petitioners hearing request are the affidavits of three CSC members, each of whom states that CSC is authorized to represent his or her interests. One member resides within 39 miles of the Plant Vogtle site. This individual's asserted health, safety, and environmental interests and his agreement to permit CSC to represent his interests are sufficient to establish CSC's standing to intervene in this proceeding.

**5. *Savannah Riverkeeper (SR)***

DISCUSSION: Intervention Petition at 4-5 & Exh. 1; SNC Answer at 6 n.7; Staff Answer at 8-9 & Attach. A.

RULING: SR is a not-for-profit organization whose members oppose the issuance of an ESP to SNC. Attached to the Joint Petitioners hearing request are the affidavits of three SR members, each of whom states that SR is authorized to represent his interests. All three reside within 40 miles of the Plant Vogtle site, and at least one lives within 35 miles of the facility. These individuals' asserted health, safety, and environmental interests and their agreement to permit SR to represent their interests are sufficient to establish SR's standing to intervene in this proceeding.

**6. *Southern Alliance for Clean Energy (SACE)***

DISCUSSION: Intervention Petition at 4-5 & Exh. 1; SNC Answer at 6 n.7; Staff Answer at 8 & Attach. A.

RULING: SACE is a not-for-profit organization whose members oppose the issuance of an ESP to SNC. Attached to the Joint Petitioners hearing request are the affidavits of three SACE members, each of whom states that SACE is authorized to represent his or her interests. Two members reside within 50 miles of the Plant Vogtle site, and at least one lives within 36 miles of the facility. These individuals' asserted health, safety, and environmental interests and their agreement to permit SACE to represent their interests are sufficient to establish SACE's standing to intervene in this proceeding.

## **B. Joint Petitioners Contentions**

### **1. Contention Admissibility Standards**

Section 2.309(f) of the Commission's rules of practice specifies the requirements that must be met if a contention is to be deemed admissible. Specifically, a contention must provide (1) a specific statement of the legal or factual issue sought to be raised; (2) a brief explanation of its basis; (3) a concise statement of the alleged facts or expert opinions, including references to specific sources and documents, that support the petitioner's position and upon which the petitioner intends to rely at hearing; and (4) sufficient information demonstrating that a genuine dispute exists in regard to a material issue of law or fact, including references to specific portions of the application that the petitioner disputes, or in the case when the application is alleged to be deficient, the identification of such deficiencies and supporting reasons for this belief. *See* 10 C.F.R. § 2.309(f)(1)(i), (ii), (v), and (vi). In addition, the petitioner must demonstrate that the issue raised in the contention is both "within the scope of the proceeding" and "material to the findings the NRC must make to support the action that is involved in the proceeding." *Id.* § 2.309(f)(1)(iii)-(iv). Failure to comply with any of these requirements is grounds for dismissing a contention. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); *see also Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

NRC case law has further developed these requirements, as is summarized below:

#### *a. Challenges to Statutory Requirements/Regulatory Process/Regulations*

An adjudication is not the proper forum for challenging applicable statutory requirements or the basic structure of the agency's regulatory process. *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20, *aff'd in part on other grounds*, CLI-74-32, 8 AEC 217 (1974). Similarly, a contention that attacks a Commission rule, or which seeks to litigate a matter that is, or clearly is about to become, the subject of a rulemaking, is inadmissible. *See* 10 C.F.R. § 2.335; *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85, 89 (1974). This includes contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking. *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 159 (2001); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-93-1, 37 NRC 5, 29-30 (1993); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1656 (1982); *see also Yankee*



*Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 251 (1996); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), LBP-91-19, 33 NRC 397, 410, *aff'd in part and rev'd in part on other grounds*, CLI-91-12, 34 NRC 149 (1991). By the same token, a contention that simply states the petitioner's views about what regulatory policy should be does not present a litigable issue. *See Peach Bottom*, ALAB-216, 8 AEC at 20-21 & n.33.

*b. Challenges Outside Scope of Proceeding*

All proffered contentions must be within the scope of the proceeding as defined by the Commission in its initial hearing notice and order referring the proceeding to the Licensing Board. *See* 10 C.F.R. § 2.309(f)(1)(iii); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-00-23, 52 NRC 327, 329 (2000); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790-91 (1985). As a consequence, any contention that falls outside the specified scope of the proceeding must be rejected. *See Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979).

*c. Need for Adequate Factual Information or Expert Opinion*

It is the petitioner's obligation to present factual information and/or expert opinion necessary to support its contention. *See* 10 C.F.R. § 2.309(f)(1)(v); *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305, *vacated in part and remanded on other grounds*, CLI-95-10, 42 NRC 1, and *aff'd in part*, CLI-95-12, 42 NRC 111 (1995). While a Board may appropriately view a petitioner's supporting information in a light favorable to the petitioner, failure to provide such information regarding a proffered contention requires the contention be rejected. *See Palo Verde*, CLI-91-12, 34 NRC at 155. In this connection, neither mere speculation nor bare or conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention. *See Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). If a petitioner neglects to provide the requisite support for its contentions, it is not within the Board's power to make assumptions of fact that favor the petitioner, nor may the Board supply information that is lacking. *See Palo Verde*, CLI-91-12, 34 NRC at 155; *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 422 (2001); *Georgia Tech Research Reactor*, LBP-95-6, 41 NRC at 305.

Likewise, simply attaching material or documents as a basis for a contention,

without setting forth an explanation of that information's significance, is inadequate to support the admission of the contention. *See Fansteel*, CLI-03-13, 58 NRC at 204-05. Along these lines, any supporting material provided by a petitioner, including those portions of the material that are not relied upon, is subject to Board scrutiny. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90, *rev'd in part on other grounds*, CLI-96-7, 43 NRC 235 (1996). Thus, the material provided in support of a contention will be carefully examined by the Board to confirm that on its face it does supply an adequate basis for the contention. *See Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 48 (1989), *vacated in part on other grounds and remanded*, CLI-90-4, 31 NRC 333 (1990).

*d. Materiality*

To be admissible, the regulations require that all contentions assert an issue of law or fact that is material to the outcome of a licensing proceeding, meaning that the subject matter of the contention must impact the grant or denial of a pending license application. *See* 10 C.F.R. § 2.309(f)(1)(iv). This requirement of materiality often dictates that any contention alleging deficiencies or errors in an application also indicate some significant link between the claimed deficiency and either the health and safety of the public or the environment. *See Yankee Nuclear*, LBP-96-2, 43 NRC at 75-76; *see also Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), LBP-02-23, 56 NRC 413, 439-41 (2002), *petition for review denied*, CLI-03-12, 58 NRC 185, 191 (2003).

*e. Insufficient Challenges to the Application*

All properly formulated contentions must focus on the license application in question, challenging either specific portions of or alleged omissions from the application (including the Safety Analysis Report and the Environmental Report) so as to establish that a genuine dispute exists with the applicant on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi). Any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed. *See Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994); *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992).

## 2. *Scope of Contentions*

Although licensing boards generally are to litigate “contentions” rather than “bases,” it has been recognized that “[t]he reach of a contention necessarily hinges upon its terms coupled with its stated bases.” *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988), *aff’d sub nom. Massachusetts v. NRC*, 924 F.2d 311 (D.C. Cir.), *cert. denied*, 502 U.S. 899 (1991); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 379 (2002). As outlined below, exercising our authority under 10 C.F.R. §§ 2.316, 2.319, 2.329, we have acted to further define the Joint Petitioners admitted contentions when redrafting would clarify the scope of the contention.

## 3. *Environmental Contentions (EC)*

### EC 1.1 — ER FAILS TO INCLUDE AN ADEQUATE AQUATIC HABITAT BASELINE<sup>4</sup>

**CONTENTION:** The ER fails to use quantitative analysis and field surveys to assess baseline habitat conditions and species diversity and abundance in the project’s area.

**DISCUSSION:** Intervention Petition at 7-9; SNC Answer at 11-16; Staff Answer at 14-15; Joint Petitioners Reply at 6-8; Tr. at 13-64.

**RULING:** Although, to some degree, Joint Petitioners intermingle the substance of this contention with that of contentions EC 1.2 and EC 1.3, the crux of their concern reflected in this issue statement is that the SNC ER suffers from a fundamental deficiency in that its analysis regarding the impacts and effects of the proposed ESP on the aquatic environment in the area of the Plant Vogtle site is based on information that is inadequate to establish the requisite environmental baseline. According to Joint Petitioners, the ER is inadequate because SNC has failed to include, i.e., omitted, a site-specific description of the Plant Vogtle aquatic environs that is based on recent field studies or a quantitative analysis of the circumstances regarding aquatic species assemblage, migration by anadromous (i.e., moving from the sea to rivers to breed) and diadromous (i.e.,

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<sup>4</sup>In noting relative to their initial “contention” that the three “subcontentions” would be treated as separate issue statements, the Board afforded Joint Petitioners the opportunity to label and restate those contentions, including utilizing any of the information contained in support of the “main” contention. *See* Initial Prehearing Order at 3 n.2. In that regard, because Joint Petitioners did not assign a title to each of these three contentions, the Board has done so based on the contention’s content and stated bases. The language of these and the Joint Petitioners other contentions as set forth below is verbatim.

migrating between salt- and freshwater) species, or habitat utilization within the proposed intake and discharge sites and/or the project area. Rather, according to Joint Petitioners, SNC has chosen to rely on long-term studies of the Savannah River Site (SRS), a Department of Energy (DOE) nuclear weapons facility that is across the river from the Plant Vogtle site, that collected data in the vicinity of Plant Vogtle. Applicant SNC opposes the admission of this baseline contention as failing to set forth sufficient information to show the existence of a genuine dispute and as lacking a legal basis. The Staff does not oppose its admission in part, finding a sufficient basis for challenge to the ER based on an asserted lack of discussion of baseline aquatic ecology conditions in the Savannah River.

Joint Petitioners correctly indicate that a NEPA analysis relating to aquatic impacts must, as a practical matter, have a baseline from which to operate. *See American Rivers v. Federal Energy Regulatory Commission*, 201 F.3d 1186, 1195 n.15 (9th Cir. 2000). It is equally apparent, however, that nothing in the agency's Part 51 NEPA regulations, *see* 10 C.F.R. § 51.45(b) (ER must contain "description of the environment affected"), or the Staff's ER preparation guidance regarding providing a description of the local environment, *see* Office of Standards Development, U.S. Nuclear Regulatory Commission [(NRC)], Preparation of [ERs] for Nuclear Power Stations, Regulatory Guide 4.2, at 2-3 to -4 (rev. 2, July 1976) (ADAMS Accession No. ML003739519) [hereinafter Regulatory Guide 4.2], indicates exactly how, as a general matter, such a baseline is to be established.

Although Joint Petitioners have provided the affidavit of Dr. Shawn Paul Young in which he suggests that the existing reference material and studies cited by SNC in its environmental report are inadequate to provide the necessary baseline, he does so in the context of his concern that there is inadequate information to assess the impacts upon the Savannah River aquatic population of the additional intake and discharge outlets that would be constructed and utilized for two additional Vogtle units. *See* Intervention Petition, Exh. 1.3, at 3-9 (Declaration of Shawn Paul Young, Ph.D.) [hereinafter Young Declaration]. In contrast, it appears uncontested that the Applicant has adequately described the general aquatic resources of the Savannah River, including the river's important species and their habitats. *See* Intervention Petition at 8-9; ER at 2.4-7 to-16. In that regard, during the February 13 initial prehearing conference argument concerning this contention, Joint Petitioners counsel explained their position in a colloquy with one of the Board members:

JUDGE TRIKOUROS: So what you're saying — and really this goes to an earlier — a question that I was going to ask. In general, the baseline for that river on a general basis has been characterized adequately to your knowledge, based on work done by [the DOE SRS] and also the existing Vogtle units?

MR. SANDERS: I believe that the general population data and — yes. Let me

just say yes. I think that there is sufficient information about the river in general. We are talking about the specific site.

JUDGE TRIKOUROS: Now, when you talk about the site, are you talking about some region around the intake and some region around the discharge? Is that what you're calling the site?

MR. SANDERS: Well, you see, again, this illustrates the problem with the ER is that it doesn't — that is should be identifying the site. It talks about the Savannah River in general, but it doesn't provide a description of the stretch of the river that is immediately adjacent to Plant Vogtle where the intake and discharge structure will be located. That's really the problem is that there really isn't that specific description of the exact site.

So there's the Savannah River. There's the Middle Savannah River around Plant Vogtle. There's, you know, the Savannah River below the city of Augusta. There's a description of that sort of stuff, but they didn't take the next step and actually describe the flow and habitat conditions on the river right there.

Tr. at 18-19.

As this discussion suggests, the information provided by Joint Petitioners would be inadequate to support the admission of a contention that the aquatic baseline set forth in the ER is wholly insufficient. At the same time, in support of their argument the ER is deficient because of its lack of site-specific studies, Joint Petitioners have not demonstrated with any references — nor are we aware of any — that suggest site-specific studies are generally required. Rather, the appropriate scope of the baseline for a project is a functional concept: an applicant must provide enough information and in sufficient detail to allow for an evaluation of important impacts. *See* Office of Nuclear Reactor Regulation, [NRC], “Standard Review Plans for Environmental Reviews for Nuclear Power Plants,” NUREG-1555, at 4.3.2-1 to -2 (Oct. 1999) [hereinafter NUREG-1555]; Office of Nuclear Regulatory Research, [NRC], General Site Suitability Criteria for Nuclear Power Stations, Regulatory Guide 4.7, at 4.7-14 to -15 (rev 2, Apr. 1998) (ADAMS Accession No. ML003739894). Although, as we explain below, aspects of this contention may come into play relative to EC 1.2, *see infra* p. 259, we conclude Joint Petitioners have failed to provide sufficient factual or expert information to support its stated scope and, accordingly, we decline to admit this issue statement.<sup>5</sup> *See* 10 C.F.R. § 2.309(f)(1)(v).

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<sup>5</sup> In their intervention petition, Joint Petitioners declared:

The ER's analysis of the cooling system intake and discharge structures and operation is not based on field surveys or quantitative analysis. ER § 5.3; 10 C.F.R. § 51.45(c). Thus, the ER

(Continued)

EC 1.2 — ER FAILS TO IDENTIFY AND CONSIDER COOLING SYSTEM IMPACTS ON AQUATIC RESOURCES

CONTENTION: The ER fails to identify and consider direct, indirect, and cumulative impacts of the proposed cooling system intake and discharge structures on aquatic resources.

DISCUSSION: Intervention Petition at 10-13; SNC Answer at 16-23; Staff Answer at 16-19; Joint Petitioners Reply at 8-12; Tr. at 65-97.

RULING: SNC asserts that this contention regarding the inadequacy of the ER's discussion of intake/discharge structure aquatic impacts associated with impingement/entrainment and chemical and thermal effluent discharges should be dismissed as lacking sufficient factual and legal support and as not material to the agency's findings relative to ESP issuance. The Staff does not oppose its admission.

In contrast to contention EC 1.1, we find the Joint Petitioners submission, in particular the affidavit of Dr. Shawn Paul Young, provides sufficient factual support for the admission of this contention. For each of the asserted deficiencies concerning the ER impact discussion regarding the intake/discharge structure for the two new proposed facilities — impingement/entrainment, chemical discharges, and thermal discharges, including cumulative impacts from these items associated with the existing Vogtle facilities — Dr. Young's affidavit provides specific references to a number of alleged errors in the ER. *See* Young Declaration at 3-11. Moreover, in the absence of a National Pollutant Discharge Elimination System (NPDES) permit for the new intake/discharge facility, we are unable to find dispositive of this contention's admissibility the SNC effort, *see* Tr. at 88-89, to rely upon an EPA rulemaking regarding the "best available technology" status of a closed-cycle recirculating cooling system, *see* 66 Fed. Reg. 65,256 (Dec. 18, 2001), purported to be like that proposed for the new Vogtle facilities. *See*

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fails to identify the current aquatic species assemblage or the presence or absence of threatened, endangered, or rare species in the project area. Similarly, the ER contains no data concerning upstream and downstream migration of anadromous and diadromous species in this section of the Savannah River or their habitat utilization within the project area. Likewise, the ER does not address specific habitat types and utilization by resident and anadromous fish in the project area. Nor does the ER examine flow-habitat relationships and the potential impacts of the project on habitat availability.

Intervention Petition at 8. In its answer to the intervention petition, the Staff indicated this statement was sufficient to support the admission of this contention as it related to the adequacy of the ER's discussion of current aquatic species assemblage, migration/habitat utilization by anadromous/diadromous species, and habitat types/utilization by anadromous fish, but was insufficient to support the contention's admission relative to flow-habitat relationships and habitat availability impacts. *See* Staff Answer at 14-15; *see also* Tr. at 47-49. Given the factual support provided by Joint Petitioners, however, we are unable to conclude that any aspects of this contention are admissible.

NUREG-1555, at 5.3.1.2-5 to -6, 5.3.2.2-5 to -6 (if current NPDES permit or state equivalent is not available, Staff reviewer must continue with analysis of applicant's cooling water intake/discharge system impacts).

Accordingly, we conclude that this contention, as set forth in Appendix A to this opinion, is supported by bases establishing a genuine material dispute adequate to warrant further inquiry. In admitting this contention, we note that litigation regarding its merits may involve the question of the adequacy of the baseline information provided by SNC relative to the portion of the Savannah River that encompasses the project area associated with the intake/discharge structures for both the existing and proposed Vogtle facilities.

#### EC 1.3 — ER ALTERNATIVES DISCUSSION FAILS TO ADDRESS AQUATIC SPECIES IMPACTS

**CONTENTION:** The ER fails to satisfy 10 C.F.R. § 51.45(b)(3) because it fails to address impacts to aquatic species in its discussion of alternatives. In particular, the ER's discussion of the no-action alternative and of alternative cooling technologies fails to consider environmental and economic benefits of avoiding construction of the proposed cooling system.

**DISCUSSION:** Intervention Petition at 14-15; SNC Answer at 24-26; Staff Answer at 19-22; Joint Petitioners Reply at 12-14; Tr. at 97-117.

**RULING:** Joint Petitioners posit two bases in support of EC 1.3: the ER discussion of the no-action alternative does not provide an adequate discussion of economic and environmental benefits, and the ER discussion of the dry-cooling alternative and aquatic impacts is insufficient because extremely sensitive biological resources are present. Applicant SNC opposes this contention, arguing that it lacks a genuine factual or legal basis necessary for admission under 10 C.F.R. § 2.309(f). The Staff originally opposed admitting the contention altogether, but at oral argument stated it would favor admitting a limited version of the contention if the Board admitted EC 1.2. The Staff's revised EC 1.3 would provide that "the ER's discussion of alternative cooling technology related to dry cooling in Section 9.4 of the ER fails to consider the environmental and economic benefits of dry cooling over the proposed cooling system." Tr. at 108.

The Board concludes the Joint Petitioners argument addressing the no-action alternative is inadmissible because it does not specifically address any deficiencies in the ER discussion of the no-action alternative. Nor do Joint Petitioners address why more information regarding the no-action alternative is needed in the face of prior Commission statements noting that such discussions can be brief and can incorporate by reference other sections of the ER discussing the project's adverse consequences. See *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 54 (2001) ("[f]or the 'no action' alternative, there need not be much discussion"); *Louisiana Energy Services, L.P.* (Claiborne

Enrichment Center), CLI-98-3, 47 NRC 77, 98 (1998) (“[w]e do not find the FEIS’s incorporation by reference approach unreasonable as such”). By failing to point to specific parts of the ER’s discussion of the no-action alternative they find inadequate and to provide support for that dispute, Joint Petitioners have failed to provide sufficient information to show that a genuine dispute exists with the Applicant. *See* 10 C.F.R. § 2.309(f)(1)(vi).

The Joint Petitioners’ other, and seemingly primary, argument relative to this contention challenges whether SNC has provided an adequate analysis of dry cooling as an alternative cooling system for the proposed Vogtle facilities. SNC generally is obligated in the ER to discuss project alternatives and emphasize those that “appear promising in terms of environmental protection.” Regulatory Guide 4.2, at 10-1; *see also* Joint Petitioners Reply at 14. In this regard, the Staff’s regulatory guide instructs applicants to include alternatives that “although not necessarily economically attractive, . . . are based on feasible technology available to the applicant during the design state.” *Id.*

Established case law teaches that, except for its overall NEPA balancing, the NRC can limit its analysis of aquatic impacts to those determined by the EPA, *see New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 98 (1st Cir. 1978), when EPA has analyzed an alternative technology extensively and made conclusions as to its suitability. In light of that authority, it is not untoward that an applicant would seek to rely on that analysis. So in this context, in which EPA has rejected dry cooling as the best available technology for cooling systems (or as a national minimum requirement), finding that its environmental benefits are not so great as to offset its costs, regional disparities, and losses in energy efficiency, *see* 66 Fed. Reg. at 65,282, it hardly comes as a surprise the SNC discussion of dry cooling relies in significant part upon the EPA’s analysis and conclusions regarding dry cooling, *see* ER at 9.4-2. Nor is such reliance necessarily inappropriate, given the deference to the EPA’s analyses in areas such as these.

In that analysis, however, EPA also stated:

Although EPA has rejected dry cooling technology as a national minimum requirement, EPA does not intend to restrict the use of dry cooling or to dispute that dry cooling may be the appropriate cooling technology for some facilities. This could be the case in areas with limited water available for cooling or waterbodies with extremely sensitive biological resources (e.g., endangered species, specially protected areas).

66 Fed. Reg. at 65,282. If the Vogtle site thus contains these extremely sensitive resources, it is arguable that, consistent with this EPA analysis, Applicant SNC should be required to conduct further analysis as to whether, considering the



present sensitive species and other pertinent factors, dry cooling is appropriate for the Vogtle site.

Joint Petitioners have asserted there are extremely sensitive resources present in the Savannah River in the vicinity of the Vogtle facility and have given examples of what they believe to be extremely sensitive species, including the shortnose sturgeon (which is a federally listed endangered species) and the robust redhorse (which until 1997 was thought to be extinct). *See* Intervention Petition at 15. SNC disputes that such species are present and appears to argue that the term “extremely sensitive” does not mean federally listed endangered species. *See* SNC Answer at 25-26; Tr. at 107. The EPA has not defined the term “extremely sensitive biological resources,” other than to offer two examples, “i.e., endangered species and specially protected areas.” 66 Fed. Reg. at 65,282. The Board concludes that the meaning of this term and whether such resources are present are material factual and legal disputes best resolved in merits litigation regarding this contention.

Accordingly, we conclude that this contention concerning the need for an additional discussion of dry cooling as an alternative cooling system, as set forth in Appendix A to this opinion, is supported by bases establishing a genuine material dispute adequate to warrant further inquiry.

#### EC 2 — ENVIRONMENTAL JUSTICE — IMPACT ON MINORITY AND LOW-INCOME POPULATIONS

**CONTENTION:** The ER for the proposed new reactors at Plant Vogtle is inadequate to satisfy the NEPA because it fails to provide a thorough analysis of the disparate environmental impacts of the project on the minority and low-income communities residing in close proximity to the site. The ER fails to consider factors particular to those communities which will magnify the environmental impacts of the proposed reactors in a way that is both disparate and significant. In particular, the ER fails to acknowledge the widespread practice of subsistence fishing in the Savannah River, and the likelihood that this population’s intake of radionuclides and other toxic substances generated by the proposed reactors will be significant and disproportionate to the rates of ingestion by the general population. In addition, the ER fails to address the fact that cancer rates in the minority and low-income communities surrounding Plant Vogtle are already higher than for the general population, and therefore that those communities are more vulnerable to the adverse impacts of additional radiological and chemical pollution in the environment. Finally, the ER fails to address disparate impacts on the minority and low-income communities during a radiological emergency and evacuation.

**DISCUSSION:** Intervention Petition at 15-26; SNC Answer at 26-40; Staff Answer at 23-29; Joint Petitioners Reply at 14-25; Tr. at 118-48.

**RULING:** In support of this contention, Joint Petitioners argue that the ER has neglected to discuss adequately three adverse impacts that fall disproportionately

upon the minority and low-income populations that the ER acknowledges are in the communities surrounding the proposed Vogtle facilities: the area's heightened cancer rates, the evacuation methods used in the event of an emergency, and the effects of eating cesium (Cs)-137-laden fish caught by minority and low-income community residents engaged in subsistence fishing. Both SNC and the Staff oppose admitting this contention, arguing that it runs afoul of 10 C.F.R. § 2.309(f)(1) in that it neither includes sufficient information to show that a genuine dispute exists nor raises an issue material to these proceedings.

As noted by Joint Petitioners and the Staff, the NRC has made a commitment as part of its NEPA review process to strive to reach the environmental justice goals described in Executive Order 12898. *See* 69 Fed. Reg. 52,040, 52,041-42 (Aug. 24, 2004) (final Commission environmental justice policy statement). As the Commission previously has noted in reviewing environmental justice claims, "adverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny." *Claiborne Enrichment Center*, CLI-98-3, 47 NRC at 106.

There are, however, two requirements necessary to implicate this close environmental justice scrutiny. First, support must be presented regarding the alleged existence of adverse impacts or harm on the physical or human environment. Second, a supported case must be made that these purported adverse impacts could disproportionately affect poor or minority communities in the vicinity of the facility at issue. *See* 69 Fed. Reg. at 52,047. Joint Petitioners have not met these two requirements relative to any of their three alleged disproportionate impacts.

Initially, we note Joint Petitioners argument regarding heightened cancer rates in the area of the existing Vogtle facilities is not supported by relevant evidence regarding such enhanced rates or any other possible harm. Although Joint Petitioners present one article discussing a study that found increased cervical and esophageal cancer rates in the vicinity of the SRS, they also note the study's observation that "these types of cancer are not necessarily associated with exposure to radioactive materials." Intervention Petition at 23. No evidence of heightened rates for any cancers typically associated with radiation exposure is presented. In fact, the overall conclusion of the sole study cited by Joint Petitioners is that "most cancer rates in the area are about the same as in similar communities." *Id.*, Exh. 2.7, at 1 (*Researchers Find Cancer Rates Normal Near Nuclear Plant*, Cancer Weekly, Feb. 3, 1997, at 13-14). All told,<sup>6</sup> the evidence

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<sup>6</sup>Joint Petitioners also make an assertion that this portion of EC 2 is supported by pre- and post-Vogtle facility mortality data concerning Burke County, but cite only to a general nationwide database of mortality data in which it is not apparent where the data that supposedly support their assertion are to be found. *See* Intervention Petition at 24 n.30. It being well established that the Board cannot be expected to sift through reams of data to determine whether a contention is admissible, *see Georgia* (Continued)

presented for this argument is inadequate to provide the necessary “alleged facts or expert opinions which support the requestor’s/petitioner’s position on the issue.” 10 C.F.R. § 2.309(f)(1)(v). Additionally, without relevant evidence of heightened cancer rates, there is no evidence of either adverse or disparate impacts. As such, this aspect of EC 2 fails to show, as is required by section 2.309(f)(1)(iv), “that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding.”

The emergency planning prong of EC 2 also fails to meet NRC contention admissibility standards because of its lack of relevant supporting material. The NRC requires that environmental justice contentions be based on the specific characteristics of a particular minority community. *See Claiborne Enrichment Center*, CLI-98-3, 47 NRC at 100. Thus, in the *Claiborne Enrichment Center* proceeding, to support an argument that the minority community surrounding the site would be disproportionately impacted by a longer bypass road, the petitioners presented evidence that a larger proportion of this community did not have cars. *Id.* at 107-08. No information of this type has been presented here. Instead, Joint Petitioners simply cite to a report regarding the evacuation of the urban poor population of New Orleans, Louisiana, during Hurricane Katrina and note that the area around Plant Vogtle would present different challenges, without explaining what those different challenges might be.<sup>7</sup> *See* Intervention Petition at 25-26; Joint Petitioners Reply at 25. This general, unsupported argument is not only insufficient to provide the necessary factual or expert opinion support for this contention in accord with section 2.309(f)(1)(v), but also is so vague as to fail to demonstrate a disagreement with the Applicant as required by section 2.309(f)(1)(vi).

Finally, there is the Joint Petitioners primary environmental justice assertion that poor and minority populations will be disproportionately harmed by the cumulative impacts of the new Vogtle facilities given the current presence of Cs-137 pollution in the Savannah River fish population that is a subsistence food source. This concern, however, also lacks an adequate showing of adverse impacts, without which disparate impacts have no significance, making the

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*Tech Research Reactor*, LBP-95-6, 41 NRC at 305; *International Uranium (USA) Corp.* (Receipt of Material from Tonawanda, New York), LBP-98-21, 48 NRC 137, 142 n.7 (1998); *Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1 and 2), LBP-76-10, 3 NRC 209, 216 (1976), this nonselective citation is not consistent with the Joint Petitioners obligation to provide analyses and expert opinion supporting their contention.

<sup>7</sup> Joint Petitioners never specifically reference or discuss the section of the SNC emergency plan that addresses the process for evacuating those without cars, *see* EP at J-5, which seemingly would be the unique characteristic of the affected poor and minority communities at issue.

potential issue immaterial to the environmental findings associated with the SNC ESP application and thus an inadmissible contention.<sup>8</sup>

At the contention admissibility stage, it is appropriate to ask as a threshold matter whether, assuming the Board could find the Joint Petitioners supporting evidence credible, they have shown that the issue raised in this contention is material to legitimate health and safety or environmental concerns about which the NRC must make findings. *See* 10 C.F.R. § 2.309(f)(1)(iv). Here, even if the Board assumes subsistence fishing takes place on the Savannah River, as Joint Petitioners contend, and a disproportionate number of local residents who are poor or members of a minority group eat the 50 kilograms (kg) or more of fish per year from the river that the Joint Petitioners proffered supporting study sets as the “subsistence” consumption level, *see* Intervention Petition, Exh. 2.4, at 431 (J. Burger et al., *Factors in Exposure Assessment: Ethnic and Socioeconomic Differences in Fishing and Consumption of Fish Caught Along the Savannah River*, 19 Risk Analysis 427 (1999)) [hereinafter Burger Study], Joint Petitioners have not alleged, much less presented any supporting information suggesting, that consuming 50 kg/year of fish from the Savannah River will create levels of Cs-137 in those eating the fish that violate NRC or EPA dose limits.<sup>9</sup>

As is explained in its ER, *see* ER at 5.4-1, SNC evaluated the dose to the maximally exposed individual (MEI) from liquid effluents from the Vogtle facilities using the methodology of relevant Staff Regulatory Guide 1.109, [OSD], [NRC], Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I, Regulatory Guide 1.109 (rev. 1, Oct. 1977) (ADAMS Accession No. ML003740384), with input from the Vogtle Offsite Dose Calculation Manual (ODCM) (ver. 22, June 25, 2004) (referenced in ER at 5.4-13). In this regard, the two sources of ingestion evaluated by SNC were ingestion of fish and ingestion of drinking water

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<sup>8</sup> In contesting the admission of this contention, the Staff asserted that the Joint Petitioners argument wrongly focuses on impacts resulting from the SRS. NRC, however, has expressed a commitment to considering cumulative impacts in its environmental justice analysis, making SRS-related harm an appropriate issue to consider cumulatively with any impacts from the proposed reactors. *See* 69 Fed. Reg. at 52,042-43. Additionally, SNC’s argument that there are no subsistence fishermen on the Savannah River based on its inquiries to the appropriate governmental entities improperly goes to the merits of the Joint Petitioners contention. *See Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-20, 21 NRC 1732, 1741 (1985).

<sup>9</sup> Although Joint Petitioners cite as a primary source for their assertions regarding subsistence fishing a report from the Institute for Energy and Environment Research, *see* Intervention Petition at 20 n.14 (citing Arjun Makhijani, Ph.D., and Michele Boyd, Institute for Energy and Environmental Research, Nuclear Dumps by the Riverside: Threats to the Savannah River from Radioactive Contamination at the [SRS] (2004) (Exh. 2.3) [hereinafter IEER Study]), it is apparent that the basis for the conclusions in this report is the Burger study that is attached as Exhibit 2.4 to the Joint Petitioners hearing request, *see* Tr. at 133. We thus look to that article as the supporting basis for this aspect of their contention.

from the river. *See* ER at 5.4-1 to -2. The postulated total radiological releases from liquid effluents, which included a range of corrosion, activation, and fission products, were, excluding tritium, 0.26 curie (Ci)/year. Cs-137, the radionuclide found in various fish samples, *see* Intervention Petition at 19, was determined to be released at the rate of 0.013 Ci/year, one-twentieth of the total release. *See* ER at 3.5-15 (Table 3.5-1).

Bioaccumulation of Cs-137 and other radiological isotopes was considered in the MEI analysis in the ER accompanying the Vogtle ESP application, in accordance with the Vogtle ODCM. In evaluating the dose from these liquid radiological releases, SNC assumed an individual fish consumption of 21 kg/year and a drinking water consumption of 730 liters/year. *See* ER at 5.4-7 (Table 5.4-2). Using these assumptions, the calculated MEI total body and maximum organ annual doses from all radionuclide releases for both fish and water ingestion from the two new Vogtle units and the existing Vogtle units are, however, substantially less than the 10 C.F.R. Part 50, App. I, and 40 C.F.R. Part 190 limits. *See* ER at 5.4-7, 5.4-10 (Tables 5.4-2, 5.4-8, 5.4-9).

Although the drinking water dose was not identified by Joint Petitioners as contributing to an environmental justice concern, Joint Petitioners did identify fish consumption associated with subsistence fishing as a concern. *See* Intervention Petition at 20; Burger Study at 432-37. Given the large margin that would have to be eliminated before regulatory limits were violated, a review of the information available in the ER and the Vogtle ODCM indicates that, commensurate with the Joint Petitioners concern regarding subsistence fishing, an increase to 50 kg/year of fish from the 21 kg/year currently assumed under the SNC ER would result in an MEI dose that would still remain well below the current regulatory limits for liquid releases and for all pathways.

It should be added that when the SRS cesium releases into the river are taken into account as well, doses still remain under regulatory limits. The Cs-137 released from the SRS was 0.134 Ci/year and accounted for about 57% of the 0.08-millirem (mrem) MEI total body dose from liquid radiological releases in 2005, assuming a fish ingestion of 19 kg/year and a regulatory limit of 25 mrem/year. *See* Washington Savannah River Co., [SRS] [ER] for 2005, WSRC-TR-2006-0007, at 43 (Table 6-1), 48 ([www.srs.gov/general/pubs/ERsum/er06/er2005.htm](http://www.srs.gov/general/pubs/ERsum/er06/er2005.htm)).<sup>10</sup> While increasing the fish consumption rate for SRS to 50 kg/year would proportionally increase the dose, that dose still would be well below the NRC and EPA limits. Moreover, the cumulative annual dose from the SRS, existing Vogtle units, and proposed Vogtle units from liquid releases would remain well below the regulatory limit if the liquid pathway dose were increased to account for the

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<sup>10</sup>This report is the most recent version of the annual SRS report that is cited in the SNC ER at 10.5-4 and in the IEER Study at 76-77.

higher fish consumption associated with subsistence fishing.<sup>11</sup> Certainly, Joint Petitioners have not provided any information that suggests a contrary result.

When a contention alleges that increases in radioactive releases create higher doses, but does not provide information or expert opinion to dispute the conclusion that the higher doses would still be under NRC regulatory limits, and no evidence has been presented to show that the higher levels will cause harm, sufficient information to show that a material dispute exists has not been provided and the contention making these claims should not be admitted. *See* 10 C.F.R. § 2.309(f)(1)(iv), (vi). Illustrative is *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), LBP-03-12, 58 NRC 75, 83, 93-94, *aff'd*, CLI-03-14, 58 NRC 207 (2003), in which an applicant sought a change to that facility's technical specifications regarding fuel-handling procedures that the petitioners alleged could increase the amounts of radiological effluents released offsite. Because the projected increased levels remained below regulatory limits and the petitioner did not provide a basis for showing why the increased levels might be unsafe, the Board found the petitioner had not provided a sufficient basis to demonstrate a genuine dispute on a material issue and dismissed the contention, a ruling with which the Commission agreed.<sup>12</sup> Similarly, in accord with the environmental justice executive order, the NRC has obligated itself to address only the disproportionate distribution of "high and adverse" effects in its NEPA analysis. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-20, 56 NRC 147, 154 (2002). A dosage increase that remains well under regulatory limits is not a "high and adverse" effect.<sup>13</sup>

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<sup>11</sup> Indeed, even increasing fish consumption to 100 kg/year, the high-end figure for black subsistence fisherman found in the Burger paper, *see* Burger Study at 432 (Table IV), would still not exceed NRC or EPA regulatory limits on an individual facility or cumulative basis.

<sup>12</sup> Additionally, a contention based on the dangers of a dose below NRC regulatory limits could be considered an impermissible challenge to the Commission's regulations. In *Millstone*, the Commission found the petitioner's argument that "any increase in dose, no matter the amount, and regardless of whether the change complies with NRC radiological dose requirements, is unacceptable," amounted to an attack upon NRC dosage regulations. *Millstone*, CLI-03-14, 58 NRC at 217-18; *see also Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1656 (1982) ("In the absence of a 'regulatory gap,' . . . an attempt to advocate stricter requirements than those imposed by the regulations will result in a rejection of the contention, the latter as an impermissible collateral attack on the Commission's rules").

<sup>13</sup> While one of the central purposes of NEPA is information gathering and disclosure, information immaterial to the proceeding does not necessarily need to be included. *See Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-29, 62 NRC 801, 811 (2005) ("There may, of course, be mistakes in the DEIS, but in an NRC adjudication, it is Intervenor's burden to show their significance and materiality. Our boards do not sit to 'flyspeck' environmental documents or to add details or nuances."); *see also Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002) ("NEPA does not call for examination of every conceivable aspect of federally licensed projects" (internal quotes omitted)).

Joint Petitioners assert repeatedly that the adverse impacts created by plant releases will fall disproportionately on the poor and minorities because most of those who eat more than 50 kg of fish per year are African American.<sup>14</sup> Without adverse effects, however, how those impacts are distributed is immaterial to this proceeding, and so the Joint Petitioners contention seeking further consideration of those impacts is not admissible.

In sum, Joint Petitioners have not provided sufficient relevant support in any of their three environmental justice arguments to show “some significant link between the claimed deficiency and either the health and safety of the public or the environment.” *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-04-14, 60 NRC 40, 56 (2004). Without this link, EC 2 does not assert an issue of law or fact that is material to the findings the NRC must make in this licensing proceeding and thus cannot be admitted. *See* 10 C.F.R. § 2.309(f)(1)(iv).

EC 3 — FAILURE TO EVALUATE WHETHER AND IN WHAT TIME  
FRAME SPENT FUEL GENERATED BY PROPOSED REACTORS CAN BE  
SAFELY DISPOSED OF

CONTENTION: The ER for the Vogtle ESP is deficient because it fails to discuss the environmental implications of the substantial likelihood that spent fuel generated by the new reactors will have to be stored at the Vogtle site for more than 30 years after the reactors cease to operate, and perhaps indefinitely. The Waste Confidence Decision does not support SNC’s failure to address this issue in the ER, because it has been outdated by changed circumstances and new and significant information. [(Footnote omitted.)] As required [by] NEPA, the NRC may not permit construction or operation of the new Vogtle reactors unless and until it has taken into account these changed circumstances and new and significant information. 10 C.F.R. § 51.92; *see also Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989).

DISCUSSION: Intervention Petition at 26-31; SNC Answer at 41-49; Staff Answer at 29-33; Joint Petitioners Reply at 25-27; Tr. at 148-52.

RULING: As both SNC and the Staff point out, this contention challenging the agency’s Waste Confidence Decision, which is embodied in 10 C.F.R. § 51.23, seemingly suffers from two potentially fatal deficiencies. First, it constitutes a challenge to an agency rule, which is not permitted in an agency adjudication. *See* 10 C.F.R. § 2.335(a); *see also Entergy Nuclear Vermont Yankee, LLC* (Vermont

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<sup>14</sup> Although Joint Petitioners seek to claim that low income is a relevant environmental justice factor in connection with subsistence fishing, ultimately their material does not support an argument that adverse impacts, were there any, fall disproportionately upon the area’s poor. *See* Burger Study at 431 (“There were few significant differences as a function of income”); *id.* at 436 (“Income did not enter any of the models independently as a significant variable”).

Yankee Nuclear Power Station), CLI-07-3, 65 NRC 13, 20 (2007) (contention seeking ER analysis of long-term effects of high-density pool spent fuel storage inappropriately challenges rule-based generic environmental findings for reactor life extension proceedings). Additionally, notwithstanding the fact the agency's procedural rules offer an opportunity to request a waiver or exception to the application of a rule in a particular adjudicatory proceeding, *see* 10 C.F.R. § 2.335(b); *see also Vermont Yankee*, CLI-07-3, 65 NRC at 20, the contention fails to address any of the elements required to seek and obtain such a waiver.

Apparently recognizing this difficulty, in their reply pleading Joint Petitioners indicated they intend to submit a rulemaking petition to the Commission in an attempt to have the Waste Confidence Decision reconsidered in light of what they assert is new and significant information regarding, among other things, (1) lack of any progress regarding a second high-level radioactive waste repository in addition to the proposed Yucca Mountain, Nevada facility; (2) the prospect that a number of new power reactors will be constructed and operated; and (3) whether, in light of the terrorist attacks of September 11, 2001, spent fuel can continue to be safely stored at existing power reactor sites during the lengthy period that will be required for a HLW repository to be licensed, constructed, and operated. Moreover, acknowledging their contention is likely to be dismissed from this proceeding, they request that the Board issue a ruling "retaining" them as parties in this proceeding pending agency completion of action on their rulemaking petition. *See* Joint Petitioners Reply at 27; *see also* Tr. at 149, 152. While we agree that Joint Petitioners issue statement EC 3 must be dismissed, we cannot agree to their request essentially to grant them provisional/conditional party status based on an anticipated (but as yet unrealized) challenge associated with possible agency action on a promised (but yet-to-be-submitted) rulemaking petition.<sup>15</sup>

#### EC 4 — FAILURE TO ADDRESS ENVIRONMENTAL IMPACTS OF INTENTIONAL ATTACKS

CONTENTION: The [ER] for the Vogtle ESP application is inadequate to satisfy [NEPA] and NRC regulation 10 C.F.R. § 51.45(b) and (c) for the following reasons:

(a) it fails to address the environmental impacts of intentional attacks on the proposed nuclear power plants, or to evaluate a reasonable range of alternatives for avoiding or mitigating those impacts.

(b) it fails to address the cumulative impacts of an intentional attack on the existing Plant Vogtle, or to evaluate a reasonable range of alternatives for avoiding or mitigating those impacts.

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<sup>15</sup> If a future rulemaking regarding the Waste Confidence Decision were instituted, presumably it would address how it should be applied to any pending proceedings.



DISCUSSION: Intervention Petition at 32-36; SNC Answer at 49-57; Staff Answer at 33-35; Joint Petitioners Reply at 27-29; SNC NEPA Terrorist Impacts Brief at 2-4; Staff NEPA Terrorist Impacts Brief at 2-4; Tr. at 152-61.

RULING: In various rulings, including its recent decision in the *Grand Gulf* ESP proceeding,<sup>16</sup> the Commission has made clear its position that a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility. To be sure, the ruling of the United States Court of Appeals for the Ninth Circuit in *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016 (9th Cir. 2006), *cert. denied*, \_\_ U.S. \_\_, 127 S. Ct. 1124 (2007), indicates that this Commission precedent is not applicable to independent spent fuel storage installation (ISFSI) licensing proceedings in the Ninth Circuit. At this juncture, however, as the Commission's *Grand Gulf* determination makes clear, the Board must, in this case being litigated far outside the boundaries of the Ninth Circuit, apply the Commission's existing case law directives.<sup>17</sup> As a consequence, we dismiss this contention,<sup>18</sup> finding it is outside the scope of this proceeding and fails to present a dispute regarding a material issue of law or fact.<sup>19</sup> See 10 C.F.R. § 2.309(f)(1)(iii), (vi).

#### EC 5 — FAILURE TO EVALUATE ENERGY ALTERNATIVES

CONTENTION: The ER for the Vogtle ESP is deficient because the Alternatives analysis is flawed on two accounts: First, it is based on premature and incomplete information that cannot be adequately assessed at this point in time, as Georgia Power has been ordered to submit a detailed assessment of the maximum achievable cost effective potential for energy efficiency and demand response programs in its service area in 2007. [(Footnote omitted.)] Second, it lacks a full and objective evaluation of all reasonable alternatives.

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<sup>16</sup> See *Grand Gulf*, CLI-07-10, 65 NRC at 146-47; see also *Palisades*, CLI-07-9; 65 NRC at 141-42; *Oyster Creek*, CLI-06-8, 65 NRC at 128-34; *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-02-27, 56 NRC 367, 371 (2002); *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 365-66 (2002); *Private Fuel Storage*, CLI-02-25, 56 NRC at 346-57; *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-24, 56 NRC 335, 338-39 (2002).

<sup>17</sup> Compare *Grand Gulf*, CLI-07-10, 65 NRC at 146-47, with *Diablo Canyon*, CLI-07-11, 65 NRC at 149-51.

<sup>18</sup> Although Joint Petitioners suggested that, in accord with 10 C.F.R. § 2.323(f), we refer any ruling dismissing this contention to the Commission for its further consideration, see Joint Petitioners Reply at 29, given the very recent vintage of the Commission decisions regarding this matter, see *supra* note 3, we decline to do so as it would serve no useful purpose at this point.

<sup>19</sup> In doing so, we also note that, unlike the *Diablo Canyon* ISFSI proceeding, this case concerns the licensing of a power reactor for which the ER already contains an analysis of the impacts of a beyond design basis severe accident, see ER at 7.2-1 to -8, that might envelop any impacts asserted to arise from a terrorism incident, see Tr. at 154-55; see also *Oyster Creek*, CLI-07-8, 65 NRC at 131.

DISCUSSION: Intervention Petition at 36-39; SNC Answer at 58-63; Staff Answer at 35-41; Joint Petitioners Reply at 29-34; Tr. at 161-85.

RULING: In their initial pleading in support of this contention, Joint Petitioners argue the ER is incomplete in that it neither takes into account the 2007 version of SNC corporate affiliate Georgia Power's Integrated Resources Plan (IRP), which was not due to be filed with state regulators until after the deadline for filing contentions in this proceeding, nor includes a complete assessment of all reasonable alternatives. Both SNC and the Staff oppose admitting this contention, arguing that it fails to meet the requirements of 10 C.F.R. § 2.309(f) because it raises issues that fall outside the scope of, or are not material to, these proceedings and because it fails to include sufficient information to show that a genuine dispute exists.

The first prong of the contention is the Joint Petitioners claim the information in the ER is "premature, and necessarily incomplete" because it does not include information subsequently submitted in the 2007 version of Georgia Power's IRP. Intervention Petition at 37. Joint Petitioners argue that "Georgia Power has been ordered to submit a detailed assessment of the maximum achievable cost effective potential for energy efficiency and demand response" in this document, *id.* at 36, and that the ER is incomplete because it does not reflect this assessment. Additionally, Joint Petitioners challenge the adequacy of the ER's analysis because (1) the 2004 IRP did not include nuclear power as an option for meeting identified future needs; and (2) the two proposed additional Vogtle units have not been approved by (or even been submitted for approval by) the Georgia Public Service Commission (GPSC). *See id.* at 38.

Both SNC and the Staff argue that this prong of the Joint Petitioners claim fails to satisfy the pleading requirements of 10 C.F.R. § 2.309 because it neither includes any specific challenge to the ER's need for power discussion nor provides any factual or legal citations to support the assertion the ER is deficient. Additionally, SNC notes the Commission has established that "a state-approved need for power analysis can serve as the basis for satisfying the Commission's need for power requirements" and that the current IRP was approved by state regulators as recently as 2006. SNC Answer at 59.

Initially, the Board notes that the ER, in an attempt to resolve this "need for power" issue now rather than awaiting the filing of a COL application relative to the proposed facilities, includes a section on the need for power in its "Energy Alternatives" analysis. As a consequence, SNC has opened the door for consideration and resolution of this issue as part of the ESP hearing process.<sup>20</sup>

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<sup>20</sup> Applicants are not required to evaluate the need for power at the ESP stage. 10 C.F.R. § 52.17(a)(2) (the "environmental report must focus on the environmental effects of the construction and operation of a reactor . . . and . . . need not include an assessment of the benefits (for example, need for power)"). In this case, however, SNC has chosen to include such an assessment.

The legal requirements for this analysis are found in 10 C.F.R. § 51.45(b)-(c) and are supplemented by NRC guidance that, although not legally binding, provides potential applicants with information about how to comply with regulatory requirements. *See* Regulatory Guide 4.2, at 9-1 to -4. This guidance specifies that an applicant must consider alternatives that do not require the creation of new power generating capacity to “support[] the justification for new generating capacity.” *Id.* at 9-1. The Standard Review Plan related to this guidance directs Staff reviewers to consider energy conservation as one such alternative. *See* NUREG-1555, at 9.2.1-1.

In the relevant ER section, SNC describes the methods used in its most recent IRP to assess potential energy conservation (i.e., demand side management, or DSM) measures and notes that “no new DSM programs were identified for development” to supplement those already in place. ER at 9.2-3. SNC also cites a report prepared for the state that concludes that energy conservation programs “are insufficient to meet future demand.” *Id.* at 9.2-4 (citing Intervention Petition, Exh. 5.2 (ICF Consulting, Georgia Environmental Facilities Authority Assessment of Energy Efficiency Potential in Georgia, Final Report (May 5, 2005)) [hereinafter ICF Report]).

Joint Petitioners present the ICF Report in support of their argument that a more complete analysis of the need for power is both possible and necessary. This position has some facial merit, in that GPSC has ordered Georgia Power to include an analysis resembling that in the ICF Report in the 2007 version of its IRP.<sup>21</sup> However, nothing presented in the Joint Petitioners pleadings or in its exhibits addresses the fundamental problem with the contention, which is the lack of “sufficient information to demonstrate that a genuine dispute exists . . . on a material issue of law or fact.” 10 C.F.R. § 2.309(f)(1)(vi).

Joint Petitioners provide no direct critique of the analysis currently in the ER and no factual or expert support for their claim that a new analysis would yield a materially different result. They do not even purport to do so, saying instead that the information in the ER “cannot be adequately assessed” until the 2007 IRP is

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<sup>21</sup> Intervention Petition, Exh. 5.1, at 4 (*In Re: Georgia Power Company Request for an Accounting Order*, Order (GPSC June 22, 2006)) (“Georgia Power Company’s filing in the 2007 IRP shall include a detailed assessment of the maximum achievable cost effective potential for energy efficiency and demand response programs in its service area. *Such assessment shall follow the scope and detail used in the May 5, 2005 Georgia Environmental Facilities Authority Final Report on Assessment of Energy Efficiency Potential in Georgia*” (emphasis added)). We note, in passing, that the participants represent the content of the ICF Report in very different ways. To SNC, the report says that “[e]nergy conservation would offset only a small fraction of the energy needed in the region.” ER at 9.2-4. To Joint Petitioners it says that “demand side resources could significantly offset the need for new capacity in the future.” Intervention Petition at 38. Neither provides support for its interpretation of the document. This difference, however, does not influence our decision. The document at issue here is the ER, not the ICF Report.

prepared according to the model of the ICF Report. Intervention Petition at 36. However, contentions in NRC proceedings are to be filed “based on documents or other information available at the time the petition is to be filed,” which at this stage in the proceeding means the most recent IRP filing as described in the ER. *See* 10 C.F.R. § 2.309(f)(2). The fact that a new analysis is being prepared, taken alone, does not provide support for the claim that the analysis in the ER is flawed. This problem was noted at oral argument by SNC’s counsel, who stated:

the fact that there’s still somebody working on demand-side options does not raise a question of fact regarding whether the conclusions in the ER are correct. I mean, if they think the conclusions in the ER are incorrect, they ought to tell us what their conclusion is and support it.

Tr. at 184. Similarly, the Joint Petitioners citation to a state order requiring a new analysis does not, without further explanation, point to any specific flaw in the existing analysis.

The Joint Petitioners argument is also flawed because a fully analyzed determination by the GPSC that nuclear power is an appropriate option for meeting future demand is not a relevant consideration in the context of an appropriate need-for-power analysis. In fact, the NRC’s concern in this context is whether there is a high-quality process for assessing the need for power in the jurisdiction in which a proposed facility is located. *See* NUREG-1555, at 8.2.1-1. Ultimately, in considering an authorization request for the two new Vogtle units, the GPSC might determine that, for any of a number of economic reasons, those facilities are, or are not, the appropriate generating source to meet any state-determined need for power. That, however, is not a determination that is within the scope of the NRC’s concerns in the context of its NEPA analysis. Rather, this agency is to evaluate the nature of the GPSC IRP process for assessing the need for power, which Joint Petitioners have not suggested is in any way inadequate in this case. (In fact, Joint Petitioners arguably have suggested the opposite by insisting the ongoing GPSC process be fully followed).

Thus, the portion of this contention based on the lack of a completed IRP process and GPSC approval of the proposed Vogtle facilities must be dismissed as outside the scope of the proceeding, 10 C.F.R. § 2.309(f)(1)(iii), and lacking adequate factual or expert opinion support, *id.* § 2.309(f)(1)(v), as well as for failing to bring forward relevant information sufficient to show that there is a material issue of fact or law, *id.* § 2.309(f)(1)(vi).

The second prong of the contention encompasses the first, but is considerably broader in that it challenges SNC’s overall presentation of alternatives to the proposed action under 10 C.F.R. § 51.45(b)-(c). As specified in Regulatory Guide 4.2, a complete analysis of alternatives includes consideration of alternatives such as DSM that do not require new generating capacity, as well as of alternatives

that do require new capacity. Regulatory Guide 4.2, at 9-1. The ER includes the consideration of a range of alternatives of the second type, including wind power, solar technologies, hydroelectric, geothermal, waste-to-energy, and several other power-generating technologies. ER at 9.2.-4 to -18. Joint Petitioners allege that this consideration is inadequate because (1) it does not include the potential for combined heat and power (CHP) generation;<sup>22</sup> (2) it does not include a sufficient analysis of biomass technologies and feedstocks; and (3) it makes erroneous claims regarding Integrated Gasification Combined Cycle (IGCC) plants. Intervention Petition at 39 n.47.

Joint Petitioners do not adequately support these allegations. With regard to CHP, Joint Petitioners allege that a discussion of it should have been included in the ER because there is a “technical potential” for up to 6445 MW of generating capacity in Georgia. Neither Joint Petitioners nor the slide presentation they rely upon explains either the significance or requirements of this generating capacity or why CHP should have been discussed as an alternative to nuclear power. In fact, Joint Petitioners do not include any other information regarding CHP. Their similarly brief discussion of the ER’s deficiencies regarding biomass and the risk assessment of IGCC plants also does not include any evidence or explanation of why the ER assessment is wrong. Instead, in support of the former, Joint Petitioners simply state that “[i]n Georgia, some biomass energy technologies, particularly those utilizing gasification technologies, along with some existing biomass feedstocks, such as pecan hulls, pine bark, and poultry litter, among others, could be more cost effective and should be studied as alternatives to new nuclear reactors,” while the latter is only explicated with the declaration that “an overall risk comparison has not been made available nor has it been reviewed yet by the [GPSC].” Intervention Petition at 39 n.47. More support than this is needed for an admissible contention.

The Joint Petitioners discussion of these alternatives also fails to show that including the omitted discussions would result in material changes to the ER’s analysis and thus be material to the decision before the Board. *See supra* note 13. The ER evaluates all power sources based upon base load power capacity, but Joint Petitioners neither discuss how CHP or biomass could be a base load power source nor challenge this evaluation. Without this, the SNC response that the mere potential for a decentralized, widely distributed power source or for biomass power does not mean those sources represent viable alternative sources of base load generating capacity, and so are immaterial, is persuasive. SNC Answer at 62. Similarly, Joint Petitioners never explain why a different risk assessment for

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<sup>22</sup> Joint Petitioners do not define this term, but SNC notes that it is usually interpreted to refer to small generating units, geographically disbursed and located near customers, that produce both heat and electrical power. *See* SNC Answer at 61-62.

IGCC plants would change the conclusions reached in the ER in any material way.

In short, Joint Petitioners have not provided sufficient argument or factual support in relation to either prong of this contention to demonstrate — to the preliminary extent required at the contention admissibility stage — that the alternatives analysis presented in the ER fails to comply with 10 C.F.R. § 51.45(b)-(c) or any associated guidance. In the absence of such a showing, the contention lacks sufficient factual or expert support and fails to assert any issue of law or fact that is material to the findings the NRC must make in this proceeding. For these reasons, it cannot be admitted. *See* 10 C.F.R. § 2.309(f)(1)(iv), (v).

### **III. PROCEDURAL/ADMINISTRATIVE MATTERS**

As indicated above, each of the Joint Petitioners is admitted as a party to this proceeding because they all have established standing and have set forth at least one admissible contention. Below is procedural guidance for further litigating the above-admitted contentions.

#### **A. General Guidance**

Unless all parties agree that this proceeding should be conducted pursuant to 10 C.F.R. Part 2, Subpart N, this proceeding will be conducted in accordance with the procedures of 10 C.F.R. Part 2, Subparts C and L. Assuming the parties currently do not consent to conducting this proceeding under Subpart N, the parties should conduct a meeting within 10 days of the date of this issuance to discuss their particular claims and defenses and the possibility of settlement or resolution of any part of the proceeding and to make arrangements for the required disclosures under 10 C.F.R. § 2.336(a).<sup>23</sup>

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<sup>23</sup> Among the items to be discussed is whether the Staff's section 2.336(b) hearing file can be provided electronically via the NRC Web site sooner than 30 days from the date of this issuance. In that regard, in accord with section 2.336(b), the Staff should create an electronic hearing file. The Staff shall make available to the parties and the Licensing Board a list that contains the ADAMS accession number, date and title of each item so as to make the item readily retrievable from the agency's Web site, *www.nrc.gov*, using the ADAMS "Find" function. Additionally, the Staff should create (or have created) a separate folder in the agency's Electronic Hearing Docket (EHD) associated with the Vogtle ESP proceeding. Thereafter, the Staff should provide notice to the other parties and the Licensing Board regarding the availability of the Hearing File materials in the EHD.

If the Staff thereafter provides any updates to the hearing file, it should place a copy of those items in the hearing file portion of the Vogtle ESP EHD folder and indicate it has done so in a notification regarding the update that is sent to the Licensing Board and the parties. Additionally, if at any juncture

*(Continued)*

The Board will oversee the discovery process through status reports and/or conferences, and expects that each of the parties will comply with the process to the maximum extent possible, with the understanding that failing to do so will result in appropriate Board sanctions.<sup>24</sup>

Pursuant to 10 C.F.R. § 2.332(d), the Board is to consider the Staff's projected schedule for completion of its safety and environmental evaluations in developing the hearing schedule. Accordingly, on or before *Friday, March 23, 2007*, the Staff shall submit to the Board through the E-Submittal system a written estimate of its projected schedule for completion of its safety and environmental evaluations, including but not limited to its best estimate of the dates for issuance of the draft and final safety evaluation reports and the draft and final environmental impact statements.

The Board will then conduct a prehearing conference call to discuss initial discovery disclosures, scheduling, and other matters on a date to be established by the Board in a subsequent order. The parties should be prepared to address the following matters at the prehearing conference call:

1. Estimates (discussed during their meeting) regarding exactly when this case will be ready to go to hearing and the time necessary to try each of the admitted contentions if they were to go to hearing.
2. Establishing time limits for updating mandatory disclosures under 10 C.F.R. § 2.336(d) and for updating the hearing file under 10 C.F.R. § 2.1203(c).
3. Whether any party intends to assert a privilege or protected status for any information or documents otherwise required to be disclosed herein and, if so, proposals for the submission of privilege logs under 10 C.F.R. § 2.336(a)(3), (b)(5), procedures and time limits for challenges to such assertions, and the development of a protective order and nondisclosure agreement.
4. Whether any of the parties anticipate submitting a motion for summary

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the Staff anticipates placing any nonpublic documents into the hearing file for this proceeding, it should promptly notify the Licensing Board of that intent prior to placing those documents into the Vogtle ESP EHD hearing file folder and await further instructions regarding those documents from the Licensing Board.

<sup>24</sup> In this regard, when a party claims a privilege and withholds information otherwise discoverable under the rules, the party shall expressly make the claim and describe the nature of what is not being disclosed to the extent that, without revealing what is sought to be protected, other parties will be able to determine the applicability of the privilege or protection. The claim and identification of privileged materials must occur within the time provided for disclosing withheld materials. *See* 10 C.F.R. § 2.336(a)(3), (b)(5).

disposition regarding any of the admitted contentions and the timing and page length of such a motion and responses thereto.

5. Establishing time limits for filing “timely” motions for leave to file new or amended contentions under 10 C.F.R. § 2.309(f)(2)(iii), and specifying pleading rules for motions for leave to file new or amended contentions that accommodate both 10 C.F.R. § 2.323 (motions and answers to motions) and *id.* § 2.309(h) (answers and replies to contentions).
6. Establishing time limits for various evidentiary hearing-related filings, including:
  - a. The final list of potential witnesses for each contention pursuant to 10 C.F.R. § 2.336(a)(1).
  - b. Any motion for the use of Subpart G hearing procedures pursuant to 10 C.F.R. § 2.310(d).
  - c. Any unanimous request, pursuant to 10 C.F.R. § 2.310(h), to handle any specific contention under 10 C.F.R. Part 2, Subpart N.
  - d. Any motion for cross-examination under 10 C.F.R. § 2.1204(b).
  - e. The parties’ initial written statements of position and written direct testimony with supporting affidavits pursuant to 10 C.F.R. § 2.1207(a)(1), along with consideration of (i) whether the parties should file simultaneously or sequentially, and, if sequentially, which party should file first; and (ii) the timing of filing of written responses, rebuttal testimony, and in limine motions relative to direct or rebuttal testimony.
7. The items outlined in 10 C.F.R. § 2.329(c)(1)-(3).
8. The possibility of settling any of the contentions, in whole or in part, including the status of any current settlement negotiations and the utility of appointing a settlement judge pursuant to 10 C.F.R. § 2.338(b).
9. Whether a site visit would be appropriate and helpful to the Board in the resolution of the contentions.
10. Any other procedural or scheduling matters the Board may deem appropriate.



**B. Certified Question to the Commission Regarding Proceeding with Merits Litigation on Admitted Environmental Contentions Following Issuance of the Staff's DEIS**

The agency's Part 2 rules of practice require licensing boards to "take into consideration the NRC staff's projected schedule for completion of its safety and environmental evaluations to ensure that the hearing schedule does not adversely impact the staff's ability to complete its reviews in a timely manner." 10 C.F.R. § 2.332(d). To this end, the regulations mandate that, unlike for safety issues, "[w]here an environmental impact statement (EIS) is involved, hearings on environmental issues addressed in the EIS may not commence before the issuance of the final EIS." *Id.* The Commission, however, has the authority to enter case-specific procedural orders to facilitate the efficient resolution of issues before a licensing board. *See Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-88-9, 28 NRC 567, 569 (1988) (noting "the Commission's inherent supervisory authority over the conduct of adjudicatory proceedings."); *see also, e.g., Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-3, 59 NRC 10, 16-21 (2004) (establishing general schedule for proceeding).

Given that the admitted issues in this case are all environmental, the Board believes that permitting litigation on the merits of these contentions to proceed following issuance of the DEIS, rather than awaiting the FEIS, could promote "the Commission's dual goals of public safety and timely adjudication." *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-26, 54 NRC 376, 381 (2001). In this proceeding, the DEIS currently is scheduled to be made publicly available in July 2007, while the FEIS is not due to be issued until May 2008. Given that any Board merits litigation-based findings have the effect of amending or supplementing the FEIS, *see Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-06-15, 63 NRC 687, 707 n.91 (2006), permitting merits litigation to proceed based on the DEIS thus could allow for a resolution of the contested portion of this proceeding a number of months earlier.<sup>25</sup>

In the recent *Louisiana Energy Services (LES)* litigation, without objection from the parties, the Licensing Board proceeded to litigate the merits of environmental contentions based on the DEIS, instead of awaiting the FEIS. *See Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 396 n.1 (2005). The Commission had discussed such a possibility in its notice of hearing, stating that the Board could start the evidentiary hearing without the final EIS or SER if the Board

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<sup>25</sup> Of course, as is the case in any proceeding, even if the current admitted contentions are resolved before the FEIS is issued so as to conclude the contested portion of this proceeding, Joint Petitioners (or anyone else) could timely seek to litigate contentions regarding FEIS data or conclusions that differ significantly from the ER or the DEIS. *See* 10 C.F.R. § 2.309(c), (f)(2).

in its discretion finds that starting the hearing with respect to one or more safety issues prior to issuance of the final SER (or one or more environmental contentions directed to the Applicant's Environmental Report) will expedite the proceeding without adversely impacting the Staff's ability to complete its evaluations in a timely manner.

*Louisiana Energy Services*, CLI-04-3, 59 NRC at 17 (footnote omitted). In its review of the Board's findings, the Commission did not speak to the propriety of the licensing board going forward based on the DEIS. *See Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-20, 62 NRC 523 (2005); *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-28, 62 NRC 721 (2005).

At the request of this Board, *see* Tr. at 185-87; Licensing Board Memorandum and Order (Submission of Joint Report Regarding Scheduling) (Feb. 16, 2007) (unpublished), the three participants in this proceeding submitted a joint response regarding permitting merits litigation on any admitted contentions to proceed based on the DEIS issued in this cause. *See* Joint Report Regarding Scheduling (Feb. 23, 2007). The Staff opposes this approach, writing that "[t]he Staff is of the view that NRC regulations do not provide for going to hearing on environmental issues in advance of the issuance of the final EIS." *Id.* at 1. The Staff finds the *LES* proceeding distinguishable from the current proceeding because of the specific authorization given in the *LES* notice of hearing. *See id.* at 3. Joint Petitioners concur with the Staff's argument, adding that "Joint Petitioners believe that expediting this ESP proceeding could potentially undermine its integrity." *Id.* at 4. Applicant SNC does not object to the use of the DEIS as the basis for going forward with an evidentiary hearing. It notes that while the procedural posture in *LES* was different, the Commission could choose to fashion a similar case-specific order in this proceeding because "the substantive reasons for proceeding to hearing on the DEIS in this proceeding (i.e., the need for expeditious decision-making) are as valid as those in *LES*." *Id.* at 5.

Under the circumstances, and for the reasons given above, pursuant to 10 C.F.R. §§ 2.319(l), 2.341(f), the Licensing Board thus certifies the following question for authoritative resolution by the Commission:

May the Vogtle ESP Licensing Board go forward with merits litigation on admitted environmental contentions in the proceeding such that any evidentiary hearing could be conducted following the issuance of the Staff's DEIS, as opposed to the FEIS?

#### IV. CONCLUSION

For the reasons set forth above, we find that each of the Joint Petitioners has established its standing to intervene and that they put forth two litigable

contentions so as to be entitled to party status in this proceeding. The text of their admitted contentions is set forth in Appendix A to this decision.

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For the foregoing reasons, it is this 12th day of March 2007, ORDERED, that:

1. Relative to the contentions specified in paragraph 2 below, the Joint Petitioners hearing request is *granted* and those petitioners are admitted as parties to this proceeding.

2. The following Joint Petitioner contentions are *admitted* for litigation in this proceeding: EC 1.2 and EC 1.3.

3. The following Joint Petitioner contentions are *rejected* as inadmissible for litigation in this proceeding: EC 1.1, EC 2, EC 3, EC 4, and EC 5.

4. The parties are to take the actions required by section III.A above in accordance with the schedule established herein.

5. In accordance with the provisions of 10 C.F.R. § 2.341(f), the question set forth in section III.B above is *certified* to the Commission.

6. In accordance with the provisions of 10 C.F.R. § 2.311, as it rules upon an intervention petition, any appeal to the Commission from this Memorandum and Order must be taken within ten (10) days after it is served.

THE ATOMIC SAFETY AND  
LICENSING BOARD<sup>26</sup>

G. Paul Bollwerk, III, Chairman  
ADMINISTRATIVE JUDGE

Nicholas G. Trikouros  
ADMINISTRATIVE JUDGE

James F. Jackson  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
March 12, 2007

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<sup>26</sup>Copies of this Memorandum and Order were sent this date by Internet e-mail transmission and the agency's E-Submittal system to counsel for (1) Applicant SNC; (2) Joint Petitioners; and (3) the Staff.

## **APPENDIX A**

### **ADMITTED CONTENTIONS**

#### **1. ENVIRONMENTAL CONTENTION (EC) 1.2 — ER FAILS TO IDENTIFY AND CONSIDER COOLING SYSTEM IMPACTS ON AQUATIC RESOURCES**

**CONTENTION:** The ER fails to identify and consider direct, indirect, and cumulative impingement/entrainment and chemical and thermal effluent discharge impacts of the proposed cooling system intake and discharge structures on aquatic resources.

#### **2. EC 1.3 — ER DRY COOLING SYSTEM ALTERNATIVES DISCUSSION FAILS TO ADDRESS AQUATIC SPECIES IMPACTS**

**CONTENTION:** The ER fails to satisfy 10 C.F.R. § 51.45(b)(3) because its analysis of the dry cooling alternative is inadequate to address the appropriateness of a dry cooling system given the presence of extremely sensitive biological resources.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD PANEL**

**Before Administrative Judges:**

**Ann Marshall Young, Chair  
Dr. Kaye D. Lathrop  
Dr. William W. Sager**

**In the Matter of**

**Docket Nos. 50-387-LR  
50-388-LR  
(ASLBP No. 07-851-01-LR-BD01)**

**PPL SUSQUEHANNA LLC  
(Susquehanna Steam Electric Station,  
Units 1 and 2)**

**March 22, 2007**

In this license renewal proceeding the Licensing Board finds that Petitioner has standing to intervene but has not submitted an admissible contention, and that the proceeding must therefore be terminated.

**RULES OF PRACTICE: STANDING TO INTERVENE;  
INTERVENTION**

A petitioner's standing, or right to participate in a Commission licensing proceeding, is derived from section 189a of the Atomic Energy Act (AEA), which requires the NRC to provide a hearing "upon the request of any person whose interest may be affected by the proceeding," and which has been implemented in Commission regulations as 10 C.F.R. § 2.309.

**RULES OF PRACTICE: STANDING TO INTERVENE;  
INTERVENTION**

Judicial concepts of standing, to which licensing boards are to look in ruling on standing, provide the following guidance in determining whether a petitioner has established the necessary “interest” under 10 C.F.R. § 2.309(d)(1): To qualify for standing a petitioner must allege (1) a concrete and particularized injury that is (2) fairly traceable to the challenged action and (3) likely to be redressed by a favorable decision, criteria commonly referred to, respectively, as “injury in fact,” causality, and redressability. The injury may be either actual or threatened, but must lie arguably within the “zone of interests” protected by the statutes governing the proceeding — here, either the Atomic Energy Act (AEA) or the National Environmental Policy Act (NEPA).

**RULES OF PRACTICE: STANDING TO INTERVENE;  
INTERVENTION**

Individual petitioners living within 50 miles of a nuclear power plant may establish standing based on a longstanding “proximity presumption” principle in NRC adjudicatory proceedings, under which the elements of standing will be presumed to be satisfied if an individual lives within the zone of possible harm from a significant source of radioactivity, in the geographical area that might be affected by an accidental release of fission products; this has been defined in proceedings involving nuclear power plants as being within a 50-mile radius of such a plant. Petitioner is found to have established individual standing because, although he resides 6 miles outside the 50-mile zone, his work regularly takes him within the area and will likely continue to do so in view of his residence so close to the area.

**RULES OF PRACTICE: STANDING TO INTERVENE;  
INTERVENTION**

An organization that wishes to establish standing to intervene may do so by demonstrating either organizational or representational standing. To establish organizational standing it must be shown that the interests of the organization will be harmed by the proceeding. To establish representational standing, (1) it must be demonstrated that the interests of at least one member who has standing to sue in his or her own right may be affected by the licensing action; (2) that member must be identified by name and address; and (3) it must be shown that the organization is authorized to request a hearing on behalf of that member. Petitioner is found not to have established standing on behalf of public interest group TMI Alert because (1) general policy interests alone are insufficient to

establish organizational standing, and (2) although the group asserted to have members living within 50 miles of the plant, none were identified by name and address, and no showing was made that any such individuals authorized the organization or Petitioner to act on their behalf.

#### **RULES OF PRACTICE: MOTIONS**

Petitioner's motion to compel Applicant to take certain actions prior to license renewal application is denied on its merits; had Petitioner consulted with the other parties prior to filing his motion, as required under 10 C.F.R. § 2.323(b), this step would have corrected his oversight of the true situation regarding subjects of motion.

#### **RULES OF PRACTICE: MOTIONS**

In ruling on Applicant's motion to strike portions of Petitioner's reply to Applicant's and NRC Staff's answers to the petition, the Licensing Board would not "strike from the record" any portions of the Petitioner's reply, because any part of a record, whether or not appropriately considered in making any rulings, may become relevant in an appeal. The Board would not, however, in making contention admissibility rulings, consider any new issues or claims raised in the reply, unless they would constitute timely filings under 10 C.F.R. § 2.309(c), (f)(2); the Board would consider only "legitimate amplification" of the original contention that focused on the legal, logical, and factual arguments presented in the answers of the Applicant and Staff.

#### **RULES OF PRACTICE: CONTENTIONS**

To intervene in an NRC proceeding, a petitioner must, in addition to demonstrating standing, submit at least one contention meeting the requirements of 10 C.F.R. § 2.309(f)(1). Failure of a contention to meet any of the requirements of section 2.309(f)(1) is grounds for its dismissal.

#### **RULES OF PRACTICE: CONTENTIONS**

The "strict contention rule serves multiple interests," including (1) focusing the hearing process on real disputes susceptible of resolution in an adjudication (for example, a petitioner may not demand an adjudicatory hearing to attack generic NRC requirements or regulations, or to express generalized grievances about NRC policies); (2) by requiring detailed pleadings, putting other parties in the proceeding on notice of the petitioners' specific grievances and thereby giving

them a good idea of the claims they will be either supporting or opposing; and (3) helping to ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions.

#### **RULES OF PRACTICE: CONTENTIONS**

Although the February 2004 revision of the NRC procedural rules no longer incorporates all of the prior provisions, including some of those formerly found in 10 C.F.R. § 2.714(a)(3), (b)(1), which in the past permitted the amendment and supplementation of petitions and filing of contentions after the original filing of petitions, the new rules contain essentially the same substantive admissibility standards for contentions.

#### **RULES OF PRACTICE: CONTENTIONS**

Under 10 C.F.R. § 2.309(f)(1)(vi), requiring the provision of sufficient information to show a genuine dispute with the applicant on a material issue of law or fact, a petitioner must read pertinent portions of the license application, including the safety analysis report and the environmental report (ER); state the applicant's position and the petitioner's opposing view; and explain why petitioner disagrees with the applicant. If a petitioner does not believe these materials address a relevant issue, petitioner must explain why the application is deficient. A contention must directly controvert a position taken by the applicant in the application, and an allegation that some aspect of a license application is "inadequate" or "unacceptable" does not give rise to a genuine dispute unless it is supported by facts and a reasoned statement of why the application is unacceptable in some material respect.

#### **RULES OF PRACTICE: CONTENTIONS; LICENSE RENEWAL**

Under 10 C.F.R. § 2.309(f)(1)(iv), a petitioner must demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding; the standards defining the findings the NRC must make to support a license renewal are set forth in 10 C.F.R. § 54.29.

#### **RULES OF PRACTICE: CONTENTIONS**

##### **LICENSE RENEWAL: SCOPE**

Under 10 C.F.R. § 2.309(f)(1)(iii), a contention must allege facts sufficient to establish that it falls directly within the scope of a proceeding. The scope of a



license renewal proceeding is addressed, with regard to safety-related issues, in 10 C.F.R. Part 54, and, with regard to environmental issues, in 10 C.F.R. Part 51.

#### **RULES OF PRACTICE: CONTENTIONS**

A contention that challenges any Commission rule or applicable statutory requirement is outside the scope of the proceeding. A petitioner may, however, within the adjudicatory context submit a request for waiver of a rule under 10 C.F.R. § 2.335, and outside the adjudicatory context file a petition for rulemaking under 10 C.F.R. § 2.802 or a request that the NRC Staff take enforcement action under 10 C.F.R. § 2.206.

#### **LICENSE RENEWAL: SCOPE, SAFETY-RELATED ISSUES**

As addressed in 10 C.F.R. Part 54 and described by the Commission in *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3 (2001), the NRC license renewal safety review is focused “upon those potential detrimental effects of aging that are not routinely addressed by ongoing regulatory oversight programs” (*id.* at 7), which the Commission considers “the most significant overall safety concern posed by extended reactor operation” (*id.*), and on “plant systems, structures, and components for which current [regulatory] activities and requirements may not be sufficient to manage the effects of aging in the period of extended operation” (*id.* at 10). An issue can be related to plant aging and still not warrant review at the time of a license renewal application, if an aging-related issue is “adequately dealt with by regulatory processes” on an ongoing basis. For example, if a structure or component is already required to be replaced “at mandated, specified time periods,” it would fall outside the scope of license renewal review.

#### **LICENSE RENEWAL: SCOPE, ENVIRONMENTAL ISSUES**

The regulatory provisions of 10 C.F.R. Part 51, relating to the environmental aspects of license renewal, arise out of the requirement that the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332(C), places on federal agencies to “include in every recommendation or report on . . . major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on . . . the environmental impact of the proposed action . . . .” As noted in *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989), the “statutory requirement that a federal agency contemplating a major action prepare such an environmental impact statement [EIS] serves NEPA’s ‘action-forcing’ purpose in two important respects. . . . It ensures that the agency,

in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.”

#### **LICENSE RENEWAL: SCOPE, ENVIRONMENTAL ISSUES**

Although the requirements of NEPA are directed to federal agencies and thus the primary duties of NEPA fall on the NRC Staff in NRC proceedings, the initial requirement to analyze the environmental impacts of an action, including license renewal, is directed to applicants, and 10 C.F.R. § 51.53(c) requires a license renewal applicant to submit with its application an environmental report (ER), which “must contain a description of the proposed action, including the applicant’s plans to modify the facility or its administrative control procedures as described in accordance with § 54.21,” and “describe in detail the modifications directly affecting the environment or affecting plant effluents that affect the environment.”

#### **LICENSE RENEWAL: SCOPE, ENVIRONMENTAL ISSUES**

Environmental issues identified as “category 1,” or “generic,” issues in 10 C.F.R. Part 51, Subpart A, Appendix B, are not within the scope of a license renewal proceeding. On these issues the Commission found that it could draw generic conclusions that are applicable to nuclear power plants generally. Thus these issues need not be repeatedly assessed on a plant-by-plant basis, and license renewal applicants may in their ERs refer to and adopt the generic environmental impact findings found in Table B-1, Appendix B, for all Category 1 issues, with the following exception: As required by 10 C.F.R. § 51.53(c)(3)(iv), ERs must also contain “any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware,” even if this concerns a Category 1 issue; but this is not a proper subject for a contention absent a waiver of the rule in 10 C.F.R. § 51.53(c)(3)(i) that Category 1 issues need not be addressed in a license renewal.

#### **LICENSE RENEWAL: SCOPE, ENVIRONMENTAL ISSUES**

The Commission was not able to make generic environmental findings on issues identified as “Category 2,” or “plant specific,” issues in 10 C.F.R. Part 51, Subpart A, Appendix B, and thus these issues are within the scope of license renewal, and applicants must provide a plant-specific review of them. These

issues are characterized by the Commission as involving environmental impact severity levels that could differ significantly from plant to plant, or impacts for which additional plant-specific mitigation measures should be considered.

**LICENSE RENEWAL: SCOPE, ENVIRONMENTAL ISSUES**

As required under 10 C.F.R. § 51.95(c), the Commission in 1996 adopted a “Generic Environmental Impact Statement for License Renewal of Nuclear Plants” (GEIS), published as NUREG-1437, which provides data supporting the table of Category 1 and 2 issues in Appendix B. Issuance of the 1996 GEIS was part of an amendment of the requirements of Part 51 undertaken by the Commission to establish environmental review requirements for license renewals “that were both efficient and more effectively focused.”

**LICENSE RENEWAL: SCOPE, ENVIRONMENTAL ISSUES**

Section 51.103 of 10 C.F.R. defines the requirements for the “record of decision” relating to any license renewal application, including the standard that the Commission, in making such a decision pursuant to Part 54, “shall determine whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.”

**RULES OF PRACTICE: CONTENTIONS; LICENSE RENEWAL**

A contention that Applicant failed to provide requisite data necessary to show it could maintain and service financial obligations inherited from the prior owner of a plant is denied, because Petitioner did not demonstrate that it met the scope, materiality, and genuine dispute requirements of 10 C.F.R. § 2.309(f)(1)(iii), (iv), and (vi), and the contention did not take into account financial assurances Applicant was required to provide as part of an earlier license transfer proceeding.

**RULES OF PRACTICE: CONTENTIONS; LICENSE RENEWAL**

A contention that Applicant failed to address various water use and indigenous aquatic issues is denied, because it was unsupported by any discussion of the sections of the ER addressing consumptive use of water, and because it did not show any specific or genuine dispute with these or any other section of the Application. Moreover, the plant in question is not the type of plant for which any Category 2 “aquatic ecology” items apply.

**RULES OF PRACTICE: CONTENTIONS**

The mere posing of questions does not provide sufficient support to demonstrate a genuine dispute under 10 C.F.R. § 2.309(f)(1)(vi).

**RULES OF PRACTICE: CONTENTIONS; LICENSE RENEWAL**

A contention that Applicant’s demographic profile was flawed and incomplete and failed to consider the aging population and workforce and impacts on social services, emergency planning, and other matters, is denied, because it did not address any issues involving the aging of any relevant plant systems, structures, or components, or any aging-management issues, nor did it fall within any Category 2 environmental issue, or controvert or challenge in any way the portion of the ER that addressed asserted Category 2 offsite land use issues.

**RULES OF PRACTICE: CONTENTIONS; LICENSE RENEWAL**

A contention alleging flawed tax analysis is denied because it is not within the scope of license renewal.

**RULES OF PRACTICE: CONTENTIONS**

A contention asserting violation of various emergency planning issues is denied because it is not within the scope of license renewal. Although some input data for severe accident mitigation alternatives analysis relating to emergency evacuation issues may be challenged in a license renewal proceeding, in this case Petitioner did not provide sufficient information on any such issues to show a genuine dispute with the Applicant.

**RULES OF PRACTICE: CONTENTIONS**

Judges are ethically required to base their rulings solely on the facts and law applicable in any given case, and thus, while licensing boards may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleading, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met boards may not “fill in” any missing support but rather are legally required to deny such contentions. A board’s responsibility to make contention admissibility rulings based on existing law and on what is provided by a petitioner in support of a contention is not suspended when a petitioner may have failed to comply with all relevant requirements as a result of not having a lawyer and not being skilled in the law himself, in part also because of requirements that a petitioner show “at least some minimal factual and legal

foundation” for a hearing focused on “real disputes susceptible of resolution in an adjudication.”

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**MEMORANDUM AND ORDER**  
**(Ruling on Standing and Contentions of Petitioner**  
**Eric Joseph Epstein)**

**I. INTRODUCTION**

This proceeding involves the application of PPL Susquehanna LLC [PPL], to renew its operating licenses for Units 1 and 2 of the Susquehanna Steam Electric Station [SSES] for additional 20-year periods. Eric Joseph Epstein has filed a petition to intervene,<sup>1</sup> in which he submits contentions raising certain financial, socioeconomic, water use, and emergency preparedness issues that are asserted to concern the proposed license renewal. In this Memorandum and Order, in addition to addressing two pending motions and summarizing some of the law that governs this proceeding and serves as context for our ultimate rulings on contention admissibility, we find that, while Petitioner Epstein has shown individual standing to participate in the proceeding, he has not submitted any admissible contentions. Thus, as we are required to do under relevant law, we dismiss his petition and terminate this proceeding.<sup>2</sup>

**II. BACKGROUND**

PPL submitted its application requesting renewal of Operating License Nos. NPF-14 and NPF-22 by letter dated September 13, 2006.<sup>3</sup> The current operating licenses expire on July 27, 2022, and March 23, 2024, respectively; the renewals would extend these by additional 20-year periods. The NRC published a notice of acceptance and docketing and opportunity for hearing regarding this license

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<sup>1</sup>We note that, despite the fact that in his Petition he discusses his standing not only on his own behalf but also on behalf of the organization Three Mile Island Alert, Inc. [hereinafter TMI Alert], Mr. Epstein styles his Petition in his own name only, *see infra* note 6, and we find therein no indication of any authorization for his representation of the group in this proceeding. For this reason, even though we address representational standing in our ruling in section III of this Memorandum and Order, we refer generally herein to a singular petitioner rather than to multiple petitioners.

<sup>2</sup>*See infra* note 286, for explanation and clarification of certain legal principles that underlie our rulings herein, provided in recognition of Petitioner's *pro se* status.

<sup>3</sup>Letter from Britt T. McKinney, PPL Susquehanna LLC, to U.S. NRC, Susquehanna Steam Electric Station Application for Renewed Operating Licenses Numbers NPF-14 and NPF-22 PLA-6110 (Sept. 13, 2006). Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML062620157, ML062630225, ML062630235.

renewal application (LRA or Application) on November 2, 2006,<sup>4</sup> and on December 21 published a correction to the notice, extending the comment period for public scoping for the Environmental Impact Statement to January 2, 2007.<sup>5</sup> Eric Joseph Epstein timely filed his petition to intervene on January 2, 2007.<sup>6</sup>

On January 18, 2007, this Atomic Safety and Licensing Board (Board) was established to preside over this adjudicatory proceeding, and on January 23 the Board issued an order providing guidance for the proceeding.<sup>7</sup> On January 29, 2007, the NRC Staff and PPL filed responses to the Petition To Intervene,<sup>8</sup> and on February 5, 2007, Petitioner Epstein filed a reply to these responses, along with a “Motion To Compel [PPL] to: (1) Apply for a Direct License Transfer (or Incorporate Modifications from an NRC Approved Transfer into the Relicensing Application) Prior to the Issuance of a Relicensing Application for the [SSES]; and, (2) Request and Receive a Scheduling [*sic*] Exemption To Proceed with a Premature Relicensing Application for the [SSES].”<sup>9</sup> PPL responded to Petitioner’s Motion To Compel on February 13, 2007, and the same day filed a “Motion To Strike Portions of Eric Epstein’s Response to Answers to Petition To

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<sup>4</sup>Notice of Acceptance for Docketing of the Application, Notice of Opportunity for Hearing and Notice of Intent To Prepare an Environmental Impact Statement and Conduct Scoping Process for Facility Operating License Nos. NPF-14 and NPF-22 for an Additional 20-Year Period PPL Susquehanna LLC, Susquehanna Steam Electric Station, Units 1 and 2, 71 Fed. Reg. 64,566 (Nov. 2, 2006).

<sup>5</sup>PPL Susquehanna, LLC; Notice of Correction to the Public Scoping Comment Period for the Environmental Impact Statement for the License Renewal of Susquehanna Steam Electric Station, Units 1 & 2, 71 Fed. Reg. 76,706 (Dec. 26, 2006). The deadline for filing a request for hearing/petition to intervene was stated correctly as January 2, 2007, in the first notice.

<sup>6</sup>Eric Joseph Epstein’s Petition for Leave To Intervene, Request for Hearing, and Presentation of Contentions with Supporting Factual Data (Jan. 2, 2007) [hereinafter Petition or Petition To Intervene].

<sup>7</sup>Licensing Board Order (Regarding Schedule and Guidance for Proceedings) (Jan. 23, 2007) (unpublished).

<sup>8</sup>NRC Staff Response to Eric Joseph Epstein’s Petition for Leave To Intervene, Request for Hearing, and Contentions (Jan. 29, 2007) [hereinafter Staff Response]. PPL Susquehanna’s Answer to Eric Epstein’s Petition for Leave To Intervene (Jan. 29, 2007) [hereinafter PPL Answer].

<sup>9</sup>Eric Joseph Epstein’s Response to PPL Susquehanna’s Answer to Eric Joseph Epstein’s Petition To Intervene and Eric Joseph Epstein’s Response to the NRC Staff’s Response to Eric Joseph Epstein’s Petition for Leave To Intervene, Request for Hearing and Contentions RE: PPL Susquehanna LLC Application for Susquehanna Steam Electric Stations Renewed Operating Licenses NPF-14 and NPF-22 Docket Nos. 50-387 PLA-6110 and 50-388 (Feb. 5, 2006) [hereinafter Epstein Reply]; Eric Joseph Epstein’s Motion To Compel [PPL] to: (1) Apply for a Direct License Transfer (or Incorporate Modifications from an NRC Approved Transfer into the Relicensing Application) Prior to the Issuance of a Relicensing Application for the [SSES]; and, (2) Request and Receive a Scheduling Exemption To Proceed with a Premature Relicensing Application for the [SSES] (Feb. 5, 2007) [hereinafter Motion To Compel].

Intervene.’’<sup>10</sup> The NRC Staff responded to the Motion To Compel on February 15, 2007.<sup>11</sup> Mr. Epstein filed his reply to PPL’s Motion To Strike on February 23, 2007.<sup>12</sup>

On February 28, 2007, the Board issued an order scheduling a telephone conference for March 8, to allow the participants to address various points in dispute.<sup>13</sup> During the conference, in addition to hearing limited argument on pending issues, the Board permitted the participants to submit certain additional information after the conference, namely, citations of: (1) any case law regarding standing and the “proximity presumption,”<sup>14</sup> and (2) any Category 2 issues listed in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, that are argued to be applicable to any of the contentions in the proceeding.<sup>15</sup> PPL and the Staff submitted filings on March 9, 2007,<sup>16</sup> and Mr. Epstein submitted his filing on March 11, 2007.<sup>17</sup> Thereafter, on March 15, 2007, the Staff filed a Motion To Strike Portions of Mr. Epstein’s Response to the Board’s Request for Information, and on March 20 Petitioner filed a Response to this motion.<sup>18</sup>

The participants have also filed other information related to this case with the Board for inclusion in the record of this proceeding. On January 3, 2007, Petitioner Epstein filed a notice of his submission, on behalf of Three Mile Island Alert Incorporated [TMI Alert], of comments in support of the Massachusetts Attorney General’s Petition for Rulemaking To Amend 10 C.F.R. Part 51, Docket No. PRM-51-10, regarding the treatment of high-density spent fuel storage in

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<sup>10</sup> [PPL]’s Answer to Eric Epstein’s Motion To Compel Application for License Transfer (Feb. 13, 2007) [hereinafter PPL Answer to Motion To Compel]; [PPL]’s Motion To Strike Portions of Eric Epstein’s Response to Answers to Petition To Intervene (Feb. 13, 2007) [hereinafter PPL Motion To Strike].

<sup>11</sup> NRC Staff Response to Eric Joseph Epstein’s Motion To Compel and Request for Scheduling Exemption (Feb. 15, 2007) [hereinafter Staff Response to Motion To Compel].

<sup>12</sup> Eric Joseph Epstein’s Response to PPL Susquehanna’s Motion To Strike Portions of Eric Epstein’s Response to Answers to Petition To Intervene (Feb. 23, 2007).

<sup>13</sup> Licensing Board Order (Scheduling Telephone Conference) (Feb. 28, 2007) (unpublished).

<sup>14</sup> Tr. at 13.

<sup>15</sup> *Id.* at 28-29.

<sup>16</sup> Letter from David R. Lewis, Counsel for PPL Susquehanna LLC, to the Licensing Board (Mar. 9, 2007) [PPL Citation Letter]; Letter from Jody C. Martin, Counsel for the NRC Staff, to the Licensing Board (Mar. 9, 2007) [Staff Citation Letter].

<sup>17</sup> Letter from Eric Joseph Epstein, Petitioner, to the Licensing Board (Mar. 11, 2007) [Epstein Citation Letter].

<sup>18</sup> Motion To Strike Portions of Mr. Epstein’s Response to the Board’s Request for Information (Mar. 15, 2007) [hereinafter Staff Motion To Strike]; Eric Joseph Epstein’s Response to the Nuclear Regulatory Commission Staff’s Motion To Strike [sic] Portions of Eric Joseph Epstein Response to the Atomic Safety and Licensing Board Panel’s Request for Information (Mar. 20, 2007) [hereinafter Petitioner’s Response to Staff Motion To Strike].



NEPA decisionmaking documents.<sup>19</sup> On February 28, 2007, Mr. Epstein filed an e-mail indicating that the Department of Homeland Security had acknowledged receipt of information from TMI Alert that relates to the subject matter of one of the contentions in this proceeding.<sup>20</sup> Finally, on March 15, 2007, counsel for the NRC Staff filed a letter informing the Board and the parties that a Notice of Opportunity for Hearing in the Susquehanna Extended Power Uprate (EPU) case was published in the *Federal Register* on March 13, 2007.<sup>21</sup>

### III. BOARD RULING ON STANDING OF PETITIONER TO PARTICIPATE IN PROCEEDING

A petitioner's standing, or right to participate in a Commission licensing proceeding, is derived from section 189a of the Atomic Energy Act (AEA), which requires the NRC to provide a hearing "upon the request of any person whose interest may be affected by the proceeding."<sup>22</sup> The Commission has implemented this requirement in its regulations as 10 C.F.R. § 2.309.<sup>23</sup>

When determining whether a petitioner has established the necessary "interest" under Commission rules, licensing boards are directed by Commission precedent to look to judicial concepts of standing for guidance.<sup>24</sup> Under this authority, in order to qualify for standing a petitioner must "(1) allege a concrete and particularized injury that is (2) fairly traceable to the challenged action and (3) likely to be redressed by a favorable decision" — three criteria commonly

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<sup>19</sup> Notice of Related Filing by Three Mile Island Alert Incorporated, with attachments (Jan. 31, 2007).

<sup>20</sup> E-mail from Eric Joseph Epstein, to Licensing Board, Notice of U.S. Department of Homeland Security, Office of Inspector General's Response to the Government Accountability Office Referral of Mr. Eric Joseph Epstein's Motions "Re: Special Needs' Emergency Planning as a Condition for a License" (Feb. 28, 2007) [Epstein Homeland Security E-mail].

<sup>21</sup> Letter from Jody Martin, Counsel for the NRC Staff, to the Licensing Board (Mar. 15, 2007) (citing 72 Fed. Reg. 11,383) [Staff EPU Letter].

<sup>22</sup> 42 U.S.C. § 2239(a)(1)(A) (2000).

<sup>23</sup> Subsection (d)(1) of 10 C.F.R. § 2.309 provides in relevant part that the Board shall consider three factors when deciding whether to grant standing to a petitioner: the nature of the petitioner's right under the AEA to be made a party to the proceeding; the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and the possible effect of any order that may be entered in the proceeding on the petitioner's interest. 10 C.F.R. § 2.309(d)(1)(ii)-(iv). The provisions of 10 C.F.R. § 2.309 were formerly found at 10 C.F.R. § 2.714, prior to a major revision of the Commission's procedural rules for adjudications in 2004.

<sup>24</sup> See, e.g., *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195 (1998); *Quivira Mining Co.* (Ambrosia Lake Facility, Grants, New Mexico), CLI-98-11, 48 NRC 1, 5-6 (1998); *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995).

referred to as “injury in fact,” causality, and redressability.<sup>25</sup> The requisite injury may be either actual or threatened,<sup>26</sup> but must arguably lie within the “zone of interests” protected by the statutes governing the proceeding — here, either the AEA or the National Environmental Policy Act (NEPA).<sup>27</sup> Additionally, Commission case law has established a “proximity presumption,” whereby an individual may satisfy these standing requirements by demonstrating that his or her residence is within the geographical area that might be affected by an accidental release of fission products, and in proceedings involving nuclear power plants this area has been defined as being within a 50-mile radius of such a plant.<sup>28</sup>

An organization that wishes to establish standing to intervene may do so by demonstrating either organizational standing or representational standing. In order to establish organizational standing it must show that the interests of the organization will be harmed by the proposed licensing action, while an organization seeking representational standing must demonstrate that the interests of at least one of its members will be so harmed.<sup>29</sup> To establish such representational standing, an organization must: (1) show that at least one of its members may be affected by the licensing action and, accordingly, would have standing to sue in his or her own right; (2) identify that member by name and address; and (3) show that the organization is authorized to request a hearing on behalf of that member.<sup>30</sup>

Petitioner Epstein asserts standing both on his own behalf and on behalf of the organization TMI Alert.<sup>31</sup> He argues that he is a residential customer and a shareholder of PPL, and that he has participated as a party and as a witness in

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<sup>25</sup> *Yankee*, CLI-98-21, 48 NRC at 195 (citing *Steel Co. v. Citizens for a Better Environment*, 523 U.S. 83, 102-04 (1998); *Kelley v. Selin*, 42 F.3d 1501, 1508 (6th Cir. 1995)).

<sup>26</sup> *Id.* (citing *Wilderness Society v. Griles*, 824 F.2d 4, 11 (D.C. Cir. 1987)).

<sup>27</sup> *Id.* at 195-96 (citing *Ambrosia Lake Facility*, CLI-98-11, 48 NRC at 6).

<sup>28</sup> See *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 146-50 (2001); *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979) (“close proximity [to a facility] has always been deemed to be enough, standing alone, to establish the requisite interest” to confer standing).

<sup>29</sup> See *Yankee*, CLI-98-21, 48 NRC at 195.

<sup>30</sup> See *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000).

<sup>31</sup> As indicated above, Petitioner does not indicate that the organization took any action to authorize his representation, but we nonetheless address herein the issue of its standing, assuming *arguendo* that such authorization was in fact actually given. Whether such authorization is a “curable” matter, such that a petitioner might show after the fact that such authorization was in fact given in some formal manner, would have likely been an issue that we would have requested argument and/or required briefing on, had it appeared likely that standing would otherwise have been found on the part of TMI Alert.

several other proceedings before state regulatory bodies.<sup>32</sup> Petitioner also argues that he has standing on behalf of TMI Alert both because the organization's interests are affected by the proposed licensing action<sup>33</sup> and because certain unnamed members of the organization reside within 50 miles of the plant.<sup>34</sup>

Both the NRC Staff and the Applicant disagree, claiming that Mr. Epstein does not have standing either as an individual or as a representative of TMI Alert. According to the Staff, "[t]he economic interests of a ratepayer are not within the zone of interests sought to be protected by the AEA" or of NEPA.<sup>35</sup> Additionally, argues the Staff, Mr. Epstein has not shown an injury-in-fact that can be traced to the proposed license renewal and has not even attempted to argue that he resides within the 50-mile radius required for the "proximity presumption" to apply.<sup>36</sup> Furthermore, the Staff asserts, Mr. Epstein fails both to demonstrate that TMI Alert has institutional interests that may be harmed by the licensing action and to identify organization members who live within 50 miles of the plant and who have authorized TMI Alert, and Petitioner Epstein on its behalf, to represent them.<sup>37</sup> PPL presents essentially the same arguments in support of its claim that Mr. Epstein lacks standing.<sup>38</sup>

In his Reply, Petitioner states that he lives "just outside of the proximity zone (approximately 56 miles from [SSES]), but works within 50 miles of the plant on a regular basis," providing as examples a date in January and two dates in February when he was in these locations.<sup>39</sup> He indicates that his consulting business regularly takes him to Hazleton, 15 miles from the plant; Fogelsville, 45 miles from the plant; and Allentown, 47 miles from the plant.<sup>40</sup> Also, in his argument during the March 8 telephone conference, Mr. Epstein provided additional information about the work he performs within 50 miles of the plant, stating that he makes four to six trips weekly to locations within the 50-mile radius in connection with his work for several organizations in the area, and that he has made such trips for the past 8 years.<sup>41</sup>

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<sup>32</sup> Petition at 4-7.

<sup>33</sup> Petition at 8-10.

<sup>34</sup> Epstein Reply at 11. Petitioner does not argue that he himself qualifies as such a member for purposes of representational standing.

<sup>35</sup> Staff Response at 3-4.

<sup>36</sup> *Id.* at 6-8.

<sup>37</sup> *Id.* at 8-9.

<sup>38</sup> PPL Answer at 2-6.

<sup>39</sup> Epstein Reply at 8.

<sup>40</sup> *Id.* Petitioner states that his consulting business, EFMR Monitoring Group, established in 1992, "monitors radiation levels, invests in community development, and sponsors remote robotics research." *Id.* at 8 n.3.

<sup>41</sup> Tr. at 14.

We find that Petitioner Epstein has not made the requisite showing to establish organizational or representational standing on the part of TMI Alert. General policy interests alone are not sufficient to establish organizational standing; rather, a petitioner seeking to show standing in this way must demonstrate a “discrete institutional injury” to the organization itself.<sup>42</sup> Petitioner has not done so here. Petitioner has also failed to make the case for representational standing because, although he asserts that TMI Alert has members who live within 50 miles of the plant, he has failed to identify such individuals or to show that the organization, or indeed he himself, is authorized to act on their behalf.<sup>43</sup> In order for an organization to qualify for the proximity presumption, a bare assertion that a member lives within 50 miles is not sufficient; any such member must be identified by name and address, and it must be shown (preferably by affidavit) that the organization is authorized to request a hearing on behalf of that member.<sup>44</sup> Based on the preceding, we find that Petitioner has failed to establish standing on the part of TMI Alert to participate in this proceeding.

We do, however, find that Petitioner Epstein has made a sufficient showing to establish standing for himself under the “proximity presumption.” Mr. Epstein admits that he resides more than 50 miles from the plant. However, significant contacts with an affected area can be sufficient to establish standing, even when full-time residence within the 50-mile zone is not shown.<sup>45</sup> While not all such intermittent contacts are sufficient to establish standing,<sup>46</sup> the regularity of Mr. Epstein’s trips to the area around the plant, for a number of years, weighs in his favor. In addition, he resides 6 miles outside the area in question<sup>47</sup> and can therefore be expected to continue to conduct business there in the future. Because of this pattern of regular contacts within the 50-mile radius around the plant, we find that Mr. Epstein has standing on his own behalf.

With regard to the Staff’s Motion To Strike, neither the information provided by Petitioner in his March 11 letter, nor the fact that he provided more than

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<sup>42</sup> *International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001).

<sup>43</sup> See Epstein Reply at 10 (asserting that TMI Alert’s membership list is proprietary).

<sup>44</sup> See *Oyster Creek*, CLI-00-6, 51 NRC at 202, and authorities cited therein.

<sup>45</sup> See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323-25 (1999) (frequent recreational use of a specific parcel of land sufficient to establish standing); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-98-13, 48 NRC 26, 31-32 (1998) (frequent, extended visits to relatives sufficient to establish standing); *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), CLI-93-16, 38 NRC 25, 35 (1993) (residence in a location 1 week per month sufficient to establish standing).

<sup>46</sup> See *Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1), LBP-02-14, 56 NRC 15 (2002) (occasional contact not sufficient to establish standing).

<sup>47</sup> Epstein Reply at 8.

the citations discussed in the March 8 telephone conference, alters our ruling on standing. Therefore there is no need for a ruling on this motion.

#### IV. BOARD RULINGS ON PENDING MOTIONS

##### A. Epstein Motion To Compel PPL To Apply for Direct License Transfer

As indicated above, Petitioner Epstein on February 5, 2007, filed a “Motion To Compel [PPL] to: (1) Apply for a Direct License Transfer (or Incorporate Modifications from an NRC Approved Transfer into the Relicensing Application) Prior to the Issuance of a Relicensing Application for the [SSES]; and, (2) Request and Receive a Scheduling Exemption To Proceed with a Premature Relicensing Application for the [SSES].” This motion is premised primarily on the Petitioner’s allegation that PPL has neither applied for nor received a license transfer from the preceding licensee for SSES, PPL Electric.<sup>48</sup> Petitioner also questions whether PPL qualifies as an “electric utility,”<sup>49</sup> and asserts that PPL must seek a “scheduling exemption” as a new licensee,<sup>50</sup> apparently believing that the transferred license in the hands of the new licensee is actually in the nature of a new license, with a term ending later than the original license.<sup>51</sup> Finally, Petitioner questions the financial impact of the license transfer on ratepayers.<sup>52</sup>

The NRC Staff opposes Petitioner’s Motion, noting that the NRC has in fact approved the transfer of the SSES operating licenses to PPL, that there is no requirement that an applicant be an electric utility, and that PPL’s license renewal application is timely.<sup>53</sup> PPL also points out the approval of the license transfer, and notes that Petitioner Epstein failed to make any effort to consult with the other parties prior to filing his motion, as required under 10 C.F.R. § 2.323(b), a step which, if taken, would have corrected his oversight of the transfer approval.<sup>54</sup>

We find that, indeed, such consultation should have provided Petitioner with

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<sup>48</sup> PPL Susquehanna, LLC, is a subsidiary of PPL Generation, LLC, which is a subsidiary of PPL Energy Supply, LLC, which is an indirect wholly owned subsidiary of PPL Corporation, an energy and utility holding company. *See* Motion To Compel at 4; Application § 1.1.3.

<sup>49</sup> Motion To Compel at 8, 10.

<sup>50</sup> *Id.* at 6, 8, 9.

<sup>51</sup> *Id.* at 9.

<sup>52</sup> *See id.* at 7.

<sup>53</sup> Staff Response to Motion To Compel at 3.

<sup>54</sup> PPL Response to Motion To Compel at 1. Section 2.323(b) requires any motion, other than one made orally on the record during a hearing or as otherwise directed by the presiding officer, to contain a certification that the movant has made a sincere effort to contact the other parties and resolve the matter, and that this effort was unsuccessful. 10 C.F.R. § 2.323(b).

knowledge of the true situation as regards the license transfer. As evidenced by publication in the *Federal Register*, the transfer of the SSES operating licenses to PPL was granted by the NRC in 2000, subject to certain conditions requiring PPL to provide various decommissioning and other funding assurances.<sup>55</sup> Moreover, a corporate restructuring undertaken by PPL while the application for license transfer was pending, adding PPL Energy Supply, LLC, as an intermediary, indirect parent of PPL Susquehanna, was approved by the Commission in 2001.<sup>56</sup> We note, with regard to both the application for approval of the license transfer and that for approval of the restructuring, that notice was provided to the public of the right to request a hearing,<sup>57</sup> but that in neither instance was any hearing request or comment filed.<sup>58</sup>

Consultation with the NRC Staff and/or PPL would have also made clear, with regard to PPL's status as a non-electric utility, (1) that a licensee need not be an electric utility, but (2) that a non-electric utility license applicant must meet heightened financial qualifications under 10 C.F.R. § 50.33(f).<sup>59</sup> As noted by the Staff and PPL, the Staff in reviewing PPL's license transfer application in fact found that PPL was not an "electric utility" under 10 C.F.R. § 50.2 and as a result conducted a more detailed review of PPL's financial qualifications under section 50.33(f) before the license transfer was approved.<sup>60</sup> This information might also have been provided to Petitioner, had he consulted with the other participants before filing his motion.

Finally, as the Staff points out, a license transfer does not result in a new

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<sup>55</sup> See PP&L, Inc. Allegheny Electric Cooperative, Inc. (Susquehanna Steam Electric Station, Units 1 and 2); Order Approving Transfer of Licenses and Conforming Amendments, 65 Fed. Reg. 37,418 (June 14, 2000). In approving the transfer the NRC found that, subject to the conditions spelled out in the Order, PPL met relevant requirements of section 184 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2243 (2000), and 10 C.F.R. § 50.80, which governs license transfers. *Id.* at 37,419. Further, consistent with 10 C.F.R. § 2.1315(b), all of the conforming license amendments required for this transfer were approved. *Id.*

<sup>56</sup> PPL Susquehanna, LLC, Allegheny Electric Cooperative, Inc. (Susquehanna Steam Electric Station, Units 1 and 2); Order Approving Application Regarding Proposed Corporate Restructuring, 66 Fed. Reg. 30,492 (June 6, 2001).

<sup>57</sup> See, respectively, PP&L, Inc., Susquehanna Steam Electric Station, Units 1 and 2; Notice of Consideration of Approval of Transfer of Facility Operating Licenses and Conforming Amendments, and Opportunity for Hearing, 65 Fed. Reg. 11,611 (Mar. 3, 2000); PPL Susquehanna, LLC, Susquehanna Steam Electric Station, Units 1 and 2; Notice of Consideration of Approval of Application Regarding Proposed Corporate Restructuring and Opportunity for Hearing, 66 Fed. Reg. 20,839 (Apr. 25, 2001).

<sup>58</sup> See, respectively, 65 Fed. Reg. at 37,419; 66 Fed. Reg. at 30,492.

<sup>59</sup> See Staff Response to Motion To Compel at 5; PPL Answer at 16-17.

<sup>60</sup> See Safety Evaluation by the Office of Nuclear Reactor Regulation Proposed Transfer of Licenses to the Extent Held by PP&L, Inc., to PPL Susquehanna, LLC, Section 2.0, Financial Qualifications Analysis (June 6, 2000) ADAMS Accession No. ML003720494; Staff Response to Motion To Compel at 5 & n.10; PPL Answer at 16 & n.6.

license with a new term, but results merely in an amendment of the original license, with the same term, and with the new licensee “stepping into the shoes” of the original licensee.<sup>61</sup> Under 10 C.F.R. § 54.17(c), the time frame for filing a license renewal application is no more than 20 years prior to the expiration of the current operating license, and thus PPL’s Application was timely.<sup>62</sup>

Based on the preceding, we find Petitioner’s “Motion To Compel” lacks merit and deny it.

### **B. PPL Motion To Strike Portions of Petitioner’s Reply**

PPL on February 13, 2007, filed a motion to strike portions of Petitioner’s Reply to PPL’s Answer and the Staff’s Response to the Petition in this proceeding, focusing in particular on those portions “that seek to raise safety and aging management issues under the ambit of Mr. Epstein’s Contention 2.”<sup>63</sup> PPL contends that such issues are “entirely new” and “not found in [Petitioner’s] original contention.”<sup>64</sup> We note that in Contention 2 Petitioner alleges that “PPL failed to factor, consider and address numerous water use and indigenous aquatic challenges present and anticipated for the Susquehanna River.”<sup>65</sup>

PPL observes that the Commission’s rules<sup>66</sup> do not specify the content of a petitioner’s reply to answers to a petition, but argues that “other provisions of Part 2, the Statement of Considerations published with the final rule, and Commission precedent make clear that a reply to an answer is to ‘be narrowly focused on the legal or logical arguments presented’ in the answers of the applicant/licensee and NRC Staff.”<sup>67</sup> PPL also cites Commission case law to the effect that “a reply to an answer may not be used as a vehicle to raise new arguments or claims not found in the original contention or be used to cure an otherwise deficient contention.”<sup>68</sup> The licensing board in the *LES* case had, in rejecting four contentions filed by the State of New Mexico Environment Department and the New Mexico Attorney General, “declined to consider new ‘purportedly material’ information in support of the contentions that was first submitted as part of a reply pleading.”<sup>69</sup> On

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<sup>61</sup> Staff Response to Motion To Compel at 6.

<sup>62</sup> *See supra* section II.

<sup>63</sup> PPL Motion To Strike at 1.

<sup>64</sup> *Id.*

<sup>65</sup> Petition at 23.

<sup>66</sup> Under 10 C.F.R. § 2.309(h)(2), a petitioner may file a reply to any answer within 7 days after service of that answer.

<sup>67</sup> PPL Motion To Strike at 3 (citing 69 Fed. Reg. 2182, 2203 (Jan. 14, 2004)).

<sup>68</sup> *Id.* (citing *Louisiana Energy Services, L.P.* (National Enrichment Facility) [*LES*], CLI-04-25, 60 NRC 223, 225, *reconsideration denied*, CLI-04-35, 60 NRC 619 (2004)).

<sup>69</sup> *Id.* (citing *LES*, CLI-04-25, 60 NRC at 224).

appeal the Commission agreed with the board that “the reply briefs constituted a late attempt to reinvigorate thinly supported contentions by presenting entirely new arguments in the reply briefs.”<sup>70</sup>

PPL quotes various portions of the Commission’s rulings in the *LES* case, including its admonition that “[w]hat our rules do not allow is using reply briefs to provide, for the first time, the necessary threshold support for contentions.”<sup>71</sup> Arguing that Petitioner’s Reply “clearly runs afoul” of this precedent,<sup>72</sup> PPL moves that we “strike all portions of the Reply that attempt to raise aging management or safety issues under the ambit of Contention 2, including all claims concerning (1) aging management; (2) inspection of systems and components that contain radioactively contaminated water; (3) monitoring for leakage; and (4) a tritium action plan.”<sup>73</sup>

Petitioner responds to PPL’s motion by indicating that in his Reply he was in effect replying to PPL’s comments that he had been “vague” in his Petition, arguing that he had “cured all three purported shortcomings [raised by PPL], and now PPL seeks to strike what it requested from Mr. Epstein.”<sup>74</sup> As an example of this, he notes his “rhetorical Question 7, which PPL sought to have refined,” and claims to have “presented a cogent presentation related to tritium monitoring in his Response (pp. 20-23) to PPL’s concern about the ‘vague’ representations contained in his rhetorical questions.”<sup>75</sup> Petitioner also argues that “[c]learly, water use and aquatic challenges have been a consistent thread in Mr. Epstein’s representations dating back to the November 15, 2006 scoping hearing in Berwick, Pennsylvania.”<sup>76</sup> Continuing, he asserts that “[a]t the heart of . . . Contention 2 are acts of omission by the licensee during the filing of the SSES relicensing application,” and makes various arguments about NRC licensees being required to meet NRC regulations, and related matters.<sup>77</sup>

Petitioner argues that the issues he raises in the contention are significant and refers to some of the information he submitted in his Reply as evidence of this.<sup>78</sup> This information includes allegations that PPL’s Application had failed to include certain information in a December 20, 2006, water use permit application to the Susquehanna River Basin Commission (SRBC) regarding “corrosion and fouling

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<sup>70</sup> *Id.* at 3-4 (citing *LES*, CLI-04-25, 60 NRC at 224).

<sup>71</sup> *Id.* at 5 (citing *LES*, CLI-04-35, 60 NRC at 623).

<sup>72</sup> *Id.* at 5.

<sup>73</sup> *Id.* at 7.

<sup>74</sup> Petitioner’s Response to Motion To Strike at 4-5; *see* PPL Motion To Strike at 3-4.

<sup>75</sup> Petitioner’s Response to Motion To Strike at 6.

<sup>76</sup> *Id.*

<sup>77</sup> *Id.* at 7.

<sup>78</sup> *See id.* at 8-10.



of [water] intake pipes,”<sup>79</sup> which Petitioner states he did not “‘discover’ until after his January 2, 2007, Petition to Intervene was filed.”<sup>80</sup> Petitioner states that this matter, which “PPL has publicly announced,” is a “significant technical problem with health and safety implications that needs to be investigated prior to issuing a 20-year extension,”<sup>81</sup> and urges the NRC not to “excuse PPL’s omissions” or “penalize Mr. Epstein because PPL withheld information in its possession that had a direct bearing on the issues he raised in Contention 2.”<sup>82</sup>

We note in ruling on PPL’s motion the determination upheld by the Commission in the *LES* case that, although that board would take into account any information from reply briefs that “legitimately amplified” issues presented in original petitions in that case, it would not consider instances of what “essentially constituted untimely attempts to amend their original petitions.”<sup>83</sup> Because the reply briefs in *LES* had not been accompanied by any attempt to address the late- and new-filing factors of section 2.309(c), (f)(2), they were not considered in determining the admissibility of the contentions.<sup>84</sup> However, the Commission later remanded to the Licensing Board a request to consider several previously rejected contentions under the late- and new-filing criteria of 10 C.F.R. § 2.309(c), (f)(2), despite the fact that the Petitioner therein had addressed such criteria for the first time only in its interlocutory appeal to the Commission.<sup>85</sup> For this reason, in an abundance of caution and in order to give the Petitioner every appropriate benefit of the doubt, we have also considered in making our rulings herein whether any of the later-filed support for Contention 2 might be admissible under the late- and new-filing criteria of 10 C.F.R. § 2.309(c), (f)(2).

Based on the Commission’s rulings in *LES*, while we will not “strike from the record” any portions of the Petitioner’s Reply,<sup>86</sup> we also will not, in ruling on the admissibility of Contention 2, consider anything in the Reply that does not

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<sup>79</sup> Epstein Reply at 23; *see* Tr. at 23.

<sup>80</sup> Petitioner’s Response to Motion To Strike at 10.

<sup>81</sup> *Id.*

<sup>82</sup> *Id.* at 11.

<sup>83</sup> *LES*, CLI-04-25, 60 NRC at 224; *see LES*, CLI-04-35, 60 NRC at 625. We note that the Commission in both *LES* rulings pointed out that a petitioner may in instances of exigent or unavoidable circumstances file a request for an extension of time to file an original hearing petition and contentions, an action which, as in this proceeding, was not done in *LES*. *LES*, CLI-04-25, 60 NRC at 225; *LES*, CLI-04-35, 60 NRC at 623 (citing 69 Fed. Reg. at 2200).

<sup>84</sup> *See LES*, CLI-04-25, 60 NRC at 224 (citing *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-04-14, 60 NRC 40, 58 (2004)).

<sup>85</sup> *LES*, CLI-04-35, 60 NRC at 625.

<sup>86</sup> It would be inappropriate actually to “strike” anything from the record in this proceeding, as any part of the record, whether included in that which we do consider herein, or not, may become relevant in any appeal. Therefore, while we will not consider any information that would be inappropriate under relevant law, we will retain in the record other submitted information, for appeal purposes.

focus on the matters raised in the Answers, as permitted by the Commission. It is appropriate, however, for a reply to respond to the legal, logical, and factual arguments presented in the answers, so long as new issues are not raised.<sup>87</sup> Thus, except to the extent necessary to elucidate and explain specific rulings regarding various pieces of information, in determining the admissibility of Contention 2 we have not considered any information in Petitioner's Reply other than that which would constitute "legitimate amplification," appropriate responses to arguments raised in the answers, or properly late- or newly filed<sup>88</sup> material. The extent to which any part of the Reply has been considered, and for what purposes, should be obvious in our discussion of the contention.

## V. STANDARDS FOR ADMISSIBILITY OF CONTENTIONS IN LICENSE RENEWAL PROCEEDINGS

### A. Regulatory Requirements on Contentions

As has previously been noted in a number of NRC adjudication proceedings,<sup>89</sup> to intervene in an NRC proceeding, a petitioner must, in addition to demonstrating standing, submit at least one contention meeting the requirements of 10 C.F.R. § 2.309(f)(1).<sup>90</sup> Failure of a contention to meet any of the requirements of section

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<sup>87</sup> See *LES*, CLI-04-25, 60 NRC at 225 (quoting Final Rule: "Changes to the Adjudicatory Process," 69 Fed. Reg. 2182, 2203 (Jan. 14, 2004) (reply must be "narrowly focused on the legal or logical arguments presented in the applicant/licensee or NRC staff answer")); *Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006) ("Replies must focus narrowly on the legal or factual arguments first presented in the original petition or raised in the answers to it").

<sup>88</sup> See 10 C.F.R. § 2.309(c), (f)(2).

<sup>89</sup> See, e.g., *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 NRC 257, 272-74 (2006). An Appendix to the *Pilgrim* decision provides a more detailed summary of relevant case law on contention admissibility than that found in this Memorandum and Order. See *id.* at 351-59.

<sup>90</sup> See 10 C.F.R. § 2.309(a). Section 2.309(f)(1) states that:

(1) A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised. For each contention, the request or petition must:

- (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
- (ii) Provide a brief explanation of the basis for the contention;
- (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;
- (iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;
- (v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(Continued)

2.309(f)(1) is grounds for its dismissal.<sup>91</sup> Heightened standards for the admissibility of contentions originally came into being in 1989, when the Commission amended its rules to “raise the threshold for the admission of contentions.”<sup>92</sup> The Commission has stated that the “contention rule is strict by design,” having been “toughened . . . in 1989 because in prior years ‘licensing boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation.’”<sup>93</sup> More recent amendments to the NRC procedural rules,<sup>94</sup> which went into effect in 2004, restricted the contention admissibility rule even further,<sup>95</sup> and contain various changes to provisions relating to the hearing process.<sup>96</sup> They contain essentially the same substantive admissibility standards for contentions, however.

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(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to the specific portions of the application (including the applicant’s environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner’s belief.

<sup>91</sup> See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

<sup>92</sup> Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,168 (Aug. 11, 1989); see also *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999).

<sup>93</sup> *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001) (citing *Oconee*, CLI-99-11, 49 NRC at 334).

<sup>94</sup> See 69 Fed. Reg. at 2182.

<sup>95</sup> For example, the current version of the rules no longer incorporates provisions formerly found in 10 C.F.R. § 2.714(a)(3), (b)(1), which permitted the supplementation of petitions and the filing of contentions after the original filing of petitions. Under the current rules, contentions must be filed with the original petition within 60 days of notice of the proceeding in the *Federal Register*, unless a longer period is therein specified, an extension is granted, see *supra* note 83, or the contentions meet certain criteria for late-filed or new contentions based on information that is available only at a later time, see 10 C.F.R. §§ 2.309(b)(3)(iii), (c), (f)(2).

<sup>96</sup> In this connection we note that a challenge to the new rules by several public interest groups (supported by several states including Massachusetts) was rejected in the case of *Citizens Awareness Network, Inc. v. NRC* [*CAN v. NRC*], 391 F.3d 338 (1st Cir. 2004). The Court denied the petitions for review, on the basis that the new procedures “comply with the relevant provisions of the [Federal Administrative Procedure Act (APA)] and that the Commission has furnished an adequate explanation for the changes,” as well as on the basis of the NRC’s representation that the opportunity for cross-examination under 10 C.F.R. § 2.1204(b)(3) of Subpart L is equivalent to the opportunity for cross-examination under the [APA], 5 U.S.C. § 556(d), i.e., that cross-examination is available whenever it is “required for a full and fair adjudication of the facts.” *Id.* at 343, 351.

The Commission has explained that the “strict contention rule serves multiple interests.”<sup>97</sup> These include the following (quoted in list form):

First, it focuses the hearing process on real disputes susceptible of resolution in an adjudication. For example, a petitioner may not demand an adjudicatory hearing to attack generic NRC requirements or regulations, or to express generalized grievances about NRC policies.

Second, the rule’s requirement of detailed pleadings puts other parties in the proceeding on notice of the Petitioners’ specific grievances and thus gives them a good idea of the claims they will be either supporting or opposing.

Finally, the rule helps to ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions.<sup>98</sup>

In its Statement of Considerations adopting the most recent revision of the rules, the Commission reiterated the same principles that previously applied; namely, that “[t]he threshold standard is necessary to ensure that hearings cover only genuine and pertinent issues of concern and that the issues are framed and supported concisely enough at the outset to ensure that the proceedings are effective and focused on real, concrete issues.”<sup>99</sup> Additional guidance with respect to each of the requirements of subsections (i) through (vi) of section 2.309(f)(1) is found in NRC case law, familiarity with which can be significant to the matter of whether a contention will be admitted or denied.

Our rulings on the contentions submitted by Petitioner rest primarily on subsections (iii), (iv), and (vi) of 10 C.F.R. § 2.309(f)(1). Under subsection (iii), a contention must allege facts “sufficient to establish that it falls directly within the scope of [a proceeding],”<sup>100</sup> and is not cognizable unless it is material to matters that fall within the scope of the proceeding for which the licensing board has been delegated jurisdiction.<sup>101</sup> The Commission has addressed the scope of license renewal proceedings in a number of contexts, which we discuss in some detail in section V.B, below. Also, a contention that challenges any Commission

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<sup>97</sup> *Oconee*, CLI-99-11, 49 NRC at 334.

<sup>98</sup> *Id.* (citations omitted).

<sup>99</sup> 69 Fed. Reg. at 2189-90.

<sup>100</sup> *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), LBP-91-19, 33 NRC 397, 412 (1991), *appeal denied on other grounds*, CLI-91-12, 34 NRC 149 (1991).

<sup>101</sup> *See Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790-91 (1985); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976); *see also Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 426-27 (1980); *Commonwealth Edison Co.* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980).

rule is outside the scope of the proceeding because, absent a waiver, “no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding.”<sup>102</sup> Similarly, any contention that amounts to an attack on applicable statutory requirements must be rejected by a licensing board as outside the scope of the proceeding.<sup>103</sup> A petitioner may, however, within the adjudicatory context submit a request for waiver of a rule under 10 C.F.R. § 2.335, and outside the adjudicatory context file a petition for rulemaking under 10 C.F.R. § 2.802 or a request that the NRC Staff take enforcement action under 10 C.F.R. § 2.206.

Under 10 C.F.R. § 2.309(f)(1)(iv), a petitioner must “[d]emonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding,” and the standards defining the “findings the NRC must make to support” a license renewal are set forth at 10 C.F.R. § 54.29. This section, entitled, “Standards for issuance of a renewed license,” provides that:

A renewed license may be issued by the Commission up to the full term authorized by § 54.31 if the Commission finds that:

(a) Actions have been identified and have been or will be taken with respect to the matters identified in Paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB,<sup>104</sup> and that any changes made to the plant’s CLB in order to comply with this paragraph are in accord with the Act and the Commission’s regulations. These matters are:

(1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under § 54.21(a)(1); and

(2) time-limited aging analyses that have been identified to require review under § 54.21(c).

(b) Any applicable requirements of Subpart A of 10 CFR Part 51 have been satisfied.

(c) Any matters raised under § 2.335 have been addressed.<sup>105</sup>

We discuss the aging and environmental issues that fall under section 54.29 below in section V.B of this Memorandum.

On the requirement of 10 C.F.R. § 2.309(f)(1)(vi) that a petitioner “[p]rovide sufficient information to show . . . a genuine dispute . . . with the applicant . . . on a material issue of law or fact,” the Commission has stated that the

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<sup>102</sup> 10 C.F.R. § 2.335(a).

<sup>103</sup> *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974).

<sup>104</sup> “CLB” refers to a plant’s current licensing basis. *See infra* note 118.

<sup>105</sup> 10 C.F.R. § 54.29.

petitioner must “read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant’s position and the petitioner’s opposing view,” and explain why it disagrees with the applicant.<sup>106</sup> If a petitioner does not believe these materials address a relevant issue, the petitioner is to “explain why the application is deficient.”<sup>107</sup> A contention that does not directly controvert *a position taken by the applicant in the application* is subject to dismissal.<sup>108</sup> For example, an allegation that some aspect of a license application is “inadequate” or “unacceptable” does not give rise to a genuine dispute unless it is supported by facts and a reasoned statement of why the application is unacceptable in some material respect.<sup>109</sup>

## **B. Scope of Subjects Admissible in License Renewal Proceedings**

As noted in previous NRC proceedings,<sup>110</sup> Commission regulations and case law address in some detail the scope of license renewal proceedings, which generally concern requests to renew 40-year reactor operating licenses for additional 20-year terms.<sup>111</sup> The regulatory authority relating to license renewal is found in 10 C.F.R. Parts 51 and 54. Part 54 concerns the “Requirements for Renewal of Operating Licenses for Nuclear Power Plants,” and addresses safety-related issues in license renewal proceedings. Part 51, concerning “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” addresses, among other things, the environmental aspects of license renewal. The Commission has interpreted these provisions in various adjudicatory proceedings, probably most extensively in a decision in the 2001 *Turkey Point* proceeding.<sup>112</sup>

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<sup>106</sup> 54 Fed. Reg. at 33,170; *Millstone*, CLI-01-24, 54 NRC at 358.

<sup>107</sup> 54 Fed. Reg. at 33,170; *Palo Verde*, CLI-91-12, 34 NRC at 156.

<sup>108</sup> See *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992).

<sup>109</sup> See *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-90-16, 31 NRC 509, 521 & n.12 (1990).

<sup>110</sup> See, e.g., *Pilgrim*, LBP-06-23, 64 NRC at 274-80.

<sup>111</sup> Section 54.31(b) of 10 C.F.R. provides that:

[a] renewed license will be issued for a fixed period of time, which is the sum of the additional amount of time beyond the expiration of the operating license (not to exceed 20 years) that is requested in a renewal application plus the remaining number of years on the operating license currently in effect. The term of any renewed license may not exceed 40 years.

Section 50.51(a) states in relevant part that “[e]ach [original] license will be issued for a fixed period of time to be specified in the license but in no case to exceed 40 years from date of issuance.”

<sup>112</sup> See *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 6-13 (2001); see also *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 363-65 (2002); *Baltimore* (Continued)

## 1. Safety-Related Issues in License Renewal Proceedings

Various sections of Part 54 speak to the scope of safety-related issues in license renewal proceedings. First, 10 C.F.R. § 54.4, titled “Scope,” specifies the plant systems, structures, and components that are within the ambit of Part 54.<sup>113</sup> Sections 54.3 (containing definitions), 54.21 (addressing technical information to be included in an application and further identifying relevant structures and components), and 54.29 (stating, as indicated above, the “Standards for issuance of a renewed license”) provide additional definition of what is encompassed within a license renewal review, limiting the scope to aging-management issues and some “time-limited aging analyses” that are associated with the functions of relevant plant systems, structures, and components.<sup>114</sup> Applicants must “demonstrate how their programs will be effective in managing the effects of aging during the proposed period of extended operation,” at a “detailed . . . ‘component and structure level,’ rather than at a more generalized ‘system level.’”<sup>115</sup>

The Commission in *Turkey Point* stated that, in developing 10 C.F.R. Part 54 beginning in the 1980s, it sought “to develop a process that would be both

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*Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 NRC 39, 41 (1998), *motion to vacate denied*, CLI-98-15, 48 NRC 45 (1998); *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-98-17, 48 NRC 123, 125 (1998); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-00-23, 52 NRC 327, 329 (2000); *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), LBP-04-15, 60 NRC 81, 90, *aff’d*, CLI-04-36, 60 NRC 631 (2004).

<sup>113</sup> Section 54.4(a) describes those “systems, structures, and components” that are within scope as:

(1) Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49(b)(1)) to ensure the following functions —

(i) The integrity of the reactor coolant pressure boundary;

(ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or

(iii) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in § 50.34(a)(1), § 50.67(b)(2), or § 100.11 of this chapter, as applicable.

(2) All nonsafety-related systems, structures, and components whose failure could prevent satisfactory accomplishment of any of the functions identified in paragraphs (a)(1)(i), (ii), or (iii) of this section.

(3) All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission’s regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).

<sup>114</sup> See Final Rule: “Nuclear Power Plant License Renewal; Revisions,” 60 Fed. Reg. 22,461, 22,463 (May 8, 1995).

<sup>115</sup> *Turkey Point*, CLI-01-17, 54 NRC at 8 (quoting 60 Fed. Reg. at 22,462).

efficient, avoiding duplicative assessments where possible, and effective, allowing the NRC Staff to focus its resources on the most significant safety concerns at issue during the renewal term.”<sup>116</sup> Noting that the “issues and concerns involved in an extended 20 years of operation are not identical to the issues reviewed when a reactor facility is first built and licensed,” the Commission found that requiring a full reassessment of safety issues that were “thoroughly reviewed when the facility was first licensed” and continue to be “routinely monitored and assessed by ongoing agency oversight and agency-mandated licensee programs” would be “both unnecessary and wasteful.”<sup>117</sup> Nor did the Commission “believe it necessary or appropriate to throw open the full gamut of provisions in a plant’s current licensing basis to re-analysis during the license renewal review.”<sup>118</sup>

The Commission chose, rather, to focus the NRC license renewal safety review “upon those potential detrimental effects of aging that are not routinely addressed by ongoing regulatory oversight programs,” which it considered “the most significant overall safety concern posed by extended reactor operation.”<sup>119</sup> The Commission in *Turkey Point* described some of the “Detrimental Effects of Aging and Related Time-Limited Issues” as follows:

By its very nature, the aging of materials “becomes important principally during the period of extended operation beyond the initial 40-year license term,” particularly since the design of some components may have been based explicitly upon an assumed service life of 40 years. See [Final Rule: “Nuclear Power Plant License Renewal,” 56 Fed. Reg. 64,943, 64,946 (Dec. 13, 1991)]; see also Final Rule:

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<sup>116</sup> *Id.* at 7.

<sup>117</sup> *Id.*

<sup>118</sup> *Id.* at 9. “Current licensing basis” (CLB) is described by the Commission in *Turkey Point* as follows:

[“CLB” is] a term of art comprehending the various Commission requirements applicable to a specific plant that are in effect at the time of the license renewal application. The current licensing basis consists of the license requirements, including license conditions and technical specifications. It also includes the plant-specific design basis information documented in the plant’s most recent Final Safety Analysis Report, and any orders, exemptions, and licensee commitments that are part of the docket for the plant’s license, i.e., responses to NRC bulletins, generic letters, and enforcement actions, and other licensee commitments documented in NRC safety evaluations or licensee event reports. See 10 C.F.R. § 54.3. The current licensing basis additionally includes all of the regulatory requirements found in Parts 2, 19, 20, 21, 30, 40, 50, 55, 72, 73, and 100 with which the particular applicant must comply. *Id.*

. . . . The [CLB] represents an “evolving set of requirements and commitments for a specific plant that are modified as necessary over the life of a plant to ensure continuation of an adequate level of safety.” 60 Fed. Reg. at 22,473. It is effectively addressed and maintained by ongoing agency oversight, review, and enforcement.

*Id.* See also 10 C.F.R. § 54.30.

<sup>119</sup> *Turkey Point*, CLI-01-17, 54 NRC at 7.



“Nuclear Power Plant License Renewal; Revisions,” 60 Fed. Reg. 22,461, 22,479 (May 8, 1995). Adverse aging effects can result from metal fatigue, erosion, corrosion, thermal and radiation embrittlement, microbiologically induced effects, creep, and shrinkage. Such age-related degradation can affect a number of reactor and auxiliary systems, including the reactor vessel, the reactor coolant system pressure boundary, steam generators, electrical cables, the pressurizer, heat exchangers, and the spent fuel pool. Indeed, a host of individual components and structures are at issue. See 10 C.F.R. § 54.21(a)(1)(i). Left unmitigated, the effects of aging can overstress equipment, unacceptably reduce safety margins, and lead to the loss of required plant functions, including the capability to shut down the reactor and maintain it in a shutdown condition, and to otherwise prevent or mitigate the consequences of accidents with a potential for offsite exposures.<sup>120</sup>

The Commission has also framed the focus of license renewal review as being on “plant systems, structures, and components for which current [regulatory] activities and requirements *may not* be sufficient to manage the effects of aging in the period of extended operation.”<sup>121</sup> An issue can be related to plant aging and still not warrant review at the time of a license renewal application, if an aging-related issue is “adequately dealt with by regulatory processes” on an ongoing basis.<sup>122</sup> For example, if a structure or component is already required to be replaced “at mandated, specified time periods,” it would fall outside the scope of license renewal review.<sup>123</sup>

## 2. *Environmental Issues in License Renewal Proceedings*

Regulatory provisions relating to the environmental aspects of license renewal arise out of the requirement that the National Environmental Policy Act (NEPA) places on Federal agencies to “include in every recommendation or report on . . . major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on [ ] the environmental impact of the proposed action . . . .”<sup>124</sup> As has been noted by the Supreme Court, the “statutory requirement that a federal agency contemplating a major action prepare such an environmental impact statement [EIS] serves NEPA’s ‘action-forcing’ purpose in two important respects”:

It ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental im-

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<sup>120</sup> *Id.* at 7-8.

<sup>121</sup> *Id.* at 10 (citing 60 Fed. Reg. at 22,469) (alteration in original).

<sup>122</sup> *Id.* at 10 n.2.

<sup>123</sup> *Id.*

<sup>124</sup> 42 U.S.C. § 4332(c); see *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989).

pacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.<sup>125</sup>

Part 51 of 10 C.F.R. contains NRC's rules relating to and implementing relevant NEPA requirements, and section 51.20(a)(2) requires an environmental impact statement for issuance or renewal of a nuclear reactor operating license. Other sections relating to license renewal include, most significantly, 10 C.F.R. §§ 51.53(c), 51.95(c), and 51.103(a)(5), and Appendix B to Subpart A.

Although the requirements of NEPA are directed to Federal agencies and thus the primary duties of NEPA fall on the NRC Staff in NRC proceedings,<sup>126</sup> the initial requirement to analyze the environmental impacts of an action, including license renewal, is directed to applicants under relevant NRC rules.<sup>127</sup> Accordingly, section 51.53(c) requires a license renewal applicant to submit with its application an environmental report (ER), which must "contain a description of the proposed action, including the applicant's plans to modify the facility or its administrative control procedures as described in accordance with § 54.21," and "describe in detail the modifications directly affecting the environment or affecting plant effluents that affect the environment."<sup>128</sup>

The ER is not required to contain analyses of environmental impacts identified as "Category 1," or "generic," issues in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1.<sup>129</sup> The basis of this is the Commission's 1996 "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS), adopted as required under 10 C.F.R. § 51.95(c). The GEIS is an extensive study of the potential environmental impacts of extending the operating licenses for nuclear power plants, which was published as NUREG-1437 and provides

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<sup>125</sup> *Robertson*, 490 U.S. at 349 (citations omitted). The Court also noted that "NEPA itself does not mandate particular results, but simply prescribes the necessary process. . . . If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs." *Id.* at 350 (citations omitted). As the Court also observed, in the companion case of *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989), "by focusing Government and public attention on the environmental effects of proposed agency action," NEPA "ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct."

<sup>126</sup> *See, e.g.*, 10 C.F.R. § 51.70(b), which states among other things that "[t]he NRC staff will independently evaluate and be responsible for the reliability of all information used in the draft environmental impact statement."

<sup>127</sup> *See* 10 C.F.R. § 51.41.

<sup>128</sup> 10 C.F.R. § 51.53(c)(2); *see id.* § 51.53(c)(1).

<sup>129</sup> 10 C.F.R. § 51.53(c)(3)(i).

data supporting the table of Category 1 and 2 issues in Appendix B.<sup>130</sup> Issuance of the 1996 GEIS was part of an amendment of the requirements of Part 51 undertaken by the Commission to establish environmental review requirements for license renewals “that were both efficient and more effectively focused.”<sup>131</sup>

Issues on which the Commission found that it could draw “generic conclusions applicable to all existing nuclear power plants, or to a specific subgroup of plants,” were, as indicated above, identified as “Category 1” issues.<sup>132</sup> This categorization was based on the Commission’s conclusion that these issues involve “environmental effects that are essentially similar for all plants,” and thus they “need not be assessed repeatedly on a site-specific basis, plant-by-plant.”<sup>133</sup> Thus, under 10 C.F.R. § 51.53(c)(3)(i), license renewal applicants may in their site-specific ERs refer to and adopt the generic environmental impact findings found in Appendix B, Table B-1, for all Category 1 issues.<sup>134</sup>

Applicants must, however, address environmental issues for which the Commission was not able to make generic environmental findings.<sup>135</sup> An ER must “contain analyses of the environmental impacts of the proposed action, including the impacts of refurbishment activities, if any, associated with license renewal and the impacts of operation during the renewal term,” for those issues listed in 10 C.F.R. § 51.53(c)(3)(ii) and identified as “Category 2,” or “plant specific,” issues in Table B-1.<sup>136</sup> These issues are characterized by the Commission as involving environmental impact severity levels that “might differ significantly from one plant to another,” or impacts for which additional plant-specific mitigation measures should be considered.<sup>137</sup> For example, the “impact of extended operation on endangered or threatened species varies from one location to an-

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<sup>130</sup> See NUREG-1437, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants” (May 1996) [hereinafter GEIS]; Final Rule: “Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,” 61 Fed. Reg. 28,467 (June 5, 1996), *amended by* 61 Fed. Reg. 66,537 (Dec. 18, 1996); 10 C.F.R. Part 51, Subpart A, App. B n.1.

<sup>131</sup> *Turkey Point*, CLI-01-17, 54 NRC at 11.

<sup>132</sup> *Id.* at 11 (citing 10 C.F.R. Part 51, Subpart A, App. B).

<sup>133</sup> *Id.*

<sup>134</sup> Even though a matter would normally fall within a Category 1 issue, ERs are also required to contain “any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware,” under 10 C.F.R. § 51.53(c)(3)(iv). The Commission has, however, ruled that such information is not a proper subject for a contention, absent a waiver of the rule in 10 C.F.R. § 51.53(c)(3)(i) that Category 1 issues need not be addressed in a license renewal. See *Turkey Point*, CLI-01-17, 54 NRC at 12; *Pilgrim*, LBP-06-23, 64 NRC at 288, 294-300; *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131, 155-59 (2006).

<sup>135</sup> *Turkey Point*, CLI-01-17, 54 NRC at 11 (citing 10 C.F.R. Part 51, Subpart A, App. B).

<sup>136</sup> 10 C.F.R. § 51.53(c)(3)(ii).

<sup>137</sup> *Turkey Point*, CLI-01-17, 54 NRC at 11.

other,” according to the Commission, and is thus included within Category 2.<sup>138</sup> Another example is the requirement that “alternatives to mitigate severe accidents must be considered for all plants that have not [previously] considered such alternatives.”<sup>139</sup> Again, although the initial requirement falls upon applicants, the ultimate responsibility lies with the Staff, who must address these issues in a Supplemental Environmental Impact Statement (SEIS)<sup>140</sup> that is specific to the particular site involved and provides the Staff’s independent assessment of the Applicant’s ER.<sup>141</sup>

Finally, section 51.103 defines the requirements for the “record of decision” relating to any license renewal application, including the standard that the Commission, in making such a decision pursuant to Part 54, “shall determine whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.”<sup>142</sup>

## VI. BOARD ANALYSIS AND RULINGS ON PETITIONER’S CONTENTIONS

With the preceding context regarding contention admissibility requirements and license renewal scope principles in mind, we turn now to the Petitioner’s contentions. While some may raise questions of interest in other contexts, none meet all of the requirements discussed in section V, above. Accordingly, as we explain below, all must be rejected as inadmissible.

### A. Contention 1: Alleged Inability of Applicant To Maintain Financial Obligations

Petitioner’s Contention 1 states:

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<sup>138</sup> *Id.* at 12.

<sup>139</sup> 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1; *see* 10 C.F.R. § 51.53(c)(3)(ii)(L). This requirement arises out of “NEPA’s demand that an agency prepare a detailed statement on ‘any adverse environmental effects which cannot be avoided should the proposal be implemented,’ 42 U.S.C. § 4332(C)(ii),” implicit in which “is an understanding that the EIS will discuss the extent to which adverse effects can be avoided.” *Robertson*, 490 U.S. at 351-52. The basis for the requirement is that “omission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA. Without such a discussion, neither the agency nor other interested groups or individuals can properly evaluate the severity of the adverse effects.” *Id.* at 352.

<sup>140</sup> *See* 10 C.F.R. § 51.95(c).

<sup>141</sup> *See Turkey Point*, CLI-01-17, 54 NRC at 12 (citing 10 C.F.R. §§ 51.70, 51.73-.74).

<sup>142</sup> 10 C.F.R. § 51.103(a)(5).

PPL Susquehanna failed to provide the requisite data necessary to determine if it has the ability to maintain and service the financial obligations it inherited from the original licensee, i.e., PP&L. Regulatory conditions have materially changed and adversely affected PPL's ability to guarantee it can finance the "back-end" of nuclear power production at the SSES.<sup>143</sup>

The subject matter of this contention is similar to Petitioner's Motion To Compel, discussed above in section III. Petitioner questions the current owner/applicant's ability to meet "its financial obligations associated with the operation, decontamination and decommissioning of the [SSES]," as well as its status as an "electric utility," in the context of various utility ratemaking and related issues.<sup>144</sup> Petitioner is concerned about increased utility rates for PPL's customers,<sup>145</sup> and asks this Board to require PPL to "conduct a comprehensive financial due diligence to ascertain the ability of the nascent and emerging limited liability corporation to service its nuclear obligations under deregulation," to compel PPL to prove that it is an "electric utility," and to require it to provide an "action plan to address how the Company will finance nuclear debt load [*sic*], particularly the cost of decommissioning."<sup>146</sup> Petitioner asserts that the financial issues he raises are related to various financial matters discussed in several sections of the Application, including PPL's Environmental Report. He lists certain sections of the Application that are related to environmental issues, but does not dispute any specific part of any section, asserting instead, regarding the financial issues he raises, that PPL has "offered only cursory and superficial data, and omitted damaging material as a means of satisfying the license extension."<sup>147</sup>

PPL and the NRC Staff oppose this contention on the grounds that it is outside the scope of a license renewal proceeding and raises no genuine dispute on a material issue of fact or law.<sup>148</sup> Both note that the Commission has specifically

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<sup>143</sup> Petition at 15.

<sup>144</sup> *Id.* at 16.

<sup>145</sup> *See id.* at 17-20.

<sup>146</sup> *Id.* at 21.

<sup>147</sup> *Id.* at 15. Under the heading, "*Demonstrate that the issue raised in the contention is within the scope of the proceeding,*" and following the language quoted in the text, Petitioner states:

Specifically, this contention addresses technical, environmental, safety concerns and socioeconomic [*sic*] raised in Application and Appendix E: Environmental Report and 5.0-5.1.1 and 6.1, and SAMA: E.3.2 Population, E.3.3 Economy, 3.4 EMPLOYMENT Current Workforce, and E.4.5 Replacement Power Cost, and Susquehanna MACCS2 Economic Parameters Variable Description SSES Value, et al.

*Id.*

<sup>148</sup> *See* PPL Answer at 14; Staff Response at 14.

stated that financial questions are not within the scope of license renewal,<sup>149</sup> and also point out that the license transfer to PPL was in fact approved by the NRC.<sup>150</sup>

The Staff points out the provision of 10 C.F.R. § 50.33(f)(2) that “[a]n applicant seeking to renew or extend the term of an operating license for a power reactor need not submit the financial information that is required in an application for an initial license,”<sup>151</sup> and also cites the 1995 rulemaking amending the license renewal rules, in which the Commission in its Statement of Considerations made the following observations:

The economics of electrical power generation is the responsibility of the individual utility and the Federal or State agencies that are given that authority and responsibility. Generally, a State public utility commission or the Federal Energy Regulatory Commission, along with the utility, have the responsibility and the authority to address economic issues associated with power generation. Furthermore, the Commission’s regulatory responsibility (as defined by the Atomic Energy Act, the NRC’s organic statute) does not confer upon the Commission primary authority for regulating the economics of nuclear power generation. Under these circumstances, the Commission does not believe that it should perform economic analyses of nuclear power generation as a basis for informing the Commission’s licensing decisions. While it is true that the Commission currently addresses the economics of operating a nuclear power plant in the context of an environmental impact statement (EIS), it should be recognized that these analyses have been conducted in the context of EISs as part of the Commission’s process for complying with the mandates of the National Environmental Policy Act (NEPA). However, NEPA does not require such economic analyses.<sup>152</sup>

As noted by PPL, the Commission later adopted additional amendments specifically relating to the financial information requirements for license renewal applications.<sup>153</sup> PPL quotes the Statement of Consideration for this rulemaking, in which the Commission, In explaining the rule, stated:

With this final rule, the NRC believes that review of financial qualifications of non-electric utility licensee applicants at license renewal is not necessary. The resulting process for oversight of financial qualifications is sufficient to ensure that the NRC has adequate warning of adverse financial impacts so that the NRC can take timely regulatory action to ensure public health and safety and the common defense and security. The resulting process has two components: (1) A formal

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<sup>149</sup> Staff Response at 15; PPL Answer at 14.

<sup>150</sup> PPL Answer at 16; Staff Response at 15.

<sup>151</sup> Staff Response at 15.

<sup>152</sup> Staff Response at 15 (quoting Final Rule: “Nuclear Power Plant License Renewal; Revisions,” 60 Fed. Reg. 22,461, 22,484 (May 8, 1995)).

<sup>153</sup> PPL Answer at 14.

review of major triggering events, and (2) monitoring of financial health between the formal reviews due at the “triggering events.” The relevant triggering events are (1) initial operating license application, (2) license transfer, and (3) transition from an electric utility to a non-electric utility, either with or without transfer of control of the license. In addition, the NRC can review a licensee’s financial qualifications at any point during the term of the license if there is evidence of a decline in the licensee’s financial health. The NRC believes that there are no unique financial circumstances associated with license renewal because the NRC has no information indicating a licensee’s revenues and expenses change due to license renewal.<sup>154</sup>

Petitioner in his Reply to PPL and the Staff among other things requests an independent audit of PPL, but does not directly address the points of PPL and the Staff relating to the scope of license renewal proceedings and whether this contention presents any genuine dispute on a material issue. Nor does he appear to acknowledge that there were opportunities to request a hearing with regard to both the license transfer and the corporate restructuring at issue.<sup>155</sup> However, subsequent to a March 8, 2007, telephone conference held to allow the participants to address certain matters relating to the petition,<sup>156</sup> Petitioner submitted a filing arguing that the contention falls within the environmental Category 2 item found in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, under the heading “Socioeconomic[s],” designated as follows:

Offsite land use (license renewal term) — SMALL, MODERATE, OR LARGE.  
Significant changes in land use may be associated with population and tax revenue changes resulting from license renewal.<sup>157</sup>

We find, in light of 10 C.F.R. § 50.33(f)(2), the explanations of the Commission in the above-quoted statements, and the case law discussed in section V.B, above, on the scope of license renewal proceedings, that Contention 1 fails to meet the requirement of 10 C.F.R. § 2.309(f)(1)(iii) that a petitioner “[d]emonstrate that the issue raised in the contention is within the scope of the proceeding.” Petitioner’s mere listing of various sections of the Environmental Report of the Application cannot be said to bring this contention within scope. Nor can his recent reference

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<sup>154</sup> PPL Answer at 14-15 (quoting Final Rule: “Financial Information Requirements for Applications To Renew or Extend the Term of an Operating License for a Power Reactor,” 69 Fed. Reg. 4439, 4440 (Jan. 30, 2004)).

<sup>155</sup> See Epstein Reply at 15-19. Indeed, he suggests that “[t]here was no opportunity to review the financial status of PPL Susquehanna at the time PPL was licensed to operate [SSES].” *Id.* at 15.

<sup>156</sup> See Tr. at 1-39.

<sup>157</sup> Epstein Citation Letter at 4.

to the Category 2 issue of offsite land use bring the contention within scope. He not only makes no reference whatsoever to land use in his Petition (or indeed in his Reply), he also fails to challenge or even mention section 4.17 of the Application ER, which involves offsite land use. Thus, although this subject may, properly supported, be an appropriate one for an admissible environmental contention, and although the subject may involve tax revenue changes in an affected area, Contention 1 does not involve the subject lately posed by Petitioner, and in any event, he has shown no genuine dispute on the subject with any part of the actual Application that is at issue in this proceeding. Moreover, Petitioner has not shown how his contention is “material to the findings the NRC must make to support the action involved in the proceeding,” as required by 10 C.F.R. § 2.309(f)(1)(iv).

Nor, finally, can it be said that Petitioner has “[p]rovide[d] sufficient information to show that a genuine dispute exists with the applicant/licensee” on any “material issue of law or fact,” as required by 10 C.F.R. § 2.309(f)(1)(vi). Apart from the lack of any material, in-scope issue being shown, it appears that Petitioner Epstein has, as discussed more fully above in section IV.A, not taken into account the financial assurances that PPL was required to provide — and that were evaluated by NRC Staff — in the PPL license transfer proceeding, of which we take judicial notice. Petitioner had opportunities to petition to intervene in the license transfer and restructure proceedings, but stated during the March 8, 2007, telephone conference that he “was engaged in a parallel proceeding at the Public Utility Commission [s]o I had made a decision not to intervene in that particular proceeding.”<sup>158</sup> This does not, however, constitute a valid ground for raising issues concerning the license transfer and restructuring in *this* proceeding.

Even assuming that the sort of information Contention 1 concerns did fall within the limited financial information called for in a NEPA context, Petitioner’s lack of any reference to the actual facts with regard to financial assurances, as established in these earlier proceedings,<sup>159</sup> as well as his failure to state any specific dispute he has with the substance of any specific part of the Application (providing only the very general allegation that the Application “offered only cursory and superficial data [in the Application], and omitted damaging material”), renders it impossible to find that he has met the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

Based on the failure to meet the requirements of 10 C.F.R. § 2.309(f)(1)(iii), (iv), and (vi), we deny the admission of Contention 1.

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<sup>158</sup> Tr. at 15-16.

<sup>159</sup> Petitioner might have attempted to contest such financial issues in the license transfer proceeding; as we indicate above, there was an opportunity to petition for a hearing in that proceeding, but no such petition was filed.



**B. Contention 2: Alleged Failure To Address Water Use Issues**

Petitioner in Contention 2 alleges:

PPL failed to factor, consider and address numerous water use and indigenous aquatic challenges present and anticipated for the Susquehanna River.<sup>160</sup>

As explanation, in satisfaction of 10 C.F.R. § 2.309(f)(1)(ii), Petitioner states:

The Susquehanna River Basin Commission and the Pennsylvania Department of Environmental Protection (PA DEP) are in the process of collecting, evaluating, and implementing a comprehensive water use plan for Pennsylvania, i.e., [Pennsylvania] Act 220. Moreover, recent and consistent droughts in Pennsylvania (2002) as well as flooding (2006) have forced state and regulatory bodies to reexamine water as a commodity in the Commonwealth of Pennsylvania.

In addition, a number of infestations, specifically Asiatic clams and Zebra mussels, have required power plants to prepare plans to defeat these aquatic invasions.<sup>161</sup>

To demonstrate that the contention is within the scope of this proceeding, as required by 10 C.F.R. § 2.309(f)(1)(iii), Petitioner states:

The applicant raised and attempted to address water quality, water use, aquatic communities, groundwater use, entrainment and impingement, and impact microbiologic organisms throughout the license application, but offered only cursory and superficial data, and failed to address numerous issues that could adversely impact the license extension request. Specifically, this contention addresses technical, environmental and safety concerns raised in Application and Appendix E: Environmental Report 2.2.21-2.5, 2.91, 2.9.2, 4.0 to 4.8.1, 4.12, 4.15.1, 5.0-5.1.1 and 6.1, and SAMA: 4.15 PUBLIC UTILITIES: PUBLIC WATER SUPPLY AVAILABILITY and 5.16 Flood, et al.<sup>162</sup>

To demonstrate that the contention meets the final three subsections of 10 C.F.R. § 2.309(f)(1), Petitioner begins:

Nuclear power plants require large amounts of water for cooling purposes. PPL's Susquehanna Electric Steam Station power plant will remove water from the Susquehanna River, and it is likely fish and aquatic life will be harmed. Animals and people who depend on these aquatic resources will also be affected. PPL's planned uprate and application for relicensing will further place pressure on limited

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<sup>160</sup> Petition at 23.

<sup>161</sup> *Id.*

<sup>162</sup> *Id.*

water resources. Freshwater water withdrawals by Americans increased by 8% from 1995-2000, and Americans per capita water withdrawal is three times above the international average. [Citing “U.S. National Report on Population and the Environment” (2006) published by the Center for Environment and Population, a nonprofit corporation based in Connecticut.]

Question 1: How can the NRC approve the license renewal for of [*sic*] the SSES prior to the adoption and implementation of the the Water Resources and Planning Plan plan under Act 220?

Question 2: How many fish (game and consumable), fish eggs, shellfish and other organisms will be harmed or killed annually by the license renewal?<sup>163</sup>

Petitioner continues by discussing the impact of other nuclear power plants that are located on the Susquehanna River on fish and other organisms.<sup>164</sup> He follows this with additional questions, interspersed with references to: an EPA Clean Water Act rule,<sup>165</sup> how plants commonly discharge chlorinated water and Clamtrol (used to minimize bacteria and defeat Asiatic clam infestation) into the river,<sup>166</sup> the amount of water drawn from the river by SSES,<sup>167</sup> and the alleged failure of SSES to take any measures to conserve water during a drought in the summer of 2002.<sup>168</sup>

The additional questions posed by Petitioner concern “acceptable levels” of fish kills, the impact of a power uprate, the impact of license renewal on sport and commercial fishing, the Commission’s compliance reporting requirements with regard to onsite and offsite tritium monitoring and related issues, the amount of water that will be drawn from and returned to the Susquehanna River after the renewal and uprate, whether the water will be treated with chemicals, how PPL plans to “defeat Asiatic clam and/or Zebra mussel infestations,” and what actions PPL will take to “curb water consumption during periods of conservation and drought.”<sup>169</sup>

Petitioner requests that PPL be required to “resubmit and revise its application to address issues raised by Mr. Epstein (“*after* Act 220 has been implemented”),

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<sup>163</sup> *Id.* at 24.

<sup>164</sup> *Id.* at 25.

<sup>165</sup> *Id.* at 26.

<sup>166</sup> *Id.* at 27.

<sup>167</sup> *Id.* at 28. Petitioner states that the plant “draws 40.86 million gallons per day from the Susquehanna River. For each unit, 14.93 million gallons per day are lost as vapor out of the cooling tower stack while 11 million gallons per day are returned to the River as cooling tower basin blow down. On average, 29.86 million gallons per day are taken from the Susquehanna River and not returned.” *Id.*

<sup>168</sup> *Id.* at 29.

<sup>169</sup> *Id.* at 26-29.

and to include a statement on the impact of the license renewal combined with “the synergetic impact of a 200 mw uprate.”<sup>170</sup> This is necessary, according to Petitioner, because SSES is asserted to be a “menacing predator on the Susquehanna River, and a large industrial consumer of a valuable and limited commodity.”<sup>171</sup>

PPL argues that Contention 2 is outside the scope of license renewal and asserts that it is vague and nonspecific, failing to point to any particular deficiency in the Application or raise any genuine, material dispute with the Application.<sup>172</sup> Noting that the contention “does not discuss sections 3.1.2.1 and 4.1 of the Environmental Report, which analyze the consumptive use of water,”<sup>173</sup> PPL states that some of the sections cited by Petitioner either do not exist or do not relate to the plant’s use of water for cooling purposes, and that section 4.15 actually “demonstrates that the population increase attributable to license renewal will be small, on the order of 428 persons, in an area where the excess public water supply exceeds 5.1 million gallons per day,” which PPL asserts Petitioner provides no basis to dispute.<sup>174</sup>

PPL counters Petitioner’s allegations and explanation by noting that the Application does, at sections 3.1.2.1 and 4.1 of the ER, discuss:

the Susquehanna River Basin Commission’s (“SBRC”) [*sic*] regulation of consumptive water use, including how SSES complies with SRBC regulations by compensating for the consumptive water use by sharing in the costs of the Cowanesque Lake Reservoir (ER at 3.1-4), which provides another source of water during low flow conditions (ER at 4.1.2).<sup>175</sup>

According to PPL, the State Water Plan, which Act 220 requires to be updated by March 2008, “will not alter any requirements or [PPL]’s commitments relating to water use,” as it gives the Pennsylvania Department of Environmental Protection no “authority to regulate, control, or require permits for the withdrawal or use of water.”<sup>176</sup> While the update “may improve the knowledge of policymakers and regulators, which would allow for more informed rulemaking in the future,” it is “not a prerequisite for any agency decisions today.”<sup>177</sup> In any event, according to PPL, Petitioner provides no support — expert opinions, documents or other

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<sup>170</sup> *Id.* at 29.

<sup>171</sup> *Id.*

<sup>172</sup> PPL Answer at 17-18.

<sup>173</sup> *Id.* at 18.

<sup>174</sup> *Id.* at 18 n.8.

<sup>175</sup> *Id.* at 19.

<sup>176</sup> *Id.* at 19 & n.9.

<sup>177</sup> *Id.* at 19.

sources — for any allegation of error in the ER’s assessment of consumptive water use.<sup>178</sup>

Regarding Petitioner’s concern about Asiatic clams and Zebra mussels, PPL asserts these are neither aging issues nor issues that fall under any Category 2 item in 10 C.F.R. Part 51, Subpart A, Appendix B, and the potential effects of any biocides that may be used to control these organisms is a Category 1 issue outside the scope of license renewal.<sup>179</sup> PPL argues that Petitioner’s questions, without any support, are inadequate to establish any genuine, material issue.<sup>180</sup>

With regard to the power uprate, PPL points out that the ER in § 2.12 in fact “clearly and explicitly evaluates the impacts of license renewal coupled with the extended power uprate for which PPL Susquehanna has applied,” stating that the “impacts evaluated in this [ER] consider extended operations at the increased power levels associated with this uprate.<sup>181</sup> In addition, PPL states, section 4.1 of the ER “evaluates the consumptive water use that would occur with the extended power uprate.”<sup>182</sup>

Both PPL and the Staff point out that some of Petitioner’s questions are irrelevant to SSES because, among other things, NRC rules require an analysis of entrainment and impingement of fish, and heat shock, only for plants with once-through cooling or cooling ponds, “having determined generically that such impacts are small for plants such as SSES that use cooling towers.”<sup>183</sup> Because SSES uses cooling towers rather than once-through cooling or cooling pond heat dissipation systems, it is, PPL and the Staff argue, not required to assess the impact of the facility on fish, early life stages of fish, or heat shock.<sup>184</sup> For plants such as Susquehanna, these are Category 1 issues, as is the discharge of biocides and chlorine, according to Staff.<sup>185</sup>

The Staff agrees with PPL that Contention 2 is not supported by sufficient bases under the contention admissibility rule provisions, that its asserted bases do not demonstrate any genuine dispute on a material issue of law or fact, and that it is not sufficiently specific.<sup>186</sup> In addition, Staff urges, although applicants must provide the status of compliance with permits and licenses, including water use permits, Petitioner does not argue that this has not been done, nor does he

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<sup>178</sup> *Id.*

<sup>179</sup> *Id.* at 19-20 (citing 10 C.F.R. Part 51, Subpart A, App. B, Table B-1; GEIS § 4.4.2.2 and Table 4.4).

<sup>180</sup> *Id.* at 20-23.

<sup>181</sup> *Id.* at 22 (citing ER at 2.12-1).

<sup>182</sup> *Id.* (citing ER at 4.1-1 to 4.1-2).

<sup>183</sup> *Id.* at 20 (citing 10 C.F.R. § 51.53(c)(3)(ii)(B)).

<sup>184</sup> Staff Response at 19 (citing 10 C.F.R. § 51.53(c)(3)(ii)(B)); PPL Answer at 20.

<sup>185</sup> Staff Response at 19.

<sup>186</sup> *Id.* at 17.

provide any support for delaying license renewal until Act 220 is implemented, or for any other of his requested remedies.<sup>187</sup> In fact, according to Staff, PPL holds a National Pollutant Discharge Elimination System (NPDES) permit for water discharge, issued by the Pennsylvania Department of Environmental Protection, and a consumptive use water approval, issued by the Susquehanna River Basin Commission, and the Application in Appendix E, § 3.2.1.2, “addresses all of the questions posed by the Petitioner in Proposed Contention 2.”<sup>188</sup> As Petitioner “does not explain what he believes has been omitted or inadequately addressed,” Staff insists the contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi).<sup>189</sup>

Nor, says the Staff, does the “mere mention” of tritium monitoring provide sufficient information to show any genuine dispute on a material issue.<sup>190</sup> On this issue, PPL points out that SSES has no landfill producing tritium leachate, and in any event, radiological monitoring is “an operational program that is beyond the scope of license renewal.”<sup>191</sup>

With regard to Petitioner’s Reply — which discusses, among other things, various asserted inadequacies in the aging management program for SSES,<sup>192</sup> some issues related to the NRC’s voluntary program on addressing potential tritium leaks,<sup>193</sup> and some information about corrosion of water intake pipes that was disclosed by PPL in a water use permit application<sup>194</sup> — we discuss issues relating to the Reply in our ruling above on PPL’s Motion To Strike.<sup>195</sup> We conclude therein that, in making our ruling on Contention 2, although anything that might constitute “legitimate amplification,” appropriate responses to arguments raised in the answers, or properly late- or newly filed<sup>196</sup> material may appropriately be considered under relevant law, we will not consider any information that would fall outside that permitted by the Commission, except as necessary to explain our rulings here.

In analyzing issues relevant to Contention 2, we note first that a review of Petitioner’s original Contention 2 reveals no references therein to aging management or inspection of systems and components that contain radioactively contaminated

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<sup>187</sup> *Id.* at 18, 20.

<sup>188</sup> *Id.* at 18.

<sup>189</sup> *Id.*

<sup>190</sup> *Id.* at 20.

<sup>191</sup> PPL Answer at 21 (citing *Nuclear Management Co., LLC* (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 754 (2005)).

<sup>192</sup> Epstein Reply at 20-21.

<sup>193</sup> *Id.* at 22.

<sup>194</sup> *Id.* at 23.

<sup>195</sup> *See supra* section IV.B.

<sup>196</sup> *See* 10 C.F.R. § 2.309(c), (f)(2).

water. Petitioner does, however, mention tritium monitoring in his discussion in support of the contention, posing the following question:

Question 7: What will the Commission's compliance reporting requirements be in regard to onsite and offsite tritium monitoring? How will the Commission account for offsite masking as a result of landfill tritium leachate? Where will the results be published?<sup>197</sup>

He also provides the following footnote to this question:

*Re: Disposal and licensing of tritium exit signs*, Letter from Thomas J. Fiddler, Pa DEP, Deputy Secretary to Nils. J. Diaz, Chairman, US NRC, January 17, 2006.<sup>198</sup>

Thus it might be said that Petitioner raised at least the issue of monitoring for tritium in his Petition, even as he confuses the two issues of (1) monitoring for tritium in water that may have leaked from SSES, and (2) disposal of tritium exit signs, the latter of which would not seem to be related to SSES in any way. The question becomes, whether Petitioner implicitly raised an aging issue by posing his Question 7. An additional question is whether his learning about the information in the December 20, 2006, SRBC permit application only after he submitted his January 2, 2007, Petition, renders it permissible to raise in his Reply, or as part of a new contention filed within a reasonable time after he became aware of the information. The dates in question would support consideration of the new information — the 1 1/2- to 2-week period between December 20 and January 2 is obviously short, particularly in the context of the holiday season, such that filing information after January 2, by February 5, 2007 (the date of Petitioner's Reply), might be considered reasonable.

The problem with regard to whether there was any implicit reference to aging in Petitioner's original Contention 2 is that, even though it included the question quoted above, the original contention was clearly focused on environmentally related aquatic issues, including "water use" and "indigenous aquatic challenges."<sup>199</sup> Petitioner's recitation quoted above,<sup>200</sup> regarding whether the contention is within the scope of license renewal, mentions "water quality, water use, aquatic communities, groundwater use, entrainment and impingement, and impact microbiologic organisms," all of which are environmental issues and none of which are aging issues. In addition, several sections of the ER are mentioned, but there is, as indicated above, no reference to any parts of the Application relating

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<sup>197</sup> Petition at 26.

<sup>198</sup> *Id.* at 26 n.28.

<sup>199</sup> *Id.* at 23.

<sup>200</sup> See text accompanying note 162, *supra*.

to aging. Question 7, regarding monitoring for tritium, is the sole reference in Petitioner’s original Contention 2 to any even arguably aging-related issue, and, as indicated above, it stands alone with only its footnote, on a similar — but clearly distinct — issue, offered as support.

With regard to the timing issue relating to the December 20, 2006, information, the problem is that the information provided in Petitioner’s February 2, 2007, Reply is quite general and somewhat scattered in its various references to, e.g.:

— the aging management program not including “proactive action plans for water challenges resulting from natural and mechanical adversaries,” and not recognizing “that it is initial [*sic*] manifest with the [SRBC] application has been grandfathered and must be resubmitted”;<sup>201</sup>

— not including a “voluntary tritium action plan,” along with references to tritium being a “national and localized issue of import” and to NRC’s tritium task force and voluntary tritium program;<sup>202</sup>

— an alleged lack of “adequate monitoring to determine if and when leakage from [all systems and components that may contain radioactively contaminated water] occurs”;<sup>203</sup>

— the same issues from the original contention concerning Asiatic clams and related matters;<sup>204</sup>

— certain water shortages;<sup>205</sup> and

— the SRBC application and the reference therein to difficulty PPL was having metering withdrawal of water accurately “due mainly to corrosion and fouling of the intake pipes” and the fact that PPL was as a result evaluating replacement of sections of the pipe.<sup>206</sup>

Even if we considered the above information, along with other information of a similar nature in the Reply, we could not say that it provides either the focus necessary to support an admissible contention, or the “minimal factual and legal foundation” necessary to trigger a full adjudicatory hearing.<sup>207</sup>

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<sup>201</sup> Epstein Reply at 20.

<sup>202</sup> *Id.* at 20, 22.

<sup>203</sup> *Id.* at 20.

<sup>204</sup> *Id.* at 21.

<sup>205</sup> *Id.* at 21-22.

<sup>206</sup> *Id.* at 23 (quoting Letter from Jerome S. Fields, Senior Environmental Scientist — Nuclear, to Paul O. Swartz, Executive Director, Susquehanna River Basin Commission, PPL Susquehanna, LLC, Application for Surface Water Withdrawal, Request To Modify Application 19950301, EPUL-0578 (Dec. 20, 2006)).

<sup>207</sup> See discussion *supra* section V.A; *Oconee*, CLI-99-11, 49 NRC at 334.

Before stating our ultimate ruling on Contention 2, however, we note certain additional information provided by Petitioner subsequent to the aforementioned March 8, 2007, telephone conference. As we permitted, Petitioner submitted a filing, arguing that the contention falls within several environmental Category 2 items found in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, including “Groundwater use conflicts (potable and service water, and dewatering; plants that use >100 gpm)”;

“Groundwater use conflicts (plants using cooling towers withdrawing make-up water from a small river)”;

“Public services: public utilities”;

and “Microbiological organisms (public health) (plants using lakes or canals, or cooling towers or cooling ponds that discharge to a small river).”<sup>208</sup>

In ruling on this contention, we find, first of all, as argued by the Staff and PPL, that the mere posing of questions does not provide sufficient support to admit a contention. Under 10 C.F.R. § 2.309(f)(1)(vi), “sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact” must be provided, and neither Petitioner’s questions, nor his additional commentary in his original contention, provide the reasoned explanation and support necessary to satisfy this requirement. Nor, we find, even considering the information recounted above from his Reply, does the information he has provided satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

With regard to his references to water consumption and related issues, Petitioner does not discuss at all the sections of the ER that address consumptive use of water, and he fails to show any specific or genuine dispute with these or any other section of the Application. Moreover, as pointed out by PPL and the Staff, Susquehanna is not the type of plant for which any of the Category 2 items listed under “Aquatic Ecology” in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, apply. As has also been pointed out, discharge of chlorine or other biocides is a Category 1, out-of-scope issue. With regard to the four additional Category 2 items more recently asserted to bring the contention within scope, although the sections of the ER that address these items are contained in Petitioner’s list of section numbers quoted above from his original Petition, he nowhere demonstrates any specific dispute with any of the information contained in any of these sections.

Regarding tritium monitoring, again, the mere posing of a question does not suffice for purposes of contention admissibility; no mention is made of this subject elsewhere in the Petition, nor is any support provided for any challenge regarding tritium monitoring, nor is any genuine dispute shown regarding this issue, even taking into account the quite general information regarding this subject

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<sup>208</sup> Epstein Citation Letter at 5-6.



in Petitioner's Reply.<sup>209</sup> Nor, for that matter, does any of the other information provided by the Petitioner in the Reply so suffice. Even if we were to take all the allegations made therein to be true (which PPL strongly contests<sup>210</sup>), Petitioner's failure to tie any such alleged facts to any aging issues with any specificity, in order to show a genuine dispute on a material issue of law or fact, renders the contention insufficient in this regard as well.

Nor, we would note, has any basis been shown to warrant any of the remedies requested by Petitioner. As to the pending uprate application, as PPL points out, the license renewal application does take into account the pending uprate application, and, as Staff has pointed out, there will be an opportunity for a hearing on this, for any petitioner who files a properly supported request for hearing and petition to intervene.<sup>211</sup> In this proceeding, however, we must dismiss this contention, as it fails to provide sufficient information to show a genuine dispute with the Application on a material issue of law or fact.

### **C. Contention 3: Alleged Flawed Demographic Profile**

Petitioner in Contention 3 alleges:

PPL's demographic profile is flawed and incomplete and fails to consider the aging population and workforce which impacts supports services, emergency planning, workforce replenishment and traffic patterns.<sup>212</sup>

By way of explanation of this contention, Petitioner states:

Pennsylvania is the second oldest state in the nation after Florida and its fastest growing population segment is octogenarians. (34) An aging population base has unique and sensitized needs that were not factored, considered, or analyzed in the licensee's application. Moreover, PPL's intent to raise electric prices by at least 20%

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<sup>209</sup> Compare the ruling in *Pilgrim*, LBP-06-23, 64 NRC at 300-315. In the *Pilgrim* proceeding, the petitioners, in stark contrast to what the Petitioner herein has provided, among other things specifically discussed (1) relevant sections of the Application and how they were alleged to be inadequate; (2) the relevance of a number of exhibits and documents to specific points in their argument; (3) incidents at other plants and how leaks were detected in some instances by monitoring wells; and (4) the specific topography of the Pilgrim plant site and how monitoring wells should be placed there.

<sup>210</sup> See, e.g., Tr. at 30.

<sup>211</sup> See Tr. at 21; Staff EPU Letter; Biweekly Notice Applications and Amendments to Facility Operating Licenses Involving No Significant Hazards Considerations, 72 Fed. Reg. 11,383, 11,392 (Mar. 13, 2007). This notice pertains to a number of applications from various entities. Provisions on requesting hearings and petitioning to intervene are found at 72 Fed. Reg. at 11,384-85, 11,402-03.

<sup>212</sup> Petition at 30.

to 30% in the near future hits fixed-income and aging population bases especially hard.<sup>213</sup>

Petitioner asserts, to demonstrate that this contention is within the scope of this proceeding, that it:

addresses socioeconomic, environmental and safety concerns raised in [*sic*] Application and Appendix E: Environmental Report 2.6-2.7, 2.8, 2.9, 2.9.1-2.9.3, 3.4.1, 4.13-4.14, 4.18, 4.19, 5.0-5.1.1 and 6.1, and SAMA: E.3.2 Population, E.3.3 Economy, 3.4 EMPLOYMENT Current Workforce, and E.4.5 Replacement Power Cost, and Susquehanna MACCS2 Economic Parameters Variable Description SSES Value, et al.<sup>214</sup>

Petitioner goes on to discuss the reduction of the Applicant's workforce "through attrition, 'out sourcing' and early retirements while the surrounding population base is growing older";<sup>215</sup> the ratio of workers to households in the context of rates, costs, and the economic hardships of the community;<sup>216</sup> the low likelihood of older persons "to be absorbed into a nuclear work force";<sup>217</sup> the absence of polling to assess the impact of rate issues;<sup>218</sup> and the refusal of PPL to support special rate relief for special needs communities.<sup>219</sup> He requests that PPL be required to:

resubmit portions of its application relating to an aging labor force and aging population base and the socioeconomic stress that these developments have on social services, the tax base, rate shock, existing poverty levels, and institutional memory. PPL and the NRC must reexamine the plant's demographics for operating the nation's 19th and 20th largest nuclear reactors.<sup>220</sup>

PPL avers that Contention 3 is inadmissible because it is outside the scope of license renewal and fails to demonstrate a genuine, material dispute.<sup>221</sup> It neither relates to plant aging issues, nor provides any basis for concern over the adequacy of the staffing of SSES, nor falls within a Category 2 environmental issue, according to PPL.<sup>222</sup> PPL summarizes the matters addressed in the ER

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<sup>213</sup> *Id.* (footnote omitted).

<sup>214</sup> *Id.*

<sup>215</sup> *Id.* at 31.

<sup>216</sup> *Id.* at 33-34.

<sup>217</sup> *Id.* at 34.

<sup>218</sup> *Id.*

<sup>219</sup> *Id.* at 35.

<sup>220</sup> *Id.* at 35.

<sup>221</sup> PPL Answer at 23.

<sup>222</sup> *Id.* at 23-25.

sections cited by Petitioner — having to do with transmission lines and electric shock hazard, the effect of potential increased staff on housing availability and transportation, and the effect of license renewal on historic or archaeological resources — and illustrates how they do not relate to the socioeconomic stress issues raised by Petitioner, urging also that the SAMA (severe accident mitigation alternatives) analysis does not relate to these issues.<sup>223</sup> PPL argues that Petitioner neither explains how the analysis of any particular Category 2 impact in the Susquehanna ER is in error, nor shows any genuine dispute with the Applicant regarding any.<sup>224</sup>

The Staff opposes admission of Contention 3 as neither being material to any finding the NRC must make to support license renewal, nor demonstrating any genuine dispute on a material issue, nor being related to any NEPA finding the NRC must make.<sup>225</sup> Staff points out that an ER need only consider economic costs and benefits as they relate to alternatives and mitigation, noting that the ER includes both an environmental justice and demographic analysis of the communities within 50 miles of SSES, and argues that Petitioner specifies no deficiencies in these analyses.<sup>226</sup> In addition, the Staff urges, Petitioner identifies no failure of the ER to contain information and provides no supporting reasons for his belief that the ER should contain such information, and Petitioner’s concerns with “out sourcing” and SSES operating practices are not Category 2 issues and therefore outside the scope of license renewal.<sup>227</sup>

Petitioner in his Reply does not address the scope and “genuine dispute” issues raised by PPL and the Staff, but rather suggests that license renewal *should* address “the impact of relicensing on aging human beings who live within the shadow of the plant,” and who “are not abstract hypotheticals that attorneys in DC can rework into a neat formula.”<sup>228</sup> Again, he seeks that we require PPL to resubmit portions of the application and to address the socioeconomic stress issues he presses in this contention.<sup>229</sup> Finally, in his March 11, 2007, filing, Petitioner submits that Contention 3 falls within the same environmental Category 2 item found in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, as that provided for Contention 1, namely, “Offsite land use (license renewal term).”<sup>230</sup>

We find that, while Petitioner in this contention discusses an aging population, he does not address any issues involving the aging of any relevant plant systems,

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<sup>223</sup> *Id.* at 25 n.21.

<sup>224</sup> *Id.* at 25.

<sup>225</sup> Staff Response at 21-22.

<sup>226</sup> *Id.* at 22.

<sup>227</sup> *Id.* at 23.

<sup>228</sup> Epstein Reply at 26.

<sup>229</sup> *Id.* at 27.

<sup>230</sup> Epstein Citation Letter at 7.

structures, or components, or any aging-management issues. Nor does he demonstrate how any of the issues he raises in this contention fall within any Category 2 items involving socioeconomics — i.e., housing impacts, public services relating to water supply and education (impacts from refurbishment activities only), land use, transportation, and historic and archaeological resources.<sup>231</sup> With regard to his submission asserting that the contention falls under “Offsite land use (license renewal term),” he fails to challenge or controvert in any way section 4.17 of the Application ER, which specifically concerns this subject. The contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and must therefore be dismissed.

#### **D. Contention 4: Alleged Flawed Tax Analysis**

Petitioner in Contention 4 alleges:

PPL’s tax analysis is fatally flawed and lacks historical perspective. The Company failed to assess the impact of Revenue Neutral Reconciliations [*sic*] at the SSES on local citizens, residents, taxpayers, and homeowners.<sup>232</sup>

As with other contentions, Petitioner here lists several sections of the Environmental Report of the Application to demonstrate that the contention is within the scope of license renewal, alleging that PPL has “offered only cursory and superficial data” in the ER.<sup>233</sup> Petitioner also alleges that PPL “failed to address the negative impact that the Revenue Neutral Reconciliation tax assessment has had on the school district, municipalities and residential consumers”; states that the contention “addresses socioeconomic, environmental and safety concerns raised in the [ER]”; and provides the following “brief explanation of the basis for the contention”:

By limiting their historic snapshot from 2001-2005, PPL provides a false and incomplete fiscal picture of the impact their property devaluations and legal suits had on local taxing bodies. The transition from the PURTA to RNR has been a disaster. PPL has conveniently omitted the tax strain it has caused the Berwick Area School District, Salem Township, Luzerne County, residential consumers and senior citizens living on fixed incomes.<sup>234</sup>

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<sup>231</sup> See our discussion below of Petitioner’s Contention 4 for a more detailed treatment of the socioeconomic issues that are within the scope of license renewal.

<sup>232</sup> Petition at 36.

<sup>233</sup> *Id.*

<sup>234</sup> *Id.* According to Petitioner, PURTA refers to the “Public Utility Realty Tax Assessment . . . tax sharing formula used prior to the deregulation of electric generating stations,” and RNR refers to

(Continued)

Petitioner asserts in support of the materiality of the contention the following:

Relicensing a nuclear power plant should not impose economic hardships on the host community. PPL has successfully sued local taxing authorities and defended [*sic*] the school system while at the same time increasing capacity and requesting a license extension. Either the NRC must reexamine the economic impact of SSES on the community, or address how relicensing a nuclear power plant while shifting the tax burden and increasing rates on an aging community is incompatible with the NRC's mission.<sup>235</sup>

As factual support and in an effort to show a genuine dispute on a material issue, Petitioner discusses various issues relating to Pennsylvania tax law, the effect of deregulation on tax revenue, property valuation, and tax rates for power plants.<sup>236</sup> He then urges that “[a] sense of fair play and economic sanity require that the NRC compel PPL to revise and resubmit the tax impact of relicensing the SSES under current condition [*sic*].”<sup>237</sup> He wants PPL to submit documentation of the amount of taxes paid under the Pennsylvania tax laws in effect in 1995 and 2005, as well as the projected amount for 2015. He asks the NRC to “compel PPL” to provide information “relating to the socioeconomic stress that the RNR assessment has had on social services, the tax base, existing poverty levels.”<sup>238</sup> He also asserts the NRC should reexamine the plant's economic impact based on “PPL's tax shifting policies,” and that it “must compel PPL to explain how its tax policies benefit local communities as the SSES's capacity and environmental impact increase, while the Company's charitable contributions, social programing and revenue contributions steadily decline.”<sup>239</sup>

Petitioner concludes by discussing how utilities in the state influenced deregulation, claiming “that local communities would increase their revenues,” while the utilities paid less taxes, which in the end “created a material adverse conditions [*sic*] for local communities.”<sup>240</sup> He further asserts adverse impacts on “an aging population dependent on a fixed income levels [*sic*]” that is being “asked to absorb rising electric and property tax rates, in part due to the extended operation of the [SSES].”<sup>241</sup>

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the post-deregulation Revenue Neutral Reconciliation tax assessment formula used in Pennsylvania.  
*See id.* at 37.

<sup>235</sup> *Id.*

<sup>236</sup> *Id.* at 37-39.

<sup>237</sup> *Id.* at 39.

<sup>238</sup> *Id.*

<sup>239</sup> *Id.*

<sup>240</sup> *Id.* at 40.

<sup>241</sup> *Id.*

PPL and the Staff oppose Contention 4 as raising an issue outside the scope of this license renewal proceeding and failing to raise a genuine material dispute with the Application.<sup>242</sup> PPL argues that the contention, in advocating the analysis of the impacts of past changes in Pennsylvania’s property tax laws resulting from deregulation, seeks to address “an impact that is not caused or affected by license renewal” and is therefore outside the scope of license renewal.<sup>243</sup> Noting that its ER does provide information about property taxes paid to localities over the past 5 years, identifying “what percentage of the local jurisdiction’s tax revenue the SSES payments represent,” PPL points out that Petitioner in Contention 4 “identifies no inaccuracy in this information.”<sup>244</sup> PPL notes further that the ER addresses “whether SSES’s tax payments will drive significant land use changes in the renewal term,” and asserts that Petitioner “identifies no error in this analysis” and thus fails to dispute any part of the Application as required under 10 C.F.R. § 2.309(f)(1)(vi).<sup>245</sup> PPL disputes Petitioner’s understanding of Pennsylvania tax law (asserting that he has mistakenly equated the RNR with cessation of payments under PURTA, and citing a section in its ER in which the tax situation is discussed in a more accurate manner), and urges that Petitioner’s criticism of the change in Pennsylvania’s tax laws “provides no demonstration that such change has any causal connection to license renewal.”<sup>246</sup>

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<sup>242</sup> PPL Answer at 26-30; Staff Response at 24-26.

<sup>243</sup> PPL Answer at 26.

<sup>244</sup> *Id.*

<sup>245</sup> *Id.* at 26-27.

<sup>246</sup> *Id.* at 27-28. Noting that NEPA “requires consideration only of ‘the environmental impact of the proposed action,’” *id.* at 28 (citing 42 U.S.C. § 4332(C)(i)), PPL cites Council on Environmental Quality (CEQ) regulations defining the effects that must be considered in an EIS as those “which are caused by the action,” *id.* (citing 40 C.F.R. § 1508.8), as well as case law interpreting this provision as “requiring a reasonably close causal relationship between the proposed action and an alleged environmental effect or impact — similar to proximate cause in tort law — before that effect need be considered,” *id.* (citing *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 773-74 (1983)), and stating that “[a]n EIS is not required . . . when the proposed federal action will effect no change in the status quo.” *Id.* (citing *Burbank Anti-Noise Group v. Goldschmidt*, 622 F.2d 115, 116-17 (9th Cir. 1980), *cert. denied*, 450 U.S. 965 (1981)). Consequently, PPL argues, since “[d]eregulation and the 1999 changes in Pennsylvania’s tax laws are not caused by license renewal and will not be affected by license renewal,” NEPA requires no analysis of them. *Id.* In addition, PPL cites the Supreme Court decision in the 2004 case of *Department of Transportation v. Public Citizen*, 541 U.S. 752 (2004), in which the Court “held that ‘where an agency has no ability to prevent a certain effect due to its limited statutory authority[,]’ it cannot be ‘considered a legally relevant ‘cause’ of the effect.’” *Id.* at 28-29 (citing 541 U.S. at 770).

PPL also disputes some of the factual allegations Petitioner makes, including that localities receive less income as a result of SSES’s current tax payments (stating that it now pays \$4 million as compared to \$1 million under PURTA for its property in the county in which SSES is located), *id.* at 29 & n.26,

(Continued)

The NRC Staff argues that “[p]ortions” of Contention 4 are outside the scope of this proceeding, citing a 1996 amendment to the license renewal rules in which the Commission indicated that “issues relating to utility economics are outside the scope of an environmental analysis because they are state issues.”<sup>247</sup> The Staff characterizes Petitioner’s call for reexamination of the economic impact of SSES on the community” as a “novel claim,” for which no basis is offered.<sup>248</sup> Finally, the Staff criticizes Petitioner’s failure to specify any parts of the Application he disputes, his “unsubstantiated declarations” about the tax issues he raises, and his failure to explain how these create any genuine dispute on any material issue of law or fact.<sup>249</sup>

Again, Petitioner in his Reply does not address the issues raised by PPL and the Staff in their responses to his contention, relating to the scope of license renewal and the need to show a genuine dispute on a material issue of law or fact.<sup>250</sup> Citing various other law, he does not mention the contention admissibility rules or any law on the scope of license renewal, arguing instead, e.g., that “[r]elicensing a nuclear power plant *should not* impose economic hardships on the host community,”<sup>251</sup> and that the “impact of relicensing on the local community is material and germane and the NRC *should not* sanction the relicensing of nuclear power plant [*sic*] that will result increased [*sic*] property taxes and electric rates and through [*sic*] up their hands and shout, ‘Not my problem.’”<sup>252</sup>

The primary bases offered for Petitioner’s argument, that the “NRC can and must consider economic affects [*sic*] on a community,” are “since they are interrelated with the natural physical effects of relicensing the SSES,” and, again, because a “sense of fair play and economic sanity require” it.<sup>253</sup> Petitioner repeats his argument that PPL should be compelled to resubmit information regarding socioeconomic stress on the community as well as regarding the amount of taxes it has paid.<sup>254</sup> And, finally, yet again with regard to this contention, Petitioner

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and that PPL somehow “refuses” to pay its taxes (noting with regard to the lawsuit referred to by Petitioner that this involved a different power plant and PPL’s dispute of a property assessment, “as any property owner may do”). *Id.* at 30. Of course, we do not address the merits of any allegations in our ruling on the admissibility of the contention, but include this to provide PPL’s “side of the story” with regard to the Petitioner’s allegations.

<sup>247</sup> Staff Response at 24-25 (citing Final Rule: “Environmental Review of Renewal of Nuclear Power Plant Operating Licenses,” 61 Fed. Reg. 28,467, 28,471-72 (June 5, 1996) (quote in text is Staff’s paraphrasing).

<sup>248</sup> *Id.* at 25.

<sup>249</sup> *Id.* at 25-26.

<sup>250</sup> Epstein Reply at 28-31.

<sup>251</sup> *Id.* at 28 (emphasis added).

<sup>252</sup> *Id.* at 29 (emphasis added).

<sup>253</sup> *Id.* at 29, 31.

<sup>254</sup> *Id.* at 31.

submits in his March 11, 2007, filing that the contention falls within the same environmental Category 2 item found in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1, as that provided for Contentions 1 and 3, namely, “Offsite land use (license renewal term).”<sup>255</sup>

In making our ruling, we note first, regarding Petitioner’s recent March 11 submission, that, although the ER section dealing with offsite land use is among those listed by Petitioner, nothing is provided to show any genuine dispute with what is contained in that section of the ER. Land use is not discussed or even mentioned in the Petition or any other document apart from Petitioner’s March 11 submission, nor indeed is *any* part of the Application specifically challenged. With regard to the general arguments made in both the Petition and in Petitioner’s Reply, these lack the focus as well as the “minimal factual and legal foundation” necessary to support an admissible contention.<sup>256</sup>

With specific regard to issues relating to utility economics, we note that the Commission explained its exclusion of consideration of this subject in the NEPA review associated with license renewal in its 1996 rulemaking, indicating that it had included such issues in the original proposed rule but eliminated consideration of them in response to concerns expressed by State, Federal and utility representatives who argued that “regulatory authority over utility economics falls within the States’ jurisdiction and to some extent within the jurisdiction of the Federal Energy Regulatory Commission.”<sup>257</sup> Most concerned states had expressed concern that NRC’s NEPA analysis not preempt their jurisdiction over the determination of need for generating capacity.<sup>258</sup>

The NRC decided to adopt an approach that, among other things, defined the “purpose and need for the proposed action (i.e., license renewal)” as “preserving the continued operation of a nuclear power plant as a safe option that State regulators and utility officials may consider in their future planning actions.”<sup>259</sup> The context for the Commission’s approach was stated as being the NEPA analysis of “alternatives,” in which the environmental review in license renewals “would include a comparison of the environmental impacts of license renewal with impacts of the range of energy sources that may be chosen in the case of ‘no action.’”<sup>260</sup> The Commission continued:

The NRC’s NEPA decision standard for license renewal would require the NRC to determine whether the environmental impacts of license renewal are so great

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<sup>255</sup> Epstein Citation Letter at 7.

<sup>256</sup> See discussion *supra* section V.A; *Oconee*, CLI-99-11, 49 NRC at 334.

<sup>257</sup> 61 Fed. Reg. at 28,471.

<sup>258</sup> *Id.*

<sup>259</sup> *Id.*

<sup>260</sup> *Id.*



that preserving the option of license renewal for future decisionmakers would be unreasonable.

The statement that the use of economic costs will be eliminated in this approach refers to the ultimate NEPA decision regarding the comparison of alternatives and the proposed action. This approach does not preclude a consideration of economic costs if these costs are essential to a determination regarding the inclusion of an alternative in the range of alternatives considered (i.e., an alternative's exorbitant cost could render it nonviable and unworthy of further consideration) or relevant to mitigation of environmental impacts. Also, the two local tax issues and the two economic structure issues under socioeconomics in the table would be removed from consideration when applying the decision standard.<sup>261</sup>

Petitioner does not discuss alternatives at all in Contention 4, appearing instead to be primarily concerned with issues of socioeconomic stress in the community, but he fails to provide sufficient information to show any genuine dispute with the Application on this or any other material issue of law or fact. We are thus obliged to find Contention 4 to be inadmissible.

**E. Contention 5: Alleged Noncompliance with Emergency Preparedness Requirements**

Petitioner in Contention 5 asserts:

PPL is in violation of the following Federal Regulations: 10 CFR § 50.47; 10 CFR § 50.54; 10 CFR § Part 50 Appendix E; and 44 CFR § 350.<sup>262</sup>

The following explanation is provided:

The Nuclear Regulatory Commission should hold a final decision for relicensing the SSES in abeyance until such time that PPL can demonstrate and verify its compliance with emergency preparedness measures at the Susquehanna Steam Electric Station under the Radiological Emergency Protective Measures outlined in 10 CFR § 50.47 (Condition of Licenses).<sup>263</sup>

To demonstrate that the “issue raised in the contention is within the scope of the proceeding,” Petitioner states that;

The Susquehanna Steam Electric Station has failed to include child care facilities in their Radiological Emergency Plans for the past 24 years. As such, all three

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<sup>261</sup> *Id.* at 28,471-72.

<sup>262</sup> Petition at 41.

<sup>263</sup> *Id.*

[sic] facilities are in violation of Federal Laws put into place due to Presidential Executive Order 12148 which mandates the provision of “reasonable assurance” that the public, including preschool children, could be protected in the event of a Radiological Emergency as a condition to own and operate a nuclear power license, and SAMA: E.3.2 Population, E.3.3 Economy, 3.4 EMPLOYMENT Current Workforce, E.3.5 Nuclide Release, E.3.6 Evacuation, E.4.5 Replacement Power Cost, and Susquehanna MACCS2 Economic Parameters Variable Description SSES Value, et al.<sup>264</sup>

To show the materiality of Contention 5, Petitioner asserts:

The NRC can not extend the license of a nuclear power plant that is in violation of the following Federal Regulations: 10 CFR § 50.47; and 10 CFR § 50.54; 10 CFR § Part 50 Appendix E; and 44 CFR § 350.<sup>265</sup>

Petitioner refers to a Federal Emergency Management Agency (FEMA) “Guidance Memorandum EV-2 Protective Actions for School Children (GM EV-2),” stating that this “federal regulation” requires that:

appropriate state and local government agencies provide all licensed childcare facilities (with more than 10 children) residing in Emergency Planning Zones (EPZs) with pre-planned radiological emergency services including notification, transportation and relocation centers.<sup>266</sup>

According to Petitioner, the preceding requirement has not been implemented within 10 miles of SSES.<sup>267</sup> Petitioner has been in contact with the NRC, FEMA, and the State of Pennsylvania to address this issue, and says he has also “filed suit at the Department of Justice on August on 28, 2006 [sic],” seeking “to compel the Department of Justice to compel [FEMA] and the [NRC] to review and assess the Special Needs’ Emergency Preparedness Plans at Pennsylvania’s nuclear generating stations to ensure that GM EV-2’s Protective Measures are in place for preschoolers and day care centers through Pennsylvania.”<sup>268</sup> Petitioner states that the NRC, FEMA, and Pennsylvania have “steadfastly refused to provide or enforce the protective actions” of GM EV-2, and attaches a “Chronology of the Legal History” on these matters to his Petition, which refers among other things to contacts he has had with various officials and entities, including two

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<sup>264</sup> *Id.*

<sup>265</sup> *Id.* at 42.

<sup>266</sup> *Id.*

<sup>267</sup> *Id.*

<sup>268</sup> *Id.* at 43.

rulemaking petitions to the NRC with which he has been associated, on the same subject as raised in this contention.<sup>269</sup>

Petitioner seeks to have this proceeding “delayed until this legal challenge is resolved to ensure that the NRC does no [*sic*] extend an out-of-compliance license.”<sup>270</sup> Additionally, he indicates that the Pennsylvania Attorney General referred Petitioner’s complaints with the State to the General Accounting Office, who according to Petitioner has since “forwarded the case to the Department of Homeland Security on November 20, 2006.”<sup>271</sup> Finally, he states that “[n]o proof exists that [SSES] is in compliance for any special needs’ populations within ten miles,” questions whether the public and children “could be protected in the event of a Radiological Emergency,” alleges that FEMA “is unable to properly implement GM EV-2 and has been submitting false finding to the NRC relating to [SSES] for 24 years,” and asserts that it is “impossible for federal, state, and local government to verify that any of Pennsylvania’s special needs’ populations can subscribe to NUREG-0654 J-12 Reception Centers since these facilities have not been assigned a relocation center.”<sup>272</sup>

PPL responds to Contention 5 by stating that it is outside the scope of license renewal and lacks any basis.<sup>273</sup> PPL refers us to SECY-06-0101, Emergency Preparedness for Daycare Facilities Within the Commonwealth of Pennsylvania; Update on Staff Actions and Request for Commission Approval for Related Staff Actions (May 4, 2006), which “demonstrates not only the absence of any real substance behind [Petitioner’s] allegations,” but also “how NRC’s ongoing regulatory oversight ensures the adequacy of emergency preparedness, which is the very reason why emergency planning is beyond the scope of license renewal.”<sup>274</sup>

The Staff agrees with PPL, emphasizing that evacuation planning is “not related to a structure or component which requires an aging management review, nor is it a Category 2 environmental issue which must be analyzed for a license renewal,” and that the Commission “has specifically excluded emergency planning

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<sup>269</sup> *Id.*

<sup>270</sup> *Id.* at 44.

<sup>271</sup> *Id.* In his later filing of February 28, 2007, Petitioner notified the Board and parties that the U.S. Department of Homeland Security (DHS) Inspector General’s Office had acknowledged receipt of Mr. Epstein’s “Motions ‘Re: Special Needs’ Emergency Planning as a Condition for a License,” which had been forwarded by the Pennsylvania Attorney General’s office. Epstein Homeland Security E-mail.

<sup>272</sup> Petition at 45 (footnote omitted).

<sup>273</sup> PPL Answer at 30.

<sup>274</sup> *Id.* at 31.

from license renewal proceedings because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal.’’<sup>275</sup>

Petitioner in his Reply, again, does not address the law and rules governing the scope of license renewal and the admissibility of contentions, but instead essentially repeats arguments made in his original contention.<sup>276</sup>

In ruling on Contention 5, we recognize that Petitioner raises a significant issue. Obviously, emergency evacuation of children in day care centers in the event of a radiological emergency is a matter of concern. The Commission, however, has categorically stated in the introductory language of 10 C.F.R. § 50.47 that emergency plans do not fall within the scope of license renewal. More specifically, 10 C.F.R. § 50.47, entitled “Emergency Plans,” which Petitioner alleges PPL is in violation of, and which is a multi-page rule governing many aspects of the sort of protective measures that must be taken in the event of a radiological emergency, states the following at the second sentence thereof: “No finding under this section is necessary for issuance of a renewed nuclear power reactor operating license.”

Regarding the other regulations Petitioner alleges PPL to violate, 10 C.F.R. § 50.54 is an even longer rule concerning “Conditions of licenses,” and addresses a large number of conditions that “shall be deemed conditions in every license issued.” Part 50, Appendix E governs “Emergency Planning and Preparedness for Production and Utilization Facilities” and has sections addressing the preliminary and final Safety Analysis Reports, the Content of Emergency Plans, Implementing Procedures, and an Emergency Response Data System. Part 350 of 44 C.F.R. is a rule of the Federal Emergency Management Agency (FEMA), concerns “Review and Approval of State and Local Radiological Emergency Plans and Preparedness,” and has fifteen subsections ranging from “Purpose” to “Criteria . . .” to “Exercises” to “Appeal Procedures.” Petitioner does not discuss any specific sections of any of these rules that PPL allegedly violates, again making only general references in this regard.<sup>277</sup>

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<sup>275</sup> Staff Response at 27 (citing 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1; *McGuire/Catawba*, CLI-02-26, 56 NRC at 363-64; *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 560-61 (2005); *Turkey Point*, CLI-01-17, 54 NRC at 9-10).

<sup>276</sup> Epstein Reply at 33. Petitioner again insists that he “filed suit at” the Department of Justice, and takes issue with PPL’s characterization of the document he sent to DOJ as a “letter.” *Id.* at 33 n.22.

<sup>277</sup> In comparison, we note that the licensing board in another license renewal proceeding, involving the Pilgrim Nuclear Power Station in Massachusetts, admitted a contention involving certain emergency evacuation issues, in the specific context of three of the specific input data for the severe accident mitigation alternatives (SAMA) analysis that license renewal applicants are required to perform. *See Pilgrim*, LBP-06-23, 64 NRC at 323-41. In that limited context, based on a relatively well-supported and technical presentation in comparison to that made by Petitioner, the licensing board admitted a contention stating the following:

(Continued)

We recognize that Petitioner in his discussion of Contention 5 uses the term “SAMA,” referring to the Category 2 issue of “Severe accidents” (and mitigation alternatives) that is listed in Table B-1 of 10 C.F.R. Part 51, Subpart A, Appendix B.<sup>278</sup> More than this is required, however. While 10 C.F.R. § 2.309(f)(1)(vi) requires that the information provided to support a contention must “include references to specific portions of the application,” this is but part of what is required. As stated above, a Petitioner must provide “sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact.” This Petitioner Epstein has not done. In contrast to the petitioners in the *Pilgrim* proceeding,<sup>279</sup> Petitioner Epstein nowhere discusses, or challenges, any specific input data for the SAMA analysis, nowhere discusses how the issue he wishes to raise fits into the Susquehanna SAMA analysis, and nowhere provides any supporting information to show any genuine dispute with the Applicant on such data. Therefore, even apart from the scope issue, the contention must be denied because it has not met the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

With regard to Petitioner’s rulemaking petitions on the subject of emergency planning for day care centers, the Commission denied both petitions.<sup>280</sup> We note that, in the denial of the latter petition, which was apparently filed by Mr. Epstein alone, the Commission indicated that the “petition and information obtained during the review of the petition raised questions about local implementation of relevant requirements and guidelines,” and that it had accordingly “directed the NRC staff to undertake several actions to further assess these implementation questions and to provide appropriate recommendations for improvement.”<sup>281</sup> In

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Applicant’s SAMA analysis for the Pilgrim plant is deficient in that the input data concerning (1) evacuation times, (2) economic consequences, and (3) meteorological patterns are incorrect, resulting in incorrect conclusions about the costs versus benefits of possible mitigation alternatives, such that further analysis is called for.

*Id.* at 341. That contention thus fell squarely within the environmental aspect of license renewal as opposed to the safety aspect thereof (in which it has been ruled that emergency planning is an issue that need not be re-examined in a license renewal). *Id.* at 340 (citing *Turkey Point*, CLI-01-17, 54 NRC at 9). Moreover, what was called for in that contention was “further analysis.” *See id.* at 341. We note that NEPA requires only *analysis* and *consideration* of significant environmental impacts, not action on or “resolution” of any issues in the manner suggested by Petitioner. *See supra* note 125.

<sup>278</sup> *See* text accompanying note 264, *supra*.

<sup>279</sup> *See id.*

<sup>280</sup> *See* Proposed Rules, 10 CFR Part 50, Mr. Lawrence T. Christian, et al.; Denial of Petition for Rulemaking, 70 Fed. Reg. 75,085 (Dec. 19, 2005); Proposed Rules, 10 CFR Part 50, Mr. Lawrence T. Christian, et al.; Denial of Petition for Rulemaking, 71 Fed. Reg. 44,593 (Aug. 7, 2006); Proposed Rules, 10 CFR Part 50, Mr. Eric Epstein; Denial of Petition for Rulemaking, 72 Fed. Reg. 9708 (Mar. 5, 2007).

<sup>281</sup> 72 Fed. Reg. at 9708 (citing Staff Requirements Memorandum (SRM), Oct. 26, 2005, ADAMS Accession No. ML052990321).

response to this direction, the NRC Staff had met with DHS and the Pennsylvania Emergency Management Agency, who had “described a comprehensive program, mandated by Pennsylvania law, for licensed day care facilities that substantially enhances the existing emergency preparedness posture that was previously found by DHS to provide reasonable assurance that adequate protective measures will be taken for the public, including children in day care facilities.”<sup>282</sup> The Commission in denying the petition indicated that the NRC Staff had “provided the Commission the results of this assessment and other related initiatives” in SECY-06-0101, ADAMS Accession No. ML060760586.<sup>283</sup>

The Commission noted that it had considered a differing professional opinion (DPO) regarding the issue that was cited by Mr. Epstein in his rulemaking petition, but that the DPO raised issues about “local implementation of the requirements and guidance, and DHS/FEMA evaluation of local implementation, neither of which could be resolved by the petitioner’s proposal that the GM EV-2 criteria be incorporated into NRC regulations.”<sup>284</sup> Noting that “GM EV-2 is a guidance document developed by FEMA and utilized by the DHS, which has primary responsibility for assessing the adequacy of offsite emergency preparedness,” and that the “NRC bases its own findings in part on a review of DHS’s findings and determinations as to whether State and local emergency plans are adequate and whether there is reasonable assurance that they can be implemented,” the Commission also stated, in a footnote, that it had on October 26, 2005, directed the Staff to “develop guidance and expectations for the NRC review of FEMA’s assessment and findings of offsite emergency preparedness,” which activity “should address the petitioner’s and the DPO’s issues with respect to the adequacy of FEMA/DHS evaluation of local implementation of offsite emergency preparedness.”<sup>285</sup>

It thus appears that Petitioner’s concerns are not being ignored, as he suggests. In addition, as he has informed us, he continues to press his issue before the Department of Homeland Security. As discussed above, however, under relevant law governing license renewal proceedings, this Licensing Board may not admit the contention submitted by Petitioner.

## VII. CONCLUSION AND ORDER

In conclusion, although we find that Petitioner Epstein has established individual standing in this proceeding, we further find that his petition may not be

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<sup>282</sup> *Id.* at 9709.

<sup>283</sup> *Id.*

<sup>284</sup> *Id.* at 9708.

<sup>285</sup> *Id.* at 9709 & n.3.

granted because he has not submitted an admissible contention, for the reasons we have stated above.<sup>286</sup>

Therefore, based on the preceding rulings, findings, and conclusion, it is, this 22d day of March 2007, ORDERED that the Petition To Intervene of Eric Joseph Epstein be DENIED and this proceeding be TERMINATED.

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<sup>286</sup> Because Petitioner Epstein appears *pro se* in this proceeding, we add an additional note of explanation and clarification at this point, centering on the observation that there are some basic legal principles that not only govern our actions herein but also protect the rights of petitioners such as himself to fair and neutral decisionmaking in such proceedings. These principles include the related requirements that we be independent in our decisionmaking, ruling without fear or favor, and that we base our rulings solely on the facts and the law applicable in any given case — no matter where this leads us, whether for or against any party, including the NRC Staff, a license applicant, or a petitioner such as Mr. Epstein. *See, e.g.*, ABA Model Code of Judicial Conduct (Feb. 2007), Canon 1, Rule 1.1; Canon 2, Rules 2.2, 2.4. While there may be varying views in some instances on what the result should be in a particular case, as administrative judges we are required to base our decisions on our own best reading of the facts and law of any given case, and not on any other factors or influences.

The law that governs our actions in this proceeding includes, as we discuss in sections III and V.A of our Memorandum, statutes, regulations, and case law decisions relating to the standing of petitioners to participate in NRC adjudicatory proceedings and to the admissibility of contentions submitted in such proceedings. It also, as illustrated in section V.B above, includes law specifically concerning license renewal proceedings, the scope of which has been narrowly restricted by the Commission in its regulations and decisions in other license renewal proceedings. We have summarized some of the relevant law on these subjects, as context for our rulings herein.

We note that in some instances Petitioner herein appears to disagree strongly with a law or rule, or alleged lack thereof. However, adjudication involves the resolution of disputes *based on existing law*, which effectively sets the parameters of the dispute and governs how it is to be resolved. In contrast, to the extent one disagrees with existing law, including regulations governing matters at issue, this is best addressed through means other than adjudication, for example, through legislation or rulemaking.

One may petition the Commission for a rulemaking to change an NRC rule of concern; one may also request waiver of a rule, seek an enforcement action by Commission staff, or approach other entities with relevant legislative, regulatory, or enforcement jurisdiction. *See, e.g.*, section V.A & text accompanying notes 102-103, *supra*. It appears that Petitioner is familiar with the rulemaking approach, having been involved in the filing of at least two such petitions to the Commission. *See* discussion of Contention 5 in section VI.E, above. Also, it may be that some entities will have greater discretion to consider some of the other sorts of approaches that Petitioner proposes in his arguments to us. But with regard to adjudication, it may be helpful to observe that the limitation of judges' discretion to following relevant law, and applying it to the best of their ability to the individual facts of particular cases (as opposed to being open to arguments based on appeals to emotion, for example), better ensures decisions that are fair — consistently applied to all similarly situated persons — rather than based on bias, prejudice, caprice, improper influence, or indeed sympathy, which may vary depending upon the individual inclinations and personalities of different judges.

We would also observe that, while petitioners such as Mr. Epstein are to be commended for becoming involved as concerned citizens on public issues of concern, it is generally the case in legal proceedings that the assistance of competent legal counsel is necessary in order to be as focused and effective as possible in pursuing one's case. Particularly in a proceeding (such as this one) involving relatively complex issues and law, a party without a lawyer will likely be at a disadvantage. But while

*(Continued)*

Because we rule herein on an intervention petition, *any appeal to the Commission from this Memorandum and Order must be filed within ten (10) days after it is served*, in accordance with the provisions of 10 C.F.R. § 2.311.

THE ATOMIC SAFETY AND  
LICENSING BOARD

Ann Marshall Young, Chair  
ADMINISTRATIVE JUDGE

Dr. Kaye D. Lathrop (by E. Roy Hawkens)  
ADMINISTRATIVE JUDGE

Dr. William W. Sager (by E. Roy Hawkens)  
ADMINISTRATIVE JUDGE

Rockville, Maryland,  
March 22, 2007<sup>287</sup>

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we may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleading, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, we may not “fill in” any missing support, but, rather, are legally required to deny the contention. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991); *Consolidated Edison Co. of New York* (Indian Point, Unit 2), LBP-83-5, 17 NRC 134, 136 (1983); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-3, 53 NRC 84, 99 (2001); *see also Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 422 (2001); *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305 (1995).

Our responsibility to make our decisions based on existing law and on what is provided by a petitioner in support of a contention is, thus, not suspended in an instance in which a petitioner may have failed to comply with all relevant requirements as a result of not having a lawyer and not being skilled in the law himself. Indeed, the principles underlying the contention admissibility requirements of the NRC procedural rules include the need for a petitioner to show “at least some minimal factual and legal foundation” in order to trigger a full adjudicatory hearing, which must be focused on “real disputes susceptible of resolution in an adjudication.” *See* discussion in section V.A, above; *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999) (emphasis added). More broadly, only through our own best, good-faith efforts to follow and apply the law consistently can we aid in the realization of the broader public interest in fair proceedings generally. We endeavor herein to fulfill our duty in this regard.

<sup>287</sup>Copies of this Order were sent this date by Internet e-mail transmission to all participants or counsel for participants.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:**

**Alan S. Rosenthal**, Chairman  
**Dr. Richard E. Wardwell**  
**Dr. William H. Reed**

In the Matter of

Docket No. 40-7102-MLA  
(ASLBP No. 07-852-01-MLA-BD01)

**SHIELDALLOY METALLURGICAL  
CORPORATION**  
(Amendment Request for  
Decommissioning of the  
Newfield, New Jersey Facility)

**March 28, 2007**

**RULES OF PRACTICE: STANDING TO INTERVENE**

A hearing requestor must demonstrate the existence of the requisite standing to raise questions regarding the acceptability of the particular proposal at hand. To that end, the Rules require that the requestor set forth, *inter alia*, his or her interest in the proceeding, as well as the possible effect that any order or decision entered therein might have upon that interest. 10 C.F.R. § 2.309(d)(1).

**RULES OF PRACTICE: STANDING TO INTERVENE**

The Commission has long applied the test that is employed in the federal courts in resolving standing issues — i.e., the requestor must allege “a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision.” *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993) (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 561 (1992)).

**RULES OF PRACTICE: PARTICIPATION BY AN INTERESTED STATE OR LOCAL GOVERNMENT**

In the case of governmental entities, status as a party is not a condition precedent to participation in NRC adjudicatory proceedings. By virtue of 10 C.F.R. § 2.315(c), an interested state or political subdivision thereof that has not become a party to the proceeding must be accorded a reasonable opportunity to participate, through a single representative, in the hearing of one or more of the admitted contentions.

**RULES OF PRACTICE: STANDING TO INTERVENE (INTEREST)**

Although it is clearly established in the Commission's regulations and case law that a state or local governmental body has standing to intervene in a proceeding for a facility that is located within its boundaries, the same does not hold true for individual legislators wishing to participate as a party on behalf of unnamed constituents. Rather, licensing boards have consistently ruled that one does not acquire standing as a consequence of being a member of a legislative tribunal. See *Babcock & Wilcox* (Apollo, Pennsylvania Fuel Fabrication Facility), LBP-92-35, 36 NRC 355, 358 n.9 (1992); *Combustion Engineering, Inc.* (Hematite Fuel Fabrication Facility), LBP-89-23, 30 NRC 140, 145 (1989); *General Electric Co.* (GE Test Reactor, Vallecitos Nuclear Center), LBP-79-28, 10 NRC 578, 582-83 (1979).

**RULES OF PRACTICE: CONTENTIONS (PLEADING)**

As the Commission has stressed on numerous occasions, "the contention rule is strict by design" (*Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001); *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP site), CLI-05-29, 62 NRC 801, 808 (2005)), and does "not permit the filing of a vague, unparticularized contention, unsupported by affidavit, expert, or documentary support." *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 219 (1999) (citation and internal quotation marks omitted).

**RULES OF PRACTICE: CONTENTIONS**

While it is true that, at the time contentions are filed, a petitioner is not required to have developed the entire factual record on which it intends to rely at a hearing, even in the case of a *pro se* litigant some level of factual or expert support must be furnished.

**MEMORANDUM AND ORDER**  
**(Ruling on Hearing Requests)**

This proceeding had its genesis in the publication of a notice in the *Federal Register* to the effect that the Commission was considering the issuance of an amendment to Source Material License No. SMB-743 that had been issued to the ShieldAlloy Metallurgical Corporation [Licensee]. If granted, the amendment will authorize, in accordance with a submitted plan, the decommissioning of the Licensee's facility where the licensed activities had been conducted. The site is located in the Borough of Newfield, Gloucester County, New Jersey. The notice provided the customary opportunity for persons whose interest might be affected by the proceeding to file a written request for a hearing on the proposed amendment. 71 Fed. Reg. 66,986 (Nov. 17, 2006).

In response to the notice, hearing requests were filed by or on behalf of a number of governmental entities within the State of New Jersey: the New Jersey State Department of Environmental Protection [New Jersey]; Gloucester County; nearby Cumberland County; and the Borough of Newfield. In addition, a joint request was received from three members of the New Jersey State Legislature (Fred H. Madden, David R. Mayer, and Paul Moriarity) and two such requests were submitted by private citizens (Loretta Williams and Terry Ragone, the latter said to be acting in a representational capacity on behalf of Newfield residents). Responses to each hearing request were filed by the Licensee and the NRC Staff. New Jersey alone submitted a reply to those responses.

Upon consideration of the filings before us, and for the reasons set forth below, solely the New Jersey request is being granted. Each of the others is being denied as not satisfying the requirements of the applicable provisions of the Commission's Rules of Practice. Despite the denial of their requests, however, as will be seen, the two counties and the borough will be entitled to participate as nonparties in any hearing ultimately held on issues raised by New Jersey.

Subject to reconsideration at the behest of one or more of the parties, we have additionally decided to defer all further proceedings in this matter to await the completion of the NRC Staff's safety and environmental review of the tendered decommissioning plan and the issuance of the documents reflecting the results of that review. That deferral includes threshold consideration of all of New Jersey's contentions other than the one that we have found to provide a sufficient basis for the grant of its hearing request.

**I. BACKGROUND**

As explained in the *Federal Register* notice, *supra*, the Licensee has been conducting smelting and alloy production at its Newfield site since 1940. Among

other things, during an extended period ending in June 1998, the facility processed pyrochlore, a concentrated ore containing columbium (niobium), to produce ferrocolumbium, an additive/conditioner used in the production of speciality steel and super alloy additives.

Because pyrochlore contains more than 0.05% by weight uranium and thorium, it is subject to NRC regulation as a source material. *See* 10 C.F.R. § 40.4. Accordingly, the Licensee sought and obtained license No. SMB-743 that entitled it to ship, to receive, to possess, and to store such material.

In August 2001, the Licensee advised the Commission that it had ceased using source material and intended to decommission the Newfield facility. As a consequence of this development, the license was later amended in November 2002 to authorize only decommissioning activities. In October 2005, the Licensee submitted its initial decommissioning plan (DP), which proposed the use of a possession-only license for long-term control of the site. According to the *Federal Register* notice, that plan was rejected by the NRC Staff. A revised DP, submitted on June 30, 2006, was, however, found acceptable by the Staff for the purpose of initiating the technical review of the plan that will eventually produce both a safety evaluation report (SER) and an environmental impact statement (EIS).

In broad outline, although not discussed in the notice, the revised DP now under NRC Staff review addresses principally an accumulation on the Newfield site of 18,000 cubic meters of slag and 15,000 cubic meters of baghouse dust, all of which contains uranium and thorium. It appears that the plan contemplates that the contaminated material will be maintained in a pile on 8 acres within the facility's storage yard. The pile is to be graded and shaped and then covered with an engineered barrier consisting principally of native soil and rocks. Long-term maintenance and monitoring of this restricted area would be performed by the Licensee under conditions imposed by the NRC Staff. The remainder of the site would be released for unrestricted public use.

## II. THE HEARING REQUEST REQUIREMENTS

As customary, the opportunity for hearing provided in the *Federal Register* was accompanied by a specific reference to the provisions of the Commission's Rules of Practice respecting the required content of hearing requests in proceedings such as this one. As the Commission and its licensing boards have made quite clear, full compliance with the dictates of these provisions is a condition precedent to the grant of such a request.<sup>1</sup>

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<sup>1</sup> *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

To begin with, the hearing requestor must demonstrate the existence of the requisite standing to raise questions regarding the acceptability of the particular proposal at hand. To that end, the Rules require that the requestor set forth, *inter alia*, his or her interest in the proceeding, as well as the possible effect that any order or decision entered therein might have upon that interest. 10 C.F.R. § 2.309(d)(1). In that regard, the Commission has long applied the test that is employed in the federal courts in resolving standing issues — i.e., the requestor must allege “a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision.” *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993) (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 561 (1992)). In addition, the claimed injury must be arguably within the zone of interests protected by the governing statute (here either the Atomic Energy Act of 1954, 42 U.S.C. §§ 2011 *et seq.*; or the National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq.*). *See ibid.*

It is not enough, however, that the requestor satisfy the standing requirement. In order to obtain a grant of the sought hearing, the request must also advance at least one contention that meets the admissibility standard set forth in 10 C.F.R. § 2.309(f)(1). *See* 10 C.F.R. § 2.309(a). That standard requires the requestor to provide, with regard to every contention sought to be admitted, (1) a specific statement of the issue of law or fact to be raised; (2) a brief explanation of the basis for the contention; (3) a demonstration that the issue raised in the contention is within the scope of the proceeding; (4) a demonstration that the issue raised in the contention is material to the findings that the NRC must make to support the action that is involved in the proceeding; (5) a concise statement of the alleged facts or expert opinions that support the requestor’s position; and (6) sufficient information to show that a genuine dispute exists on a material issue of law or fact, including, among other things, references to specific portions of the application that the requestor disputes. 10 C.F.R. § 2.309(f)(1)(i)-(vi).

In the case of governmental entities, however, status as a party is not a condition precedent to participation in NRC adjudicatory proceedings. By virtue of 10 C.F.R. § 2.315(c), an interested state or political subdivision thereof that has not become a party to the proceeding must be accorded a reasonable opportunity to participate, through a single representative, in the hearing of one or more of the admitted contentions. It may introduce evidence; interrogate witnesses in circumstances where cross-examination by the parties is allowed; advise the Commission without being required to take a position on any issue; file proposed findings where such are allowed; and seek Commission review on admitted contentions.

### III. ANALYSIS

A. With the foregoing regulatory requirements in mind, we now turn to consider *seriatim* the several hearing requests to determine whether (1) the requisite standing has been established in accordance with 10 C.F.R. § 2.309(d); and (2) there has been advanced at least one admissible contention meeting the requirements of 10 C.F.R. § 2.309(f)(1).

#### 1. Gloucester County

Given that the facility is located within its boundaries, Gloucester County's standing is beyond cavil. Its hearing request sets forth four separate contentions; each is addressed in turn below.<sup>2</sup>

##### a. Contention 1

Permitting [the Licensee] to Facilitate their DP Plan would have profoundly negative economic implications for the residents and businesses of Newfield, the surround[ing] areas and the County of Gloucester.

Gloucester Hearing Request at 3.

Gloucester asserts that property values will decrease because "it is extremely dangerous and undesirable to reside near a facility storing hazardous radioactive material," and, as a result, businesses will lose revenue and potential businesses will choose not to begin operations in the area. *Id.* at 4. To support this thesis, Gloucester cites a yet-to-be prepared expert report by Allen Black, Special Appraiser for the firm Todd & Black, Inc., that assertedly will demonstrate the DP's "severe and detrimental economic consequences to the residents and businesses of the Township of Newfield and the surrounding areas." *Id.* at 5. Additionally, Gloucester references the statement of Sue Mavilla, a Newfield resident, claiming that "she moved to Newfield 30 years ago from Northern New Jersey to escape the refineries present there," as evidence that other residents and businesses might relocate to escape potential dangers presented by the Licensee's site. *Ibid.*

At issue at this stage in the proceeding is the Licensee's DP and its accompanying environmental review documents. As the Licensee and the Staff point

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<sup>2</sup> See Gloucester County Board of Chosen Freeholders Request for Hearing and Petition To Intervene (Jan. 11, 2007) [hereinafter Gloucester Hearing Request].

out,<sup>3</sup> however, the contention fails to identify the portions of the Licensee's DP deemed to be inadequate. Although it is true that the DP must address economic considerations, a contention that seeks to raise issues in that sphere must "include references to specific portions of the [DP] that the petitioner disputes" in order to demonstrate a genuine dispute. 10 C.F.R. § 2.309(f)(1)(vi). Accordingly, Gloucester's first contention is inadmissible.

*b. Contention 2*

Approving [the Licensee's] Decommissioning Plan would have a detrimental effect on the health and safety of the residents of Newfield, the surrounding areas and the County of Gloucester.

Gloucester Hearing Request at 5.

As the basis for its second contention addressing health and safety concerns, Gloucester states that the "hazardous radioactive waste [the Licensee] proposes to store at their Newfield site is extremely dangerous and causes severe and life threatening illnesses." *Id.* at 6. To support this claim, Gloucester points to the statements made at a December 12, 2006, public information session by members of the public who reside near the Licensee's facility, describing instances of cancer and tumors in their neighborhoods and families. *See id.* at 7. According to the hearing request, these statements describe a high rate of cancer and tumors in the area surrounding the Licensee's facility and provide the required support for its contention. *See ibid.*

We agree with the Licensee and the Staff that, in common with the first contention, this contention does not controvert the DP.<sup>4</sup> Without specific references to alleged inadequacies in the Licensee's analysis regarding the health and safety concerns raised in the contention, Gloucester's challenge falls short of demonstrating a genuine dispute of law or fact, as required by 10 C.F.R. § 2.309(f)(1)(vi), and is therefore inadmissible.

*c. Contention 3*

The interests of environmental justice require the NRC to deny [the Licensee's] DP

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<sup>3</sup> See NRC Staff's Response to Request for Hearing by Gloucester County Board of Chosen Freeholders (Feb. 5, 2007) at 5 [hereinafter Staff Answer to Gloucester]; Shieldalloy's Answer to Request for Hearing and Petition To Intervene of Gloucester County Board of Chosen Freeholders (Feb. 6, 2007) at 13 [hereinafter Licensee Answer to Gloucester].

<sup>4</sup> See Licensee Answer to Gloucester at 15; Staff Answer to Gloucester at 7-8.

and mandate the removal of the radioactive material from the Newfield, New Jersey Site.

Gloucester Hearing Request at 8.

Invoking the “interests of environmental justice,” Gloucester’s third contention focuses on the adequacy of the DP’s provisions in the realm of financial assurance. The contention maintains that the Licensee’s estimated costs improperly exclude several items and, therefore, the Licensee has not provided sufficient financial assurance to the taxpayers in the event that it should be required to declare bankruptcy. *See ibid.* In this connection, Gloucester claims that the DP is inadequate because it “only provides for monitoring the site for 1,000 years despite the fact the radioactive material will not break down for possibly billions of years.” *Id.* at 9. To support the contention, Gloucester refers to statements made by the former mayor of the Borough of Newfield, Richard W. Westergaard, at the December 12, 2006, information session, listing an assortment of alleged costs the Licensee failed to consider, including the costs of sampling surface and groundwater, security monitoring, cap and fence repair and replacement, the impact on property values, and the costs associated with groundwater cleanup. *See ibid.*

Although initially characterized as an environmental justice contention, as seen Gloucester raises exclusively financial concerns. Starting with the statements of Mayor Westergaard offered as support for the contention, we agree with the Licensee and the Staff that the allegations of unaccounted costs are no more than “bare assertions” and fail to provide the required supporting facts or expert opinion. *See* 10 C.F.R. § 2.309(f)(1)(v); *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

*d. Contention 4*

The NRC’s review of [the Licensee’s] decommissioning plan under the NRC’s long-term storage license program is an improper and prejudicial application of its regulatory authority in that the NRC’s long-term storage license program was not meant to cover manufacturing activities like SMC, which could open the door for countless abandoned radioactive waste piles like SMC across the country. Nor was the NRC’s long-term storage license regulation intended to give waste generators the right to handle or manage their waste (or abandon it, as the case may be) in a fashion different or less environmentally protective from other waste generators across the country.

Gloucester Hearing Request at 10.

Unlike its other three contentions, Gloucester’s fourth contention does not attempt to address the contention admissibility factors in 10 C.F.R. § 2.309(f)(1);



rather, it appears simply to voice an objection to the NRC's Long Term Control (LTC) license option and its application to the Licensee's facility.<sup>5</sup> As observed by the Licensee and the Staff,<sup>6</sup> Gloucester has failed to provide any support for its claims that the LTC license option is inapplicable or impermissible in this case; rather, it merely asserts, without more, that it is "improper." Because no legal authority or other support is cited to bolster its claims regarding the purpose and scope of the LTC license option, the contention is inadmissible. *See* 10 C.F.R. § 2.309(f)(1)(v).

It thus appears that none of Gloucester's contentions meets the admissibility standards. Accordingly, its hearing request must be denied.

## **2. Borough of Newfield**

The facility also being within its boundaries, the Borough of Newfield likewise has the requisite standing. In its hearing request, Newfield claims that the Licensee has failed to comply with a Consent Order entered into by the Licensee and the New Jersey Department of Environmental Protection.<sup>7</sup> As a result, it is said, the Licensee

has placed the Borough and its residents at significant risk for continued environmental harm which will cause significant health, safety and welfare concerns to the Borough's residents and will otherwise significantly impact upon property values and the ability to use over seventy (70) acres of property available within the Borough.

Newfield Hearing Request at 2.

We agree with the Licensee and Staff that the issue of compliance with the State Consent Order is beyond the scope of this proceeding.<sup>8</sup> The "Notice of Consideration of Amendment Request for Decommissioning for Shieldalloy Metallurgical Corporation, Newfield, NJ and Opportunity To Request a Hearing," 71 Fed. Reg. at 66,986, defines that scope, which is limited to whether the Licensee's DP complies with the Atomic Energy Act, the National Environmental Policy Act, and the NRC's regulations. Accordingly, the Newfield hearing

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<sup>5</sup> *See* Staff Requirements — SECY-06-0143 — Stakeholder Comments and Path Forward on Decommissioning Guidance To Address License Termination Rule Analysis Issues (Sept. 19, 2006), ADAMS Accession No. ML062620515.

<sup>6</sup> *See* Staff Answer to Gloucester at 11; Licensee Answer to Gloucester at 20.

<sup>7</sup> *See* Request for Hearing of the Borough of Newfield (Jan. 16, 2007) [hereinafter Newfield Hearing Request].

<sup>8</sup> *See* Shieldalloy's Answer to Hearing Request of Borough of Newfield (Feb. 13, 2007) at 3; NRC Staff's Response to Request for Hearing by the Borough of Newfield (Feb. 12, 2007) at 6.

request must be denied for want of an admissible contention. *See* 10 C.F.R. § 2.309(f)(1)(iii). If the facility has in fact not complied with the Consent Order, the remedy is to seek enforcement by New Jersey Department of Environmental Protection.

### **3. *Cumberland County***

In its hearing request, Cumberland County asserts that one of its boundaries is immediately adjacent to the Licensee's site and that the County lies downgrade and downwind from the facility.<sup>9</sup> Continuing, it claims to have "taken a position consistent with that of Gloucester County and the New Jersey Department of Environmental Protection," in that it believes that the DP poses a threat to the health, safety, and welfare of the general public. Cumberland Hearing Request at 1. Further, Cumberland states that it intends to "rely on the expertise of the New Jersey Department of Environmental Protection with respect to these issues and the purpose of this correspondence is to make sure that the process does not continue to ignore the needs of the citizens of Cumberland County and the State of New Jersey." *Id.* at 2.

As noted by the Staff, Cumberland's filing appears to be a statement of support for the hearing request filed by New Jersey and an expression of interest and concern in the proceeding, rather than a formal petition to intervene in this proceeding.<sup>10</sup> Given the understandable absence of any challenge to its standing, we nonetheless treat the filing as a formal hearing request on behalf of the County. So regarded, we agree with the Licensee and the Staff that Cumberland has failed to proffer a specific contention meeting the admissibility requirements outlined in 10 C.F.R. § 2.309(f)(1). Its hearing request must therefore be denied. *See* 10 C.F.R. § 2.309(f)(1)(i).

### **4. *New Jersey State Senator Madden, Assemblymen Mayer and Moriarty***

In their joint hearing request,<sup>11</sup> New Jersey State Senator Fred H. Madden, Assemblyman David R. Mayer, and Assemblyman Paul Moriarty (State Legislators) assert, in what appears to be an attempted demonstration of standing, that, "as representatives of the residents of the Newfield and surrounding areas, [they] have a sincere concern regarding the large quantities of radioactive contaminated waste

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<sup>9</sup> *See* Request for Hearing by Cumberland County (Jan. 16, 2007) at 1 [hereinafter Cumberland Hearing Request].

<sup>10</sup> *See* NRC Staff's Response To Request for Hearing by Cumberland County (Feb. 12, 2007) at 2-3.

<sup>11</sup> *See* Request from New Jersey State Senator Fred H. Madden, Assemblyman David R. Mayer, and Assemblyman Paul Moriarty for a Hearing (Jan. 12, 2007) [hereinafter State Legislators' Hearing Request].

remaining at the ShieldAlloy site.’’ State Legislators’ Hearing Request at 1. What then follows is a discussion of general concerns with regard to the Licensee’s site and the DP, including concerns related to possible economic, environmental, and public health and safety harms. *See id.* at 1-2.

Although it is clearly established in the Commission’s regulations and case law that a state or local governmental body has standing to intervene in a proceeding for a facility that is located within its boundaries, the same does not hold true for individual legislators wishing to participate as a party on behalf of unnamed constituents. Rather, as noted by both the Licensee and the Staff, licensing boards have consistently ruled that one does not acquire standing as a consequence of being a member of a legislative tribunal. *See Babcock & Wilcox* (Apollo, Pennsylvania Fuel Fabrication Facility), LBP-92-35, 36 NRC 355, 358 n.9 (1992); *Combustion Engineering, Inc.* (Hematite Fuel Fabrication Facility), LBP-89-23, 30 NRC 140, 145 (1989); *General Electric Co.* (GE Test Reactor, Vallecitos Nuclear Center), LBP-79-28, 10 NRC 578, 582-83 (1979). In this instance, none of the legislators has attempted to demonstrate standing on any other basis and, thus, their hearing request must be denied. *See* 10 C.F.R. § 2.309(a).

##### **5. Loretta Williams**

At the outset of her hearing request, Ms. Williams states that she lives “within a few blocks of the Shieldalloy Metallurgical Corporation in [the] 1.7 square mile community” of Newfield.<sup>12</sup> Moving on, she lists multiple grievances with the DP including: the adequacy of the DP’s cost estimates; unaccounted economic, environmental, and health and safety risks; security risks and costs associated with the storage of radioactive waste at the site; the accuracy of the Licensee’s solubility testing and analysis; the application of the NRC’s dose criterion regulations; and the Licensee’s cost analysis regarding the possible offsite disposal of radioactive waste as an alternative to the procedure proposed in the DP. *See* Williams Hearing Request at 1-2.

The proximity of Ms. Williams’ residence to the Licensee’s facility satisfies the standing requirement. The question thus is whether her hearing request also satisfies the contention requirements. On this score, Ms. Williams alleges that the Licensee’s proposal poses numerous threats to the health and safety of Newfield residents and to the surrounding environment. What is missing, however, is a demonstration that she might, through expert opinion or factual development, connect the alleged threats to specific aspects of the Licensee’s DP. Where Ms.

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<sup>12</sup> *See* Request for a Hearing Submitted by Loretta Williams (Jan. 3, 2007) at 1 [hereinafter Williams Hearing Request].

Williams does mention the Licensee's DP, she does not address, with specific references to the Licensee's analyses, how she intends to demonstrate that the DP is flawed. As the Commission has stressed on numerous occasions, "the contention rule is strict by design"<sup>13</sup> and does "not permit the filing of a vague, unparticularized contention, unsupported by affidavit, expert, or documentary support."<sup>14</sup>

Although a certain amount of latitude might appropriately be extended to *pro se* litigants such as Ms. Williams, there nonetheless must be a substantial endeavor to meet the clear regulatory requirement that a hearing request provide a "specific statement of the issue of law or fact to be raised or controverted," together with a concise statement of the alleged facts or expert opinion supporting the contention and specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue. *See* 10 C.F.R. § 2.309(f)(1)(i), (v). Such an endeavor falling far short in this instance, Ms. Williams' hearing request must be denied.

## 6. *Terry Ragone*

Included in Ms. Ragone's hearing request is a statement regarding her standing to participate in this proceeding and a section labeled "Contentions."<sup>15</sup> The latter catalogues grievances associated with the alleged "unusual precedent of establishing a low level radioactive waste site in a densely populated area," allegations "that the dump site will inevitably cause economic hardship," and opposition voiced by the Borough of Newfield in the form of a Borough resolution. Ragone Hearing Request at 1-2.

As noted by both the Staff and the Licensee, it is difficult to identify any specific contention in the request or to determine what, if any, specific aspects of the DP Ms. Ragone seeks to challenge.<sup>16</sup> Her statements do not identify any portion of the DP that contravenes a statutory provision or NRC regulation and, therefore, she fails to provide sufficient information to demonstrate that a genuine dispute exists on a material issue of fact or law. *See* 10 C.F.R. § 2.309(f)(1)(vi).

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<sup>13</sup> *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001); *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP site), CLI-05-29, 62 NRC 801, 808 (2005).

<sup>14</sup> *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 219 (1999) (citation and internal quotation marks omitted).

<sup>15</sup> *See* Hearing Request from Terry Ragone (Jan. 15, 2007) at 1 [hereinafter Ragone Hearing Request].

<sup>16</sup> *See* Shieldalloy's Answer to Hearing Request of Terry Ragone (Feb. 5, 2007) at 3; NRC Staff Response to Hearing Request from Terry Ragone (Feb. 9, 2007) at 5.

Further, absent from the request is any form of factual information, documentary evidence, or expert opinions to support its claims. *See* 10 C.F.R. § 2.309(f)(1)(v).

While it is true that, at the time contentions are filed, a petitioner is not required to have developed the entire factual record on which it intends to rely at a hearing, even in the case of a *pro se* litigant some level of factual or expert support must be furnished. Accordingly, although Ms. Ragone has established her standing as an individual, the conclusion is required that her hearing request is devoid of an admissible contention and thus must be denied.<sup>17</sup>

## 7. *State of New Jersey*

In common with that of the counties and borough, New Jersey's standing is readily apparent. We thus turn to its contentions.

### *a. New Jersey's Contentions*

The New Jersey hearing request is divided into three parts, with "Technical Contentions" in Part I, "Environmental Contentions" in Part II, and a "Miscellaneous Contention" in Part III.<sup>18</sup> As the sixteen contentions presented in Part I are identical to those advanced in Part II, we will refer only to the ones in Parts I and III. *See* New Jersey Hearing Request at 1-89, 178-82.

New Jersey sets forth multiple contentions challenging the DP with respect to the technical analyses performed by the Licensee, essentially arguing that the DP has not demonstrated compliance with the relevant statutory and regulatory standards, including those prescribed in 10 C.F.R. § 20.1403. The contentions include challenges to the analyses performed regarding the proposed disposal design and siting, the dose modeling results, the exclusion of certain exposure pathways, and the DP's dose modeling time frame. Also advanced are challenges to the adequacy of the DP's site characterization, the Licensee's satisfaction of financial assurance requirements, and the Licensee's consideration of public input on the DP. To support these contentions, New Jersey provides the declarations and supporting statements of various purported experts in relevant fields.

In addition to challenges to the Licensee's technical analyses, New Jersey proffers numerous contentions addressing the legality of the regulatory avenues relied on in the submission of the Licensee's DP. Specifically, it questions the role

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<sup>17</sup> Given the failure to proffer an admissible contention, we need not address here the question as to whether Ms. Ragone has demonstrated standing in a representational capacity on behalf of "The Newfield Residents."

<sup>18</sup> State of New Jersey Department of Environmental Protection Petition for Hearing the Shieldalloy Metallurgical Corporation (License No. SMB-743) Decommissioning Plan (Jan. 16, 2007) [hereinafter New Jersey Hearing Request].

of the License Termination Rule's restricted use provisions,<sup>19</sup> the use of the Long Term Control–Possession Only License, and the Commission's decommissioning regulations generally.<sup>20</sup>

In response, both the Licensee and the Staff acknowledge that New Jersey has standing to participate in this proceeding.<sup>21</sup> The Licensee asserts, however, that none of New Jersey's seventeen proffered contentions satisfies the admissibility standards set forth in 10 C.F.R. § 2.309(f)(1).<sup>22</sup> For its part, the Staff would have it that eight of New Jersey's contentions are admissible, in whole or in part, and contests the admission of the remaining nine contentions.<sup>23</sup>

*b. Contention 5*

As previously noted, if (as here) the requisite standing has been established, under the terms of the Rules of Practice a hearing request must be granted upon a determination that it contains at least one admissible contention. With that in mind, we have elected to consider first New Jersey's Contention 5, which reads as follows:

The DP obtains inaccurate dose modeling results by ignoring the likely scenario of groundwater contamination and ignoring other reasonable assumptions.

New Jersey Hearing Request at 27.

As the basis for this contention, New Jersey points to 10 C.F.R. § 20.1403(e) and the regulation's requirement that “the TEDE [Total Effective Dose Equivalent] from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and would not exceed either (1) 100 mrem (1 mSv) per year; or (2) 500 mrem (5 mSv) under certain circumstances.” *Id.* at 28 (citation omitted). According to New Jersey, the inclusion of the “likely scenario of radionuclides contaminating the groundwater” in the dose modeling results in a dose level that exceeds the TEDE limit in the regulation. *Ibid.*

Additionally, New Jersey insists that the DP improperly excludes other reasonable exposure scenarios, including resident farmer and suburban resident

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<sup>19</sup> See 10 C.F.R. § 20.1403; 62 Fed. Reg. 39,058 (July 21, 1997).

<sup>20</sup> See generally 10 C.F.R. Part 20, Subpart E.

<sup>21</sup> See Shieldalloy's Answer to Petition for Hearing of State of New Jersey Department of Environmental Protection (Feb. 12, 2007) at 3 [hereinafter Licensee Response to New Jersey]; NRC Staff's Response to Request for a Hearing by New Jersey Department of Environmental Protection (Feb. 12, 2007) at 3 [hereinafter Staff Response to New Jersey].

<sup>22</sup> See Licensee Response to New Jersey at 13.

<sup>23</sup> See Staff Response to New Jersey at 5.

scenarios. *See id.* at 30-32. According to New Jersey, at some future time individuals might take up residence on currently restricted land and receive increased radiation exposure from activities associated with farming and the occupation of land in close proximity to the facility. Further, it takes issue with the DP's "all controls fail" dose modeling. *See id.* at 32. Here, New Jersey asserts that the Licensee has failed to perform adequate dose modeling for scenarios in which all engineered and institutional controls degrade or fail.

As support for the contention, New Jersey relies on the accompanying declaration and report of Jennifer Goodman, a research scientist with the Bureau of Environmental Radiation at the New Jersey Department of Environmental Protection.<sup>24</sup> The Goodman Report identifies numerous alleged deficiencies in the DP. In particular, with respect to the substance of Contention 5, it challenges the DP's treatment of groundwater exposure pathways and assumptions made in the dose modeling. Additionally, New Jersey cites declarations and/or reports filed by: Donna Gaffigan, Case Manager with the New Jersey Department of Environmental Protection, discussing groundwater exposure; Steven E. Spayd, Research Hydrogeologist & Supervising Geologist, Bureau of Water Resources, New Jersey Department of Environmental Protection, discussing dose modeling and the groundwater pathway; and Michael A. Malusis, Assistant Professor, Department of Civil and Environmental Engineering, Bucknell University, Lewisburg, PA, discussing groundwater pathway.

*c. Responses to Contention 5*

The Staff does not oppose the admission of Contention 5 to the extent that New Jersey challenges the DP's dose modeling for its failure to take into account certain exposure pathways and thus its underestimation of the peak annual TEDE.<sup>25</sup> The Staff does not, however, support the wholesale admission of the contention. First, it insists that NRC regulations do not require the Licensee to consider an "all controls fail" scenario in its dose modeling. *See* Staff Response to New Jersey at 10. Second, with respect to the "resident farmer scenario," the Staff claims that New Jersey has provided nothing more than a bare assertion that the Licensee should have addressed that scenario. *Ibid.*

As is the case with nearly all of the proffered contentions, the Licensee claims that Contention 5 fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi).

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<sup>24</sup> *See* New Jersey Hearing Request at 29. Ms. Goodman also supplied a resume describing her relevant technical qualifications.

<sup>25</sup> *See* Staff Response to New Jersey at 9-10. The Staff notes that Contention 5 presents arguments related to dose modeling and, in that respect, is closely related to the arguments presented in Contentions 9 and 10. Accordingly, the Staff addresses all three related contentions in combination and recommends that the Board do the same by consolidating the contentions.

Turning first to the assertion that the DP's dose modeling improperly excludes the groundwater pathway, the Licensee maintains that New Jersey's expert, Ms. Goodman, fails to address the DP's discussion "as to why groundwater need not be considered in the dose modeling" and, in particular, "ignores the fact that the groundwater is not potable because it is heavily contaminated with toxic chemicals." Licensee Response to New Jersey at 46. Further, the Licensee maintains that the contention and Ms. Goodman's supporting report do not address site-specific groundwater modeling performed by the Licensee that purportedly demonstrates that, even if the pathway was considered, there would be no significant radiological impact. *See id.* at 47. The Licensee would have it that, without addressing the DP's stated reasons for excluding groundwater as a pathway in its dose modeling, the contention cannot establish a genuine dispute and does not raise a litigable issue.

The Licensee further insists that the contention's claims regarding the farming and resident scenarios similarly fail to raise genuine disputes. *See id.* at 48. Specifically, it claims that the contention does not address the DP's assertions that the Licensee will "retain the [ ] site, both restricted and unrestricted portions, for industrial use" and that the site will be restricted from residential use independent of its radiological status. *Ibid.* Moreover, with respect to each assertion advanced in support of a particular contention, the Licensee addresses the factual documentation and/or expert opinion offered by New Jersey and attempts to demonstrate that the assertion is nonetheless without merit. *See id.* at 49-57.

*d. New Jersey's Reply*

With respect to Licensee's assertions that groundwater pathways need not be modeled because there are no drinking water wells within the restricted area and the water is not potable due to nonradioactive contamination, New Jersey responds that "there is no reason to believe" that in the distant future "wells will not be used in the vicinity of the facility for drinking water."<sup>26</sup> New Jersey further notes that the Licensee, as directed in the Consent Order, is currently conducting groundwater remediation for the nonradioactive contamination with the end goal of removing restrictions on the water's use. New Jersey Reply to Licensee at 11. Responding to the Licensee's claims that it ignored the DP's site-specific groundwater modeling, New Jersey asserts that the modeling was not discussed because there was "insufficient information to evaluate it." *Id.* at 11-12.

Respecting the Licensee's insistence that farming encroachment is not likely due to land-use restrictions that exist with regard to the facility site, New Jersey

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<sup>26</sup>New Jersey Department of Environmental Protection's Reply to the Answer of Shieldalloy (Feb. 27, 2007) at 11 [hereinafter New Jersey Reply to Licensee].



points out that 10 C.F.R. § 20.1403(e) prescribes radiation standards that must be met against the possibility that, at some future time, such institutional controls will no longer be in effect. *Id.* at 12-13. In this regard, New Jersey would have it that, over the course of “a billion years,” it is possible that the site will be inhabited by a resident farmer or suburban resident. *Ibid.* The remainder of its reply to the Licensee is devoted to addressing the dose modeling and technical challenges lodged by the Licensee in its answer.

As the Staff did not oppose the admission of Contention 5 in its entirety, New Jersey responded only to its claims regarding the “all controls fail” and “resident farmer” scenarios and, in that regard, repeats the argument it supplied in response to the Licensee.<sup>27</sup> Specifically, New Jersey cites 10 C.F.R. § 20.1403(e) and maintains that the regulation requires consideration of the “all controls fail” scenario. *See* New Jersey Reply to Staff at 4. It insists that, contrary to the claims of the Staff, it has supported sufficiently its claims with respect to these two scenarios by relying upon the LTR, the expert report of Jennifer Goodman, and facts available from the DP and other public sources. *See id.* at 5-6.

*e. Board’s Ruling*

We entertain little difficulty in reaching the conclusion that Contention 5 is admissible in its entirety. In a word, New Jersey has provided adequate support for its insistence that the dose modeling provided in the DP is inadequate to determine the potential long-term impact that leaving the slag pile *in situ* might have upon those residing in the vicinity of the facility.

We are unimpressed with the Licensee’s insistence that groundwater need not be considered in the dose modeling because it is currently contaminated with toxic chemicals. As New Jersey cogently observes in response, there is no assurance that this situation will remain for the duration of the lengthy period that the slag pile will continue to represent a radioactive hazard. In any event, as noted in paragraph 17 of the Gaffigan Declaration without contradiction, the Licensee is currently engaged in groundwater remediation for these nonradioactive contaminants that is mandated by a Consent Order that it had signed.<sup>28</sup> Notwithstanding that fact, it will be open to the Licensee to attempt to establish, by way of a motion for summary disposition or at an evidentiary hearing, that the possibility of the groundwater serving as drinking water over the relevant period is so remote that it can appropriately be entirely dismissed. At this preliminary stage, however, such a dismissal is plainly impermissible.

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<sup>27</sup> *See* New Jersey Department of Environmental Protection’s Reply to the Response of NRC Staff (Feb. 27, 2007) at 3-6 [hereinafter New Jersey Reply to Staff].

<sup>28</sup> *See* New Jersey Hearing Request at 36, Declaration of Donna L. Gaffigan (Jan. 16, 2007) ¶ 17.

What that leaves for consideration is the admissibility of so much of Contention 5 as challenges the exclusion in the DP of the resident farmer/suburban resident and “all controls fail” exposure scenarios. Contrary to the insistence of both the Licensee and NRC Staff, we are satisfied that New Jersey has offered enough to support those challenges at this very early stage of the proceeding. Whether they will be found meritorious when the evidentiary stage is reached is of no present moment.

To begin with, insofar as concerns the possibility offered by New Jersey of a resident planting a vegetable garden and consuming its produce, the environs of the Borough of Newfield are hardly to be equated with the urban environment that marks the five boroughs of New York City some distance to the north. Moreover, we are told by New Jersey, again without contradiction, that there is currently someone residing within very close proximity of the Licensee’s property. Our attention has also been called to the disclosure in the Licensee’s Environmental Report to the effect that there are farms located within a 1-mile radius of the facility.<sup>29</sup> That being so, and given the length of time that the slag pile might continue to represent a radioactive hazard, there would seem to be at least a reasonable possibility that, at a future date, there might be some exposure to the hazard on the part of one engaged in activities falling within the bounds of the resident farmer/suburban resident scenario. If, however, in justification of the DP’s failure to address such a scenario, the Licensee has compelling reasons why such a possibility may be entirely ruled out, it will have the opportunity to present that showing once the merits of the contention are reached.

With respect to the “all controls fail” scenario, it might well be that, as the NRC Staff asserts, there is no specific Commission requirement that such a scenario be included in the DP. New Jersey points, however, to the regulatory provision requiring an assumption that institutional controls will fail. *See* 10 C.F.R. § 20.1403(e). As it sees it, given that required assumption, it is not unreasonable to indulge in the additional assumption that, over the course of the lifetime of the radiological hazard, the engineered barriers will fail. Although the matter might not be free from all doubt, we believe that there is sufficient reason to allow the inclusion of this scenario within the ambit of what is being accepted as Contention 5. This issue will, of course, be open to further exploration when the proceeding reaches the merits stage.

**B.** It follows from the foregoing that, its standing not being in serious question and at least one of its contentions having been found to meet the standard for admissibility imposed by section 2.309(f) of the Rules of Practice, by virtue

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<sup>29</sup> *See* Shieldalloy Decommissioning Plan, Environmental Report, Appendix 19.9, § 3.0, Fig. 3-3, ADAMS Accession No. ML053330384.

of section 2.309(a) of those Rules the New Jersey hearing request must be granted. By the same token, given their failure to satisfy both the standing and the contention requirements, all of the other hearing requests must be denied.

In the case of the two counties and the borough, this does not mean, however, that they are precluded from participation in the evidentiary hearing that will ultimately be held in light of the grant of the New Jersey request. As earlier noted (*see* p. 345, *supra*), governmental entities (including counties and municipalities) are accorded by 10 C.F.R. § 2.315(c) the right to participate in adjudicatory proceedings such as this one without having to obtain party status. Indeed, it might well be concluded that, should they choose to invoke that right through the required designated representative, the counties and borough will assume a status preferable in some respects to that of a party. For, once again, the section explicitly authorizes the participating governmental entity to introduce evidence and to conduct such cross-examination as might be allowed to the parties, all without being obliged to take a position on the issues under consideration. In addition, as also seen, they enjoy the same entitlement possessed by the parties to file proposed findings and to seek Commission review of Board determinations.

It remains to be seen, of course, whether the counties and borough will desire to invoke the section 2.315(c) entitlement to participate in the proceeding as a nonparty. They might well be content simply to rely upon New Jersey to pursue their concerns, given the likelihood that, through its Department of Environmental Protection, the State has greater resources at its disposal for ventilating those concerns.

C. What is left for consideration is whether we need or should go forward at this juncture with a consideration of the admissibility of New Jersey's other contentions. As we read the Rules of Practice, there is no requirement that we do so. All that is mandated is that, within 45 days of the filing of the last pleading (here the February 27, 2007, New Jersey Reply to the Licensee and NRC Staff), the Board issue its decision on each hearing request before it. *See* 10 C.F.R. § 2.309(i). In this instance, insofar as the New Jersey request is concerned, that mandate has been met by our determination today that the request must be granted on the strength of its standing and the contention that we have found admissible. Insofar as the express terms of the Rules of Practice are concerned, it is left to us to decide whether, in the totality of circumstances, it is best to rule now on the admissibility of the balance of the New Jersey's contentions or, instead, to defer a ruling on them until a later date.

In another recent decommissioning proceeding, a licensing board addressed the same question. Its answer was that, having granted the hearing request there-involved on the strength of one admissible contention, it was appropriate, "in the interest of the economical use of [the board's] resources," to defer

consideration of the remaining contentions pending the Staff's completion of its technical review of the proposal under scrutiny and its issuance of the SER and EIS or EA. *See U.S. Army (Jefferson Proving Ground Site)*, LBP-06-6, 63 NRC 167, 185-86 (2006). Its rationale was this (*ibid.*):

It seems . . . quite possible, if not probable, that, upon its examination of the documents issued by the Staff at the end of the technical review, the Petitioner will find reason to alter in at least some respects the tack that it has taken in the challenge to the [Licensee's] proposal that is contained in the hearing request. For one thing, Petitioner might well find that some of the concerns that [have been] set forth in the request have been fully resolved. At the same time, it might determine, on the basis of the disclosures in the technical review documents, that there is cause to seek leave to amend one or more existing contentions or to add new ones. Any such endeavor would, of course, have to comply with the provisions of the Rules of Practice governing the submission of late contentions.

As it turned out, the *Army Board's* forecast of subsequent events proved to be on target. *See LBP-06-27*, 64 NRC 438 (2006). And it seems patent to us that the same analysis applies in full measure to the case of New Jersey's challenges to the decommissioning plan that is in issue here. There is no aspect of that plan that is set in stone and it is scarcely inconceivable that, whether as the result of the Staff's review or independent of it, the DP might undergo significant revision that would have a decided impact upon the New Jersey contentions now on the table.

In this connection, this Board and the parties to the proceeding have formally been made aware of a letter sent by an NRC Commissioner to the Licensee's President following the former's recent visit to the Newfield site.<sup>30</sup> In the letter, the Commissioner reiterated a suggestion, made at the time of a site visit, that there be further dialogue between the Licensee's staff and other interested parties to determine whether there might be "other options, in addition to onsite decommissioning," that might allow the "reuse of the site in a cost effective way."<sup>31</sup>

We do not presume to speculate on what might be the outcome of that suggestion. It does, however, indicate a belief on the part of at least one Commissioner of this agency that there is reason to explore possible alternatives to the onsite storage of the slag that has raised so many concerns on the part of New Jersey and others. And, presumably, the NRC Staff will conduct such an exploration in the technical review associated with this decommissioning

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<sup>30</sup>Letter from Jeffery S. Merrifield to Eric E. Jackson (Feb. 22, 2007), ADAMS Accession No. ML070530666. The text of the letter was provided by the Office of the NRC Secretary to all those on the service list for the proceeding including this Board.

<sup>31</sup>*Id.* at 2.

case, including its activities in discharging its obligation under the National Environmental Policy Act. Thus, there is at least a considerable measure of current uncertainty as to whether, at the end of the day, the decommissioning of the Licensee's site will take the form that is contemplated by the DP now in hand.<sup>32</sup>

In short, all things considered, it seems to make good sense to follow here the course that was adopted in the *Army* proceeding. In addition to the withholding of action on the remainder of New Jersey's contentions, all further action in the proceeding would be deferred to await the Staff's completion of its safety and environmental review. (The deferral would embrace all obligations imposed by the Rules of Practice upon the grant of a hearing request such as that of New Jersey here). Once the Staff had released the SER and EIS reflecting the results of that review, an order would issue providing New Jersey a reasonable opportunity to withdraw, to amend, or to supplement its existing contentions based upon the disclosures in those documents and in conformity with the provisions of the Rules of Practice concerned with the submission of new contentions. Following a ruling on all remaining contentions, the proceeding would move forward.

On this score, based upon the filings to date, a few words of caution appear appropriate with regard to any future contentions and the responses thereto. First, contrary to New Jersey's apparent belief (*see* pp. 353-54, *supra*), it has long been the rule that Commission regulations are not open to challenge in NRC adjudicatory proceedings. *See* 10 C.F.R. § 2.335(a); *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 & n.33, *aff'd in part on other grounds*, CLI-74-32, 8 AEC 217 (1974).

Second, New Jersey's reliance in several of its contentions upon the Low-Level Radioactive Waste Policy Act of 1985 (LLRWPA), 42 U.S.C. §§ 2021b *et seq.*, is misplaced. That Act does not broadly require, as New Jersey would have

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<sup>32</sup>The NRC Staff recently published a notice in the *Federal Register* to the effect that it has under consideration a decommissioning plan submitted by the Whittaker Corporation, a source material licensee, for its site in Pennsylvania. 72 Fed. Reg. 13,310 (Mar. 21, 2007). According to the notice, that licensee's operations on the site in the extraction of rare earth metals had resulted in the accumulation of "slag by products containing thorium and uranium." *Id.* at 13,311. The submitted DP calls for the release of the entire site for unrestricted use following "the excavation of the waste slag, [the] processing of the excavated material in order to separate the radioactive material from the soil, and [the] shipping [of] the radioactive material to a licensed disposal site." *Ibid.*

We do not know whether such an option might be available with regard to the Newfield slag of concern in this proceeding. It could well be that, because of composition differences or for some other reason, it might not be feasible. We refer to the Whittaker proposal only as further evidence that there well might be more than one way of dealing with a particular accumulation of radioactive wastes so as to assure the public health and safety and the protection of the environment. In the course of its technical review of any decommissioning plan associated with such waste, the Staff necessarily will be examining any and all feasible alternatives that might serve better the achievement of those objectives.

it, “the permanent isolation of low-level radioactive waste.” Insofar as here relevant, it states simply that “[e]ach State shall be responsible for providing, either by itself or in cooperation with other States, for the *disposal* of — (A) low-level radioactive waste generated within the State.” 42 U.S.C. § 2021c(a)(1) (emphasis added). “Disposal” is defined generally by the Act as meaning the “permanent isolation of low-level radioactive waste pursuant to the requirements established by the Nuclear Regulatory Commission under applicable laws.” 42 U.S.C. § 2021b(7). As directed by the Act, the NRC has set forth regulatory requirements in 10 C.F.R. Part 61 that implement the LLRWPA’s mandate and further define terms contained in the Act. Although New Jersey acknowledges Part 61’s implementing regulations, it ignores the Commission’s clear statement in that part limiting regulation to waste “received from other persons.” 10 C.F.R. § 61.1(a). There is no question that this Licensee does not intend to become a facility for the permanent isolation of wastes received from other persons.

For its part, a substantial portion of the Licensee’s response to New Jersey’s contentions is not addressed to whether the contentions meet the admissibility standards set forth in 10 C.F.R. § 2.309(f)(1) but, rather, seeks to challenge them as lacking merit. Given that Licensee’s counsel have long been involved in NRC adjudicatory proceedings, they should be fully aware that such claims must await either motions for summary disposition under 10 C.F.R. § 2.1205 or an evidentiary hearing.<sup>33</sup> We trust that this fact will be given recognition in any future Licensee filings directed to contention admissibility.

**D.** We perceive no reason why a deferral of the consideration of the balance of New Jersey’s contentions might prejudice the legitimate interests of New Jersey, the Licensee, or the Staff as parties going forward in this proceeding. Indeed, it appears to us that it should serve to further those interests, given the bearing that the fruits of the technical review indisputably might have on the issues to be litigated at an evidentiary hearing. Nonetheless, it is possible that we have overlooked some consideration that, in view of one or more of those parties, might cast doubt upon the acceptability of the course we propose to follow. Accordingly, the deferral that we are now ordering will be subject to the filing of a timely motion for reconsideration in accord with 10 C.F.R. § 2.323(e).

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For the foregoing reasons, (1) the hearing request of the New Jersey Department of Environmental Protection is *granted*; and (2) all other hearing requests are

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<sup>33</sup> Indeed, if anything, addressing the merits in an opposition to a hearing request can be counter-productive in that it serves to reinforce the requestor’s insistence that a genuine dispute exists with respect to the substance of the contention in issue.

*denied.* Notwithstanding the denial of their requests, in accordance with the provisions of 10 C.F.R. § 2.315(c), upon notifying the Board, Gloucester and Cumberland Counties and the Borough of Newfield may, if so inclined, participate in any further proceedings in this matter through a designated representative.

Moreover, subject to reconsideration at the behest of New Jersey, the Licensee and/or the NRC Staff, all additional proceedings (including but not limited to the submission of the hearing file, 10 C.F.R. § 2.1203, and mandatory disclosures, 10 C.F.R. § 2.336) are hereby *deferred* pending the completion of the Staff's safety and environmental review and further order of this Board.

Finally, as to those individuals and entities whose hearing requests have been denied, in accordance with 10 C.F.R. § 2.311(a), any appeal to the Commission must be taken within 10 days after service of this Memorandum and Order. In accordance with that same provision, the Licensee is entitled to appeal the grant of the New Jersey Hearing Request within a like time period.

It is so ORDERED

THE ATOMIC SAFETY AND  
LICENSING BOARD\*

Alan S. Rosenthal, Chairman  
ADMINISTRATIVE JUDGE

Dr. Richard E. Wardwell  
ADMINISTRATIVE JUDGE

Dr. William H. Reed  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
March 28, 2007

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\*Copies of this Memorandum and Order were sent this date by Internet electronic mail transmission to counsel or other representative for (1) the Licensee, (2) the NRC Staff, and (3) each hearing requestor that has provided for e-mail service.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS**

**Jack R. Strosnider**, Director

**In the Matter of**

**Docket Nos. 50-255  
72-7  
(License No. DPR-20)**

**NUCLEAR MANAGEMENT  
COMPANY, LLC  
(Palisades Nuclear Plant)**

**March 20, 2007**

On April 4, 2006, the Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC) take enforcement action against the Licensee for the Palisades Nuclear Plant, Nuclear Management Company, LLC (NMC), by condemning and stopping the use of the two independent spent fuel storage installation (ISFSI) concrete pads holding dry spent fuel storage casks on the plant site. The Petitioners stated that the concrete cask storage pads do not conform with NRC regulations for earthquake stability, and therefore pose a hazard in case of an earthquake.

The final Director's Decision on this petition was issued on March 20, 2007. The first two issues the petitioners raised, concerning the stability of the older ISFSI pad (constructed in 1992) and the potential for amplification of earthquakes on the newer pad, (constructed in 2003), were not accepted for review under 10 C.F.R. § 2.206, because the NRC Staff had already evaluated and resolved those issues. As discussed in the final Director's Decision, the sole issue NRC accepted for review concerned the adequacy of the Licensee's slope stability analysis of the newer ISFSI pad. The Licensee documented its revised slope stability analysis for the newer pad in October 2006. The NRC Staff reviewed the revised analysis and determined that the Licensee has performed written evaluations that establish that the newer cask storage pad at the Palisades ISFSI has been designed to adequately support the static and dynamic loads of the stored casks, considering potential effects of earthquakes, in compliance with applicable regulatory requirements.

Therefore, the Staff found that the Petitioners' concerns have been adequately



addressed, and the requested action, to condemn and stop the use of the two ISFSI concrete pads holding dry spent fuel storage casks at the Palisades site, was denied.

## **DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

### **I. INTRODUCTION**

By letter dated April 4, 2006, Mr. Terry J. Lodge, on behalf of five organizations and thirty individuals (the Petitioners), filed a petition pursuant to Title 10 of the *Code of Federal Regulations* (10 C.F.R.), section 2.206, with the U.S. Nuclear Regulatory Commission (NRC or the Commission). The Petitioners requested that NRC take enforcement action against the Licensee for the Palisades Nuclear Plant, Nuclear Management Company, LLC (NMC), by condemning and stopping the use of the two independent spent fuel storage installation (ISFSI) concrete pads holding dry spent fuel storage casks on the plant site. As the basis for the request, the Petitioners stated that the concrete cask storage pads do not conform with NRC regulations for earthquake stability, specifically 10 C.F.R. § 72.212(b)(2)(i)(B) and (b)(3), and, therefore, pose a hazard in case of an earthquake.

Representatives for the Petitioners participated in a telephone conference call with NRC's Petition Review Board (PRB), on April 26, 2006, to discuss the petition. The teleconference was transcribed and the transcription was treated as a supplement to the petition. In the conference call, the Petitioners requested additional time to provide supplemental information. The PRB agreed and asked the Petitioners to submit any such information within 1 week of receiving a transcript of the conference call. A written transcript of the call was sent to the Petitioners on May 3, 2006. The Petitioners did not submit any supplemental information subsequent to the receipt of the transcript.

In a letter dated June 27, 2006, NRC accepted the petition, in part, for review under 10 C.F.R. § 2.206, specifically with respect to the slope stability analysis of the concrete pad constructed in 2003. That issue was already under NRC review at the time the Petition was submitted, since NRC had identified it as an unresolved item in NRC Inspection Report 07200007/2004-002, dated September 3, 2004, concerning a dry-cask storage inspection at the Palisades site conducted in August 2004. The other issues the Petitioners raised, concerning the stability of the older concrete pad constructed in 1992, and the potential for amplification of earthquakes on the newer pad, were not accepted for review under 10 C.F.R. § 2.206, because the NRC Staff had already evaluated and resolved those issues. The Staff's review of the older pad is documented in the "Palisades Plant —

NRC Final Safety Assessment of ISFSI Support Pad,” dated September 20, 1994. In that assessment, the Staff had concluded that the location of the storage pad at the Palisades site was acceptable to support the concrete storage casks against all effects of the design basis earthquake for the site. The Staff resolution of potential amplification effects from seismic events on the newer pad was documented in NRC Inspection Report 05000255/2006002, dated May 11, 2006. In that inspection report, the Staff concluded that the potential soil–structure interaction and soil liquefaction due to earthquakes were correctly factored into the Licensee’s seismic analysis of the newer pad, and that the Licensee’s results met the design limits for the storage cask system.

In its June 27, 2006, letter, NRC also informed the Petitioners that their request for immediate action to condemn and stop the use of the two ISFSI concrete pads at the Palisades site was denied because continued storage of spent fuel in dry casks on the existing concrete pads, while the issues raised by the petition were evaluated, would not pose an undue risk to public health and safety.

Copies of the petition, transcript, and acknowledgment letter are available for inspection at the Commission’s Public Document Room (PDR) at One White Flint North, Public File Area O-1F21, 11555 Rockville Pike (first floor), Rockville, Maryland, and from NRC’s Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, under ADAMS Accession Nos. ML060960061, ML061230089, and ML061790450, respectively. The NRC safety assessment, dated September 20, 1994, and the May 2006 NRC Inspection Report can be found at ADAMS Accession Nos. ML060480227 and ML061350371, respectively. Persons who do not have access to ADAMS or who have problems in accessing the documents in ADAMS should contact the NRC PDR reference staff, by telephone, at 1-800-397-4209, or 301-415-4737, or by e-mail, to [pdr@nrc.gov](mailto:pdr@nrc.gov).

## II. DISCUSSION

Regarding the issue the Staff accepted for review under 10 C.F.R. § 2.206, the Petitioners have asserted that the newer (2003) ISFSI concrete pad at the Palisades site does not comply with the requirements of 10 C.F.R. § 72.212(b)(2)(i)(B) and 72.212(b)(3). These regulations require that a general licensee wishing to use an NRC-approved dry-cask storage system at its site must perform written evaluations before such use, establishing that cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks, considering both potential amplification of earthquakes through soil–structure interaction, and soil liquefaction potential or other soil instability from vibratory ground motion. In addition, the general licensee must review the Safety Analysis

Report referenced in the Certificate of Compliance and the related NRC Safety Evaluation Report before use, to determine whether the reactor site parameters, including analyses of earthquake intensity and tornado missiles, are enveloped by the cask design bases considered in these reports. In 2004, NRC conducted an inspection of spent fuel storage activities at Palisades and reviewed the Licensee's written evaluations, as documented in NRC Inspection Report 07200007/2004-002, dated September 3, 2004 (ADAMS Accession No. ML042510075). In that inspection report, NRC concluded that, in general, the Licensee's written evaluations of the cask system were adequate to demonstrate compliance with the requirements of 10 C.F.R. § 72.212(b). However, two unresolved items requiring further NRC evaluation were identified: (1) the potential amplification effects of seismic events on the new ISFSI pad; and (2) the slope/subsurface stability analysis. The potential amplification effects of seismic events on the newer pad have since been reviewed and resolved, as documented in NRC Inspection Report 05000255/2006002. The NRC Staff has recently completed its review of the Licensee's revised slope stability analysis for the newer pad and resolved the issue, as discussed below.

On October 19, 2006, NMC completed a revised slope stability analysis for the newer ISFSI pad [NMC Calculation (Doc) No: EA-EC7408-02, Revision 0, "Re-evaluation of Slope Stability under ISFSI Pad for Revised Load Due to 24PTH System," ADAMS Accession No. ML063260200]. NMC performed the reevaluation to address NRC questions associated with the unresolved inspection item, and to confirm the stability of the newer pad for the possible use of a cask design heavier than that currently in service. The NRC Staff has reviewed the licensee's new evaluation, and concludes the following:

1. The soil properties the Licensee determined from three samples taken in the vicinity of the newer ISFSI storage pad were adequate for use in the design of the pad. The short-term effects of rain and snowfall on the critical soil parameters would be insignificant, because a small change in moisture content would result in only a small change in total density, which would not affect the overall stability of the ISFSI pad.
2. The Licensee's revised evaluation appropriately considered the weight of the as-built pad, the weight of the heavier cask system, and the in-situ soil properties, in response to an earthquake. NRC guidance, and government and commercial standards for the design of foundations of similar structures indicate that a minimum acceptable factor of safety of 1.15 is appropriate when considering transient loadings such as a design basis seismic event. NMC's revised evaluation concluded that this design criterion is met for all areas and soils beneath and immediately around the pad. The NRC Staff has reviewed this analysis and concludes that NMC has satisfactorily demonstrated that the as-built pad has an adequate factor of safety of a

minimum of 1.15 against the postulated sliding soil-mass loads resulting from an earthquake.

3. The NRC Staff has determined that the analysis, results, and conclusions presented in the new NMC evaluation satisfy the design requirements for the newer pad and confirm that a factor of safety of 1.15 will exist to provide adequate margin against the effects of sliding soil slopes. The Staff concludes that the slope stability analysis for the newer ISFSI pad is adequate to support the placement of existing casks and additional casks of heavier design, as analyzed by NMC in the referenced evaluation.

Based on this review, the NRC Staff has closed the last unresolved item from the August 2004 NRC dry-cask storage inspection at Palisades, as documented in NRC Inspection Report 05000255/2006013, dated January 24, 2007 (ADAMS Accession No. ML070240635).

### **III. CONCLUSION**

The NRC Staff has reviewed the basis for the Petitioners' requested actions. Based on the foregoing discussion, the Staff concludes that the Petitioners' concerns about the stability of the newer ISFSI pad during an earthquake have been adequately resolved such that no further Licensee action is needed. NMC has performed written evaluations that establish that the newer cask storage pad at the Palisades ISFSI has been designed to adequately support the static and dynamic loads of the stored casks, considering potential effects of earthquakes, in compliance with 10 C.F.R. § 72.212(b)(2)(i)(B) and (b)(3). The Staff further concludes that the Petitioners' concerns have been adequately addressed by the Licensee's revised slope stability evaluation. Therefore, the requested action, to condemn and stop the use of the two ISFSI concrete pads holding dry spent fuel storage casks at the Palisades site, is denied.

As provided in 10 C.F.R. § 2.206(c), a copy of this Director's Decision will be filed with the Secretary of the Commission, for the Commission to review. As provided for by this regulation, this Decision will constitute the final action of the

Commission 25 days after the date of the Decision, unless the Commission, on its own motion, institutes a review of this Decision within that time.

FOR THE NUCLEAR REGULATORY  
COMMISSION

Jack R. Strosnider, Director  
Office of Nuclear Material Safety  
and Safeguards

Dated at Rockville, Maryland,  
this 20th day of March 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-271-LR**

**ENTERGY NUCLEAR VERMONT  
YANKEE, LLC, and ENTERGY  
NUCLEAR OPERATIONS, INC.  
(Vermont Yankee Nuclear Power  
Station)**

**April 11, 2007**

**TECHNICAL ISSUES DISCUSSED: HEAT SHOCK; EFFLUENT  
CLEAN WATER ACT: WEIGHT TO BE ACCORDED STATE  
ENVIRONMENTAL REVIEW**

“Heat shock” falls within the scope of the Clean Water Act in the following way. Section 402(b) of that statute authorizes the Environmental Protection Agency to approve state programs for the issuance of National Pollutant Discharge Elimination System [“NPDES”] permits. 33 U.S.C. § 1342(b). The permits Vermont issues under its NPDES program impose “effluent limitations and other requirements on facilities that discharge pollutants into the waters of the United States.” For purposes of NPDES permits, “effluent” is defined as “[l]iquid waste that is discharged into a river, lake, or other body of water.” *Black’s Law Dictionary* (2d ed. 2001). *See also* Clean Water Act § 502(11), 33 U.S.C. § 1362(11). Congress intended the word “effluent” to include heat. 33 U.S.C. § 1326. Hence, “heat shock” falls within the parameters of the NPDES provisions of the Clean Water Act’s section 402(b).

**CLEAN WATER ACT: WEIGHT TO BE ACCORDED STATE ENVIRONMENTAL REVIEW**

Pursuant to section 316(a) of the Clean Water Act, NPDES permits may address thermal discharges into bodies of water. 33 U.S.C. § 1326(a). Section 511(c)(2) of the Act precludes us from either second-guessing the conclusions in NPDES permits or imposing our own effluent limitations — thermal or otherwise. 33 U.S.C. § 1371(c)(2). Indeed, the Clean Water Act’s legislative history indicates that Congress, when enacting section 511(c)(2), *specifically* intended to deprive the NRC’s predecessor agency (the Atomic Energy Commission) of such authority. S. Rep. No. 92-1236, 92d Cong., 2d Sess. (1972) (Conference Report on S. 2770), *Legislative History* at 198.

Section 51.53(c)(3)(ii)(B) of our regulations on license renewal implements the statutory provisions cited above by providing, in relevant part, that

If the applicant’s plant utilizes [a] once-through cooling . . . system[ ], the applicant shall provide a copy of . . . [a Clean Water Act section] . . . 316a variance . . . or equivalent State permit[ ] and supporting documentation. If the applicant can not provide these documents, it shall assess the impact of the proposed action on fish and shellfish resources resulting from heat shock . . . .

10 C.F.R. § 51.53(c)(3)(ii)(B). Our regulations also classify the effects of heat shock on the protection and propagation of fish and shellfish as a so-called “Category 2” environmental issue. This means that the NRC cannot treat heat shock generically but must instead address it on a case-by-case basis. *See* 10 C.F.R. Part 51, Subpart A, Appendix B.

**CLEAN WATER ACT: WEIGHT TO BE ACCORDED STATE ENVIRONMENTAL REVIEW**

The Commission can legitimately rely on a state permit which expires only 5 years into the 20-year renewal period.

**RULES OF PRACTICE: COLLATERAL ATTACK ON REGULATIONS**

The Commission’s rules prohibit collateral attacks on our regulations unless the agency grants a waiver of the prohibition. 10 C.F.R. § 2.335(a). *See, e.g., AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 133 (2007).

**CLEAN WATER ACT: SECTION 316(a) VARIANCE**

Section 51.53(c)(3)(ii)(B) of the Clean Water Act requires that an applicant submit the EPA section 316(a) variance or the equivalent state document. The regulation does not limit this requirement to those situations where the state permit expires within a period greater than 5 years. Nor could it, because section 402(b)(1)(B) of the Clean Water Act expressly prohibits any state from issuing an NPDES permit for a period longer than 5 years. 33 U.S.C. § 1342(b)(1)(B).

**CLEAN WATER ACT: SECTION 316(a) VARIANCE**

A licensee may satisfy the requirements of 10 C.F.R. § 51.53(c)(3)(ii)(B) in either of two ways: to evaluate, in its Environmental Report, the impacts on aquatic resources from entrainment, impingement, and heat shock, or to provide a copy of the current section 316(a) permit (issued by either the EPA or the state where the plant is located).

**CLEAN WATER ACT: SECTION 316(a) VARIANCE; WEIGHT TO BE ACCORDED STATE ENVIRONMENTAL REVIEW**

Congress has severely limited our scope of inquiry into section 316(a) determinations. All we may do is examine whether the EPA or the state agency considered its permit to be a section 316(a) determination. If the answer is “yes,” our inquiry ends.

**CLEAN WATER ACT: WEIGHT TO BE ACCORDED STATE ENVIRONMENTAL REVIEW**

Section 511(c)(2) of the Clean Water Act does not give us the option of looking behind the agency’s permit to make an independent determination as to whether it qualifies as a *bona fide* section 316(a) determination. That section expressly prohibits us from “review[ing] any effluent limitation or other requirement established pursuant to” the Clean Water Act.

**APPEAL BOARD: PRECEDENTIAL VALUE OF DECISIONS**

The Atomic Safety and Licensing Appeal Board was disbanded in 1991, but its decisions still carry precedential value. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-99-24, 50 NRC 219, 222 n.3 (1999).



**CLEAN WATER ACT: WEIGHT TO BE ACCORDED STATE ENVIRONMENTAL REVIEW**

We and our Appeal Board have repeatedly interpreted section 511(c)(2) as requiring us to take a section 316(a) determination at face value and as prohibiting us from undertaking any independent analysis of the thermal impact that a state environmental agency has already assessed.

**CLEAN WATER ACT: WEIGHT TO BE ACCORDED STATE ENVIRONMENTAL REVIEW**

Section 51.53(c)(3)(ii)(B) rests on the presumption that we need not — indeed *cannot* — review and judge environmental permits issued under the Clean Water Act by the EPA or an authorized state agency. Given this statutory limitation, it is questionable whether we have the authority to consider even the environmental impacts of such permits. *See generally Department of Transportation v. Public Citizen*, 541 U.S. 752, 754 (2004).

**CLEAN WATER ACT: WEIGHT TO BE ACCORDED STATE ENVIRONMENTAL REVIEW**

As we stated in *Seabrook* (another case involving both section 511(c)(2) and a once-through cooling system), the permitting agency “determines what cooling system a nuclear power facility may use[,] and NRC factors the impacts resulting from use of that system into the NEPA cost-benefit analysis.” *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 26 (1978). And our instruction in *Seabrook* to Licensing and Appeal Boards is likewise equally applicable today: “In future cases where EPA [or, as here, a state permitting agency] has made the necessary factual findings for approval of a specific once-through cooling system for a facility after full administrative proceedings, we expect our adjudicatory boards to do as we have done today,” i.e., defer to the agency that issued the section 316(a) permit. *Id.* at 28 n.42.

**NEPA: ENVIRONMENTAL REPORT; HEARING**

Only Category-2 environmental issues must be addressed in an Environmental Report (10 C.F.R. § 51.53(c)(3)(ii)) and may therefore be litigated at an adjudicatory hearing. *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-07-3, 65 NRC 13, 20 (2007); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 19 (2001).

## MEMORANDUM AND ORDER

This adjudication concerns the application of Licensees Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc. (collectively “Entergy”) to renew their operating license of the Vermont Yankee Nuclear Power Station for 20 additional years.<sup>1</sup> The New England Coalition challenged Entergy’s application on numerous grounds. One of the Coalition’s arguments is that Entergy’s Environmental Report<sup>2</sup> (which is a part of the application) inadequately addressed the impacts of increased thermal discharges into the Connecticut River during the license renewal period.<sup>3</sup> In a split decision last fall (LBP-06-20), the Licensing Board admitted for litigation this argument, which the Coalition designates “Contention 1.”<sup>4</sup> Entergy sought interlocutory review of this ruling.<sup>5</sup> In our own split decision dated January 11, 2007, we denied Entergy’s petition but nevertheless took *sua sponte* review of the Board’s admission of Contention 1. We also directed Entergy, the Coalition and the NRC Staff to file briefs on the admissibility issue.<sup>6</sup> In those briefs, Entergy and the Staff urge us to reverse the Board’s ruling, while the Coalition asks us to affirm it. We believe that the Staff and Entergy have the better of the argument, and we therefore reverse LBP-06-20 insofar as it admitted Contention 1 for litigation.

### I. BACKGROUND

#### A. The Vermont Yankee Plant and Its Water Discharge System

The Vermont Yankee plant is located on the Connecticut River in Vermont.

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<sup>1</sup>ADAMS Accession No. ML060300085. (ADAMS is the acronym for the NRC’s Agencywide Documents Access and Management System — a computerized storage and retrieval system for NRC documents, publicly accessible through the NRC’s Web page at <http://www.nrc.gov>.) Entergy seeks an extension of the facility’s operating license until March 21, 2032.

<sup>2</sup>ADAMS Accession No. ML060300086.

<sup>3</sup>“Petition for Leave To Intervene, Request for Hearing, and Contentions” (May 26, 2006) (“Petition To Intervene”).

<sup>4</sup>64 NRC 131 (2006), *reconsidered denied*, unpublished decision (Oct. 30, 2006), ADAMS Accession No. ML063030484.

The Board split 2-1 on the admissibility of Contention 1. Judges Karlin and Elleman joined in the majority decision admitting the contention (64 NRC at 175-82). Judge Wardwell filed a dissenting opinion (*id.* at 211-18). The Board was unanimous on all other contention-admissibility rulings, and those rulings are not before us today.

<sup>5</sup>“Entergy’s Petition for Interlocutory Review of LBP-06-20 Admitting New England Coalition’s Contention 1” (Oct. 10, 2006) (“Petition for Review”).

<sup>6</sup>CLI-07-1, 65 NRC 1 (2007). Commissioners Lyons and Jaczko dissented (65 NRC at 6-8), and Commissioners Merrifield and McGaffigan concurred (*id.* at 8-9).

All of the plant's thermal output that does not actually produce electricity is removed through a "once through" circulating water system. Upon leaving the circulating water system, this water is either discharged into the atmosphere (through mechanical draft cooling towers) or into the Connecticut River. The State of Vermont determines the temperature at which the plant is permitted to discharge water into the river.<sup>7</sup>

## B. Statutory and Regulatory Context for Contention 1

In its Petition To Intervene, the Coalition asks us to take a "hard look," as required under the National Environmental Policy Act ("NEPA"),<sup>8</sup> at the potential environmental impacts of the license renewal.<sup>9</sup> One of those potential impacts, according to the Coalition, is the thermal effect of a 1°F increase in temperature on the biota (in this case, the fish and shellfish) of the Connecticut River during the proposed 20-year license extension period. The only specific kind of thermal effect the Coalition raises is "heat shock."<sup>10</sup> Judge Wardwell, the dissenting Judge on the Board, defines the term this way: "Heat shock occurs when aquatic biota that have been acclimated to cooler water are exposed to sudden temperature increases when artificial heating commences."<sup>11</sup> In addressing this "heat shock" issue, we must consider not only NEPA but also the provisions of the Federal Water Pollution Control Act of 1972 (commonly known as the "Clean Water Act").<sup>12</sup>

"Heat shock" falls within the scope of the Clean Water Act in the following way. Section 402(b) of that statute authorizes the Environmental Protection Agency to approve state programs for the issuance of National Pollutant Discharge Elimination System ["NPDES"] permits.<sup>13</sup> EPA has approved Vermont's NPDES

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<sup>7</sup> *Entergy Nuclear/Vermont Yankee Thermal Discharge Permit Amendment* (State of Vt. Envtl. Court, Docket No. 89-4-06 Vtec, Jan. 9, 2007) (Appeal of Connecticut River Watershed Council et al.) ("2007 Vermont Order"), available at <http://www.vermontjudiciary.org/tcdecisions/06-089c.Entergy.mots.pdf>, appended to "Appellee New England Coalition's Brief" at 3 (Jan. 29, 2007) ("Coalition Initial Brief") as Exhibit 3. See also "Fact Sheet" at 2 (Mar. 30, 2006) ("March 30th Fact Sheet"), appended to Agency of Natural Resources, "Amended Discharge Permit" (March 30, 2006) ("March 30th Permit"), in turn attached to Entergy's Answer to New England Coalition's Petition for Leave To Intervene, Request for Hearing and Contentions" (June 22, 2006) ("Entergy's June 22d Answer").

<sup>8</sup> 42 U.S.C. §§ 4321 *et seq.*; *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976); *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 838 (1972).

<sup>9</sup> Petition To Intervene at 12.

<sup>10</sup> See, e.g., Coalition Initial Brief at 3.

<sup>11</sup> LBP-06-20, 64 NRC at 212 n.5.

<sup>12</sup> 33 U.S.C. §§ 1251 *et seq.*

<sup>13</sup> 33 U.S.C. § 1342(b).

program.<sup>14</sup> The permits Vermont issues under this program impose “effluent limitations and other requirements on facilities that discharge pollutants into the waters of the United States.”<sup>15</sup> For purposes of NPDES permits, “effluent” is defined as “[l]iquid waste that is discharged into a river, lake, or other body of water.”<sup>16</sup> Congress intended the word “effluent” to include heat.<sup>17</sup> Hence, “heat shock” falls within the parameters of the NPDES provisions of the Clean Water Act’s section 402(b).

Pursuant to section 316(a) of that same Act, NPDES permits may (and the instant Vermont permit does) address thermal discharges into bodies of water.<sup>18</sup> Section 511(c)(2) of the Act precludes us from either second-guessing the conclusions in NPDES permits or imposing our own effluent limitations — thermal or otherwise.<sup>19</sup> Indeed, the Clean Water Act’s legislative history indicates that Congress, when enacting section 511(c)(2), *specifically* intended to deprive the NRC’s predecessor agency (the Atomic Energy Commission) of such authority.<sup>20</sup>

Finally, one of our regulations on license renewal implements the statutory provisions cited above by providing, in relevant part, that

If the applicant’s plant utilizes [a] once-through cooling . . . system[ ], the applicant shall provide a copy of . . . [a Clean Water Act section] . . . 316a variance . . . or equivalent State permit[ ] and supporting documentation. If the applicant can not

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<sup>14</sup> See 2007 Vermont Order at 12.

<sup>15</sup> LBP-06-20, 64 NRC at 175 n.54.

<sup>16</sup> *Black’s Law Dictionary* (2d ed. 2001). See also Clean Water Act § 502(11), 33 U.S.C. § 1362(11) (the definition of “effluent limitation” refers to “chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean”).

<sup>17</sup> 33 U.S.C. § 1326. See also *Society for the Protection of New Hampshire Forests v. Site Evaluation Committee*, 115 N.H. 163, 171, 337 A.2d 778, 785 (1975) (“To discharge heated water . . . into the Atlantic Ocean from the Seabrook facility, the Public Service Company needed . . . a[n NPDES] permit from the water supply and pollution control commission,” citing, *inter alia*, 33 U.S.C. §§ 1326, 1342); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 24-25 (1978); *Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702, 704 (1978); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-366, 5 NRC 39, 48, *aff’d*, CLI-77-8, 5 NRC 503, 508 (1977), *aff’d*, *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir.), *cert. denied*, 439 U.S. 1046 (1978).

<sup>18</sup> 33 U.S.C. § 1326(a), *incorporated by reference into* Clean Water Act § 301, 33 U.S.C. § 1311(a), *in turn incorporated by reference into* Clean Water Act § 402(b), 33 U.S.C. § 1342(b)(1)(A).

<sup>19</sup> 33 U.S.C. § 1371(c)(2). See also *Yellow Creek*, ALAB-515, 8 NRC at 712 (quoting Sen. Edmund Muskie as stating that “the effect of . . . [section 511(c)(2)] would be to require Federal licensing agencies to ‘accept as dispositive’ EPA’s determinations respecting the discharge of pollutants”).

<sup>20</sup> *Yellow Creek*, ALAB-515, 8 NRC at 712 n.47, quoting S. Rep. No. 92-1236, 92d Cong., 2d Sess. (1972) (Conference Report on S. 2770), *Legislative History* at 198. See generally *Seabrook*, CLI-78-1, 7 NRC at 26 (citing Sen. Howard Baker’s remarks regarding section 511(c)(2)).

provide these documents, it shall assess the impact of the proposed action on fish and shellfish resources resulting from heat shock . . . .<sup>21</sup>

Our regulations also classify the effects of heat shock on the protection and propagation of fish and shellfish as a so-called “Category 2” environmental issue. This means that the NRC cannot treat heat shock generically but must instead address it on a case-by-case basis.<sup>22</sup>

### C. Vermont Yankee’s State Permit Under the Clean Water Act

Entergy currently holds NPDES Permit 3-1199, issued by the State of Vermont’s Agency of Natural Resources (“the Agency”) pursuant to section 316(a) of the Clean Water Act. This permit was issued in July 2001 and was due to expire on March 31, 2006. Among other things, the permit specifies the thermal (temperature) limitations for Vermont Yankee’s effluent discharge into the Connecticut River. These limitations differ depending upon the time of year. Under Entergy’s currently effective permit, one limitation applies for the “winter season” of October 15 through the following May 15 of each year, and another for the “summer season” of May 16 through October 14.<sup>23</sup>

On February 20, 2003, Entergy asked the Agency both to renew the permit and to amend it to increase the thermal limitations by 1° for the summer season. On March 30, 2006, the Agency granted Entergy’s amendment request in part.<sup>24</sup> The Agency assessed the impacts of the higher effluent limits and concluded that the proposed 1° temperature increase would not compromise the protection and propagation of fish and shellfish from June 16 through October 14.<sup>25</sup> The Agency, however, postponed its decision on whether to allow the temperature increase for the period May 16 through June 15.

Entergy, the Coalition and others appealed various portions of the Agency’s ruling to the Vermont Environmental Court. That Court stayed the March 30th

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<sup>21</sup> 10 C.F.R. § 51.53(c)(3)(ii)(B).

<sup>22</sup> See 10 C.F.R. Part 51, Subpart A, Appendix B. In 1996, the Commission concluded that, for license renewal, certain environmental issues were amenable to generic consideration and therefore did not require case-specific analysis. 10 C.F.R. § 51.53(c)(3)(i); NUREG-1437, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants” (May 1996). We refer to those as “Category 1” issues. We classify all the rest as “Category 2” issues.

<sup>23</sup> See 2007 Vermont Court Order, slip op. at 2; March 30th Fact Sheet” at 2.

<sup>24</sup> To our knowledge, the Agency has not yet ruled on the renewal request.

<sup>25</sup> See 2007 Vermont Court Order, slip op. at 2-4, citing 2006 Permit Amendment, Part I, § 6(c), at 5.

Amendment,<sup>26</sup> and all appeals remain pending before the Court.<sup>27</sup> Although the pre-amendment version of the permit was scheduled to expire March 31, 2006, it remains in effect pursuant to Vermont's "timely renewal" statute.<sup>28</sup> That statute provides that the timely filing of an application to renew a state license tolls the license's expiration until the State's issuance of a final ruling on that application (or, if the State denies the application, until either the last day for seeking judicial review of the ruling or a date fixed by the reviewing court).<sup>29</sup> Because Entergy had filed a timely renewal application in September 2005,<sup>30</sup> its NPDES permit fell within the parameters of the "timely renewal" statute. Consequently, the Court's September 1st Stay Order and the timely renewal statute combine to keep the pre-March 30th version of the permit in effect until either April 1, 2007, or the issuance of a further order by that Court.<sup>31</sup>

#### **D. NRC License Renewal Proceeding**

In January 2006, Entergy filed an application to renew its NRC operating license for the Vermont Yankee facility. This application included the Environmental Report about which the Coalition complains. At the time, Entergy's request to amend its permit was still pending before the Agency. Entergy therefore included in its Environmental Report a description of the requested amendment and an assessment of the proposed license renewal's thermal impact on fish and shellfish.<sup>32</sup> It also attached a copy of the then-current (pre-March 30th) version of its NPDES permit, as required by 10 C.F.R. § 51.53(c)(3)(ii)(B).<sup>33</sup>

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<sup>26</sup> See *Entergy Nuclear/Vermont Yankee Thermal Discharge Permit Amendment* (State of Vt. Envtl. Court, Docket No. 89-4-06 Vtec, Sept. 1, 2006) (Appeal of Connecticut River Watershed Council *et al.*), slip op. at 4 ("Vermont Stay Order"), available at <http://www.vermontjudiciary.org/tcdecisions/06-089b.Entergy.sty2.pdf>, and attached to Entergy's Answer to New England Coalition's Motion To File Supplemental and New Authority (Sept. 8, 2006). The Vermont Stay Order amended an earlier Stay Order of the Environmental Court, dated Aug. 28, 2006.

<sup>27</sup> "NRC Staff Brief in Response to CLI-07-01" at 3 & n.7 (Jan. 29, 2007) ("Staff Initial Brief"), and cited authority.

<sup>28</sup> 3 Vt. Stat. Ann. § 814(b).

<sup>29</sup> Staff Initial Brief at 2 & n.3, citing 3 Vt. Stat. Ann. § 814(b).

<sup>30</sup> 2007 Vermont Court Order at 4 n.3.

<sup>31</sup> Vermont Stay Order, slip op. at 4. See also 2007 Vermont Court Order, slip op. at 4. The Environmental Court indicated that it would schedule a hearing in March 2007 to determine whether to continue the stay. Vermont Stay Order at 4.

<sup>32</sup> See particularly Environmental Report at 4-16 through 4-19, regarding heat shock.

<sup>33</sup> See Environmental Report, Attachment D. Entergy also submitted the Fact Sheet (as amended in 2003) which accompanied the pre-March 30th permit. Although the parties disagree as to whether Entergy in fact attached to its application the appropriate version of the permit and supporting documentation, the question has no bearing on today's decision.

On March 27, 2006, the Commission published a Notice of Opportunity for Hearing in the *Federal Register*.<sup>34</sup> In response, the Coalition filed a petition with us on May 26, 2006, seeking to intervene and requesting a hearing. The Coalition argued, among other things, that Entergy's Environmental Report has failed to assess the impacts of the increased thermal discharges into the Connecticut River, as allowed by the March 30th amendment, over the entire 20-year renewal period.<sup>35</sup> It asserted that Entergy's proposal to increase (or "uprate") the plant's original design capacity by 20% necessitates a review of the "cumulative environmental impact" from the resulting increase in thermal discharge.<sup>36</sup> The Coalition particularly directed the NRC's attention to the fact that the submitted NPDES Permit predated the approval of Vermont Yankee's uprate and therefore could not have taken it into consideration.<sup>37</sup>

Entergy responded that the state permit constituted a section 316(a) determination, that section 316(a) required no further analysis, that section 511(c) of the Clean Water Act precluded the Commission from reviewing Vermont's effluent limitation or imposing a different limitation, and that the Coalition had therefore failed to raise a material issue of law or fact.<sup>38</sup>

The NRC Staff, in its response, pointed out that Entergy had not yet filed its then-current (i.e., March 30th) permit as part of its Environmental Report. Based on this omission, the Staff asserted that Contention 1 should be admitted, but only insofar as it complained of the Environmental Report's failure to include the required assessment of the environmental impact of the 1° temperature increase during the 20-year renewal period.<sup>39</sup> Entergy later filed with the NRC's Office of the Secretary the March 30th version of its NPDES permit.<sup>40</sup> Entergy also

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<sup>34</sup> 71 Fed. Reg. 15,220.

<sup>35</sup> Petition To Intervene at 10-14.

<sup>36</sup> *Id.* at 11. See also Coalition Initial Brief at 2.

<sup>37</sup> See Petition To Intervene at 13 n.2; Coalition Initial Brief at 2. We observe that Entergy's request for a 1° increase in thermal limits was not dependent upon a positive outcome of its uprate request to the Vermont Public Service Board (or, presumably, to us). See "Responsiveness Summary for Draft Amended Discharge Permit No. 3-1199" at 16 ("March 30th Responsiveness Summary"), appended to March 30th Permit, attached to Entergy's June 22d Answer; Entergy's Reply to New England Coalition's Brief on Review of LBP-06-20, at 3 (Feb. 6, 2007) ("Entergy Reply Brief"). (The March 30th Responsiveness Summary, *supra*, is the Agency's response to public comments on its draft permit.)

<sup>38</sup> Entergy's June 22d Answer at 11-18.

<sup>39</sup> Staff Initial Brief at 4.

<sup>40</sup> See "Entergy's Brief on Review of LBP-06-20" at 6 (Jan. 29, 2007) ("Entergy Initial Brief"); Staff Initial Brief at 5; LBP-06-20, 64 NRC at 211 (Wardwell, J., dissenting).

The permit was, in fact, submitted twice — on June 22 and July 27, 2006. See note 68, *infra*. The Board, responding to a Coalition motion, struck the July 27, 2006 submittal on grounds that it was  
(Continued)

submitted the Agency's supporting documentation (the March 30th Fact Sheet and the March 30th Responsiveness Summary) containing the Agency's assessment of aquatic impacts of the permitted thermal effluent.<sup>41</sup>

#### **E. The Licensing Board Decision LBP-06-20**

In a majority decision, the Licensing Board admitted Contention 1 (and others not before us today). Judge Wardwell filed a dissenting opinion regarding the admission of Contention 1.

The majority admitted Contention 1 on the ground that it raised a material issue concerning the adequacy of the Environmental Report — specifically that the Environmental Report “contains an insufficient analysis of the thermal impacts in the Connecticut River and merely refers to an NPDES permit, which is under appeal, [is] of allegedly uncertain status, and does not cover the 20 years covered by the proposed license renewal.”<sup>42</sup> The majority rejected Entergy's argument that section 511(c)(2) of the Clean Water Act barred the contention outright.<sup>43</sup> Instead, the majority concluded that the Commission was barred merely “from reviewing or imposing effluent limitations, water quality certification requirements, or other [Clean Water Act] requirements,”<sup>44</sup> and that the Commission still had a duty under NEPA to examine the environmental impacts of the proposed license renewal, including those to water quality.<sup>45</sup>

Then, turning to the specifics of Contention 1, the majority acknowledged that the NPDES permit did address the increased thermal impact of the facility and that the permit would, if valid and effective, satisfy the first prong of 10 C.F.R. § 51.53(c)(3)(ii)(B).<sup>46</sup> But the majority concluded that the NPDES permit's “meaning and status” (i.e., validity) were unclear — given its mere 5-year duration, the uncertainty inherent in the pendency of its appeal, and the fact that the Vermont Environmental Court had stayed its effectiveness.<sup>47</sup> In the

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irrelevant, immaterial, and procedurally improper (being in the form of a “for your information” letter with attachments). Transcript of Hearing for Oral Argument at 61 (Aug. 1-2, 2006) (“Tr.”), available at ADAMS Accession No. ML062210038; unpublished Order (Striking Entergy's Letter to the Board and Attached Materials), dated Aug. 11, 2006, available at ADAMS Accession No. ML062230276.

<sup>41</sup> See Entergy Initial Brief at 5 & n.5.

<sup>42</sup> 64 NRC at 178, citing Coalition's Petition To Intervene at 11.

<sup>43</sup> *Id.* at 179.

<sup>44</sup> *Id.* at 180.

<sup>45</sup> *Id.* at 180-81.

<sup>46</sup> “If the applicant's plant utilizes [a] once-through cooling . . . system[ ], the applicant shall provide a copy of . . . [a Clean Water Act section] . . . 316a variance . . . or equivalent State permit[ ] and supporting documentation.”

<sup>47</sup> 64 NRC at 181, citing an earlier version of the Vermont Stay Order.



majority's view, this lack of clarity raised a factual question appropriate for litigation.

The majority further reasoned that, conversely, if the permit did *not* satisfy the first prong of section 51.53(c)(3)(ii)(B), then the Entergy application must, under the regulation's second prong, adequately assess the thermal impact on fish and shellfish.<sup>48</sup> And this, the majority concluded, was likewise a factual issue appropriate for litigation.<sup>49</sup> Either way, according to the majority, the issue whether the NPDES permit satisfies the requirements of section 51.53(c)(3)(ii)(B) must be admitted for adjudication.<sup>50</sup>

And finally, the majority concluded that Contention 1 encompasses the factual/legal question whether "Entergy satisf[ies] the requirements of section] 51.53(c)(3)(ii)(B) and Part 51 in general, and [whether the] NRC satisf[ies] its NEPA duties, by [Entergy] simply attaching a copy of an NPDES permit that will expire before the NRC license renewal even takes effect."<sup>51</sup>

The dissent, by contrast, concluded that Entergy had satisfied the requirements of section 51.53(c)(3)(ii)(B). The dissent reasoned that all the required environmental analysis for Category 2 issues was contained in the NPDES.<sup>52</sup> Also, the dissent disagreed with the majority regarding the significance of the permit's status. The dissent reasoned that, if the Vermont Environmental Court overturned the amended permit on appeal, the contention would be rendered moot.<sup>53</sup> The dissent further pointed out that the permit's 5-year term allowed for ongoing reassessment of the effects of the 1° temperature increase.<sup>54</sup> Finally, based on section 511(c)(2) of the Clean Water Act, the dissent concluded that the Commission is required to take at face value the evaluation of the Agency and is forbidden from engaging in independent analysis.<sup>55</sup>

#### **F. Entergy's Petition for Interlocutory Review of LBP-06-20**

On October 10, 2006, Entergy filed a timely petition for review of LBP-06-20. Entergy directs our attention to four issues:

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<sup>48</sup> *Id.* The second prong reads: "If the applicant can not provide [a section 316(a) permit and supporting documentation], it shall assess the impact of the proposed action on fish and shellfish resources resulting from heat shock . . . ."

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> *Id.* at 182.

<sup>52</sup> *Id.* at 213-14.

<sup>53</sup> *Id.* at 215-16.

<sup>54</sup> *Id.*

<sup>55</sup> *Id.* at 217.

(1) whether the NRC must independently assess aquatic impacts; (2) whether [section 51.53(c)(3)(ii)(B)] is applicable given the possibility that the NPDES permit amendment may be set aside on judicial review; (3) whether [that same section] and NEPA may be satisfied by an NPDES permit that is only issued for 5-year terms and therefore does not cover the same period as license renewal; and (4) whether there are thermal impacts other than heat shock that must be assessed.<sup>56</sup>

On January 11, 2007, we denied Entergy's petition but nonetheless took *sua sponte* review of the Board's admission of Contention 1.<sup>57</sup>

## II. DISCUSSION

### A. Status of the Section 316(a) Permit

We first consider the significance of the three elements of the section 316(a) permit's status, on which the majority decision relies — the permit's 5-year duration, its stayed effectiveness, and the pendency of its appeal.<sup>58</sup>

We do not share the majority's concern (based on a Coalition argument) that the Commission cannot legitimately rely on a state permit which expires only 5 years into the 20-year renewal period. The Coalition's argument to this effect constitutes a *de facto* collateral attack on the scope of section 51.53(c)(3)(ii)(B)'s requirement and thereby contravenes our rule prohibiting such attacks on our regulations unless the NRC grants a waiver of the prohibition.<sup>59</sup> Section 51.53(c)(3)(ii)(B) requires merely that an applicant submit the EPA section 316(a) variance or the equivalent state document. The regulation does not limit this requirement to those situations where the state permit expires within a period greater than 5 years. Nor could it, because section 402(b)(1)(B) of the Clean Water Act expressly prohibits any state from issuing an NPDES permit for a period longer than 5 years.<sup>60</sup>

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<sup>56</sup> Petition for Review at 10-11.

<sup>57</sup> CLI-07-1, 65 NRC 1.

<sup>58</sup> LBP-06-20, 64 NRC at 181. Although Entergy did not raise the "stayed effectiveness" issue in its Petition for Review, it nonetheless falls within our *sua sponte* review as part of the Board's ruling on Contention 1.

<sup>59</sup> 10 C.F.R. § 2.335(a). *See, e.g., AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 133 (2007). The Coalition sought no such waiver.

<sup>60</sup> 33 U.S.C. § 1342(b)(1)(B). State agencies may reexamine a permit and its conditions at any time, if they conclude that its terms are no longer valid. Final Rule: "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," 61 Fed. Reg. 28,467, 28,475 (June 5, 1996). *See also* March 30th Responsiveness Summary at 15 ("The Agency will continue to adjust the terms of the Applicant's permit as necessary, to address any new data regarding impacts to shad"), 16 ("the Agency . . . will be reviewing and adjusting Entergy's permit monitoring requirements as necessary during the permit renewal period(s)").

Next, we conclude that the Vermont Environmental Court's stay is irrelevant to the issue now before us. All the stay accomplishes is to reinstate, temporarily, the pre-March 30th version of the permit — an action that does not adversely affect the Coalition's interests (in fact, it favors them). The stay does *not*, as the Coalition would have us believe, render the March 31st permit “wholly superseded,” “without any effect,” and “a nullity.”<sup>61</sup> It merely places that permit in limbo pending the conclusion of the Court's deliberations on the merits of Entergy's thermal increase amendment application. The Coalition thus confuses a stayed permit with a vacated one.

And finally, under Commission precedent, the pendency of the appeal to the Vermont Environmental Court and any resulting “uncertainty” as to the permit's status are not relevant here. In *Seabrook*, we accepted as conclusive the EPA's determinations on aquatic impact, despite the fact that the EPA decision was under judicial review at the time.<sup>62</sup> Moreover, we see no “uncertainty” at all if the Vermont Environmental Court either revokes the permit or does not include the 1° increase when it renews the permit. Under either of those circumstances, the effluent levels would revert to their previous (pre-March 30th) values, rendering the Coalition's contention moot.<sup>63</sup>

If, on the other hand, the Court upholds the permit, then Contention 1 would be relevant *only if*, as a matter of law, any doubt exists as to whether Entergy submitted a section 316(a) permit and thereby satisfied the regulatory requirements of section 51.53(c)(3)(ii)(B). For the reasons discussed below, we conclude that no such doubt exists.

#### **B. Compliance with the Requirements of 10 C.F.R. § 51.53(c)(3)(ii)(B)**

We turn now to the real nub of this appeal — the question whether Entergy met the requirements of 10 C.F.R. § 51.53(c)(3)(ii)(B). A licensee may satisfy those requirements in either of two ways: to evaluate, in its Environmental Report, the impacts on aquatic resources from entrainment, impingement, and heat shock,<sup>64</sup>

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<sup>61</sup> Coalition Initial Brief at 29. *See also id.* at 2 (describing the Environmental Court's ruling as a finding that the permit was “defective”), 11 (same: “faulty”), 16 (same: “factually inadequate”), 23 (describing the Agency's permitting action as “hav[ing] no effect under Vermont law”); New England Coalition's Reply Brief at 1 (Feb. 5, 2007) (“Coalition Reply Brief”) (stating that the Environmental Court “annulled” the Agency's action), 2 (describing the amendment as “a legal nullity” and having been found to be “substantively defective”).

<sup>62</sup> *Seabrook*, CLI-78-1, 6 NRC at 27 n.41. *See also Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-17, 8 NRC 179, 181 (1978); *Seabrook*, CLI-77-8, 5 NRC at 521 n.20.

<sup>63</sup> *See* LBP-06-20, 64 NRC at 215 (Wardwell, J., dissenting); Entergy Initial Brief at 18-19.

<sup>64</sup> Of these three Category 2 issues, only heat shock is before us today. Entergy addressed heat shock in section 4.4 of its Environmental Report, at 4-16 through 4-19. ADAMS Accession No.

(Continued)

or to provide a copy of the current section 316(a) permit (issued by either the EPA or the state where the plant is located).<sup>65</sup> Entergy claims to have done both. The Coalition asserts that Entergy has done neither.<sup>66</sup> The Coalition's argument is based on two basic premises.

The first is that the amended permit and its supporting documents are not before the Commission in this adjudication: "Entergy did not attempt to incorporate the March 30, 2006 [Agency] action into the ER until July 28, 2006, and the [Board] struck that information from this proceeding's record."<sup>67</sup> The Coalition's argument that the Board struck these documents from the record is beside the point. Although the Board did strike Entergy's July 28th letter along with its attachments (including the permit and supporting documents),<sup>68</sup> Entergy had already filed these same documents in this adjudication a month earlier — as attachments to its June 22d Answer to the Coalition's Petition To Intervene. Thus, the Board's decision to strike the July 28th letter and its accompanying documents had no practical effect on this adjudication.<sup>69</sup>

The Coalition's second premise is that the March 30th version of the permit does not qualify as a valid section 316(a) determination.<sup>70</sup> According to the Coalition, an NPDES permit merely "requires compliance with water quality standards," while a section 316(a) determination is "a variance allowing deviation from [those] standards."<sup>71</sup> As discussed below, Congress has severely limited our scope of inquiry into section 316(a) determinations. All we may do is examine

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ML060300086. Entergy also submitted a revision to its Environmental Report on July 27, 2006, to re-address heat shock in light of the March 30th Permit and its supporting documentation. ADAMS Accession No. ML062130080.

<sup>65</sup> 10 C.F.R. § 51.53(c)(3)(ii)(B).

<sup>66</sup> Coalition Initial Brief at 5, 7-9, 27-28.

<sup>67</sup> *Id.* at 13. *See also id.* at 2, 9-10.

<sup>68</sup> On July 28, 2006, Entergy sent to the Board, for its information, the March 30th Permit and its supporting documentation, which Entergy had included as part of an amendment to its license renewal application. *See Vermont Yankee Nuclear Power Station License Renewal Application, Amendment 6, Appendix E, Attachment D, Revision 1* (submitted July 27, 2006), ADAMS Accession No. ML062130080, at 10-65. Entergy also submitted an amended Environmental Report. *See id.*, Amendment 6, Appendix E, § 4.4, Revision 1, ADAMS Accession No. ML062130080, at 3-7. Entergy had previously submitted each of these documents to the NRC Staff for its review outside the context of this adjudication.

<sup>69</sup> Nor did the Board's action adversely affect the "acceptability for docketing" of this same amendment to Entergy's license renewal application, which Entergy had submitted to the NRC Staff. This is because the Board lacks authority to prohibit the NRC Staff from docketing the amendment. *See generally Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 570 (2005) (observing that Licensing Boards lack the authority to supervise the NRC Staff in the performance of its nonadjudicatory duties).

<sup>70</sup> Coalition Initial Brief at 5.

<sup>71</sup> *Id.* at 5 n.2.

whether the EPA or the state agency considered its permit to be a section 316(a) determination. If the answer is ‘‘yes,’’ our inquiry ends. And so it does here.

The March 30th Fact Sheet which the Agency appended to the current NPDES permit leaves no doubt in our minds that the Agency considered its permit to be a section 316(a) determination:

[referring to] the Agency’s partial *approval* of the Applicant’s 2003 § 316(a) demonstration request.

the Agency . . . has made a *determination* that the proposed increase in thermal effluent limits will maintain a level of quality that fully supports all designated uses.

the Agency . . . has made a *finding* that the Applicant’s request meets the requirements for thermal discharges pursuant to § 316(a).

[t]he Agency has *concluded* that there will be no significant impact from the proposed discharge on the aquatic biota.<sup>72</sup>

The Coalition, seeking to avoid the controlling nature of the Agency’s language, directs our attention to the Fact Sheet’s two references to the NPDES permit being merely a ‘‘draft’’ or a ‘‘tentative decision.’’<sup>73</sup> We are unconvinced. These two descriptions are at odds with numerous statements in both the March 30th Fact Sheet and the March 30th Responsiveness Summary indicating the definitive nature of the Agency’s section 316(a) determination. The two cited descriptions perhaps reflect the Agency’s drafting of the Fact Sheet prior to its

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<sup>72</sup>March 30th Fact Sheet at 4, 5, 5, and 7, respectively. *See also* March 30th Responsiveness Summary, also attached by the Agency to the March 30th Permit (emphases added):

The Agency has *determined* that the 316(a) Demonstration and the material that the applicant has produced in support of the amendment request meet the applicable standards. [*id.* at 5]

the Agency . . . has *determined* that . . . the temperature change will not cause thermal shock [*id.* at 8]

The extensive biological monitoring in the Connecticut River and the Demonstration Study *demonstrate* that the existing and proposed discharge will assure the protection and propagation of a balanced indigenous biological community which supports the finding that the proposed discharge will not result in thermal shock. [*id.* at 8]

The agency has made a *determination* that the permittee *has demonstrated to the satisfaction of the Agency* that the previously permitted thermal effluent limitations during the period of June 16 through October 14 are more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made. [*id.* at 14]

Moreover, the EPA reviewed the draft permit and lodged no objections as to its issuance. Responsiveness Summary at 12.

<sup>73</sup>*See* March 30th Fact Sheet at 4, 5.

permit hearing.<sup>74</sup> Or perhaps they allude merely to the remaining unresolved issue of a proposed increase in the maximum allowed temperature for the period May 16 through June 15. In any event, the permitting documents, read as a whole, make clear that the Agency considers its determination valid and final.

Given the Agency's statements, we are required by law to reject both the Coalition's argument and the majority's ruling. As we explain below, section 511(c)(2) of the Clean Water Act does not give us the option of looking behind the agency's permit to make an independent determination as to whether it qualifies as a *bona fide* section 316(a) determination. That section expressly prohibits us from "review[ing] any effluent limitation or other requirement established pursuant to" the Clean Water Act.<sup>75</sup> And to state the obvious, the Agency's section 316(a) permit establishes limitations on effluent water temperature and therefore falls within this statutory provision.

We and our Appeal Board<sup>76</sup> have repeatedly interpreted section 511(c)(2) as requiring us to take a section 316(a) determination at face value and as prohibiting us from undertaking any independent analysis of the thermal impact that the Agency has already assessed.<sup>77</sup> For instance, the Appeal Board in 1979 addressed this general issue at some length in *H.B. Robinson*, and reached the same conclusion we do today. In that proceeding, the Appeal Board was reviewing a decision in which a Licensing Board had reluctantly deferred to a water quality decision of the EPA under the same statutory provisions at issue here — Clean Water Act §§ 316(a) and 511(c)(2). In a factual scenario quite similar to the one before us today, an intervenor in *H.B. Robinson* had argued that the Robinson nuclear plant, with its once-through cooling system, would increase

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<sup>74</sup> See Entergy Reply Brief at 8 & n.15.

<sup>75</sup> See also Final Rule: "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," 61 Fed. Reg. 28,467, 28,474 (June 5, 1996) ("pursuant to Section 511(c) of the Federal Water Pollution Control Act of 1972, the Commission cannot question or reexamine the effluent limitations or other requirements in permits issued by the relevant permitting authorities"); Proposed Rule: "Environmental Review for Renewal of Operating Licenses," 56 Fed. Reg. 47,016, 47,019 (Sept. 17, 1991): ("If an applicant to renew a license has appropriate . . . State permits, further NRC review of these potential impacts is not warranted").

<sup>76</sup> Although the Atomic Safety and Licensing Appeal Board was disbanded in 1991, its decisions still carry precedential value. See *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-99-24, 50 NRC 219, 222 n.3 (1999).

<sup>77</sup> Section 51.53(c)(3)(ii)(B) rests on the presumption that we need not — indeed *cannot* — review and judge environmental permits issued under the Clean Water Act by the EPA or an authorized state agency. Given this statutory limitation, it is questionable whether we have the authority to consider even the environmental impacts of such permits. See generally *Department of Transportation v. Public Citizen*, 541 U.S. 752, 754 (2004) (Because the Federal Motor Carrier Safety Administration "has no ability to prevent such cross-border operations, it lacks the power to act on whatever information might be contained in an EIS and could not act on whatever input the public could provide").

the temperature of nearby Lake Robinson and would thereby affect adversely the aquatic environment of that lake.<sup>78</sup>

The Licensing Board conducted an in-depth examination of the plant's thermal discharge and tentatively concluded that the intervenor was right. However, consistent with the Clean Water Act, the Licensing Board delayed issuing its partial initial decision addressing the merits of the intervenor's contention until the EPA had issued its own decision in a parallel case. The EPA ultimately concluded that "there was no need for additional cooling in order to meet [section 316(a)'s] statutory objective of 'assur[ing] the protection and propagation' of the Lake Robinson ecology."<sup>79</sup> (The EPA was playing the same role regarding the Robinson facility as the Agency plays here regarding the Vermont Yankee plant.) The Licensing Board subsequently issued a decision announcing that, although it disagreed with EPA on the thermal impact issue, it was nevertheless required by law to consider the EPA's decision as binding.<sup>80</sup>

Upholding the Licensing Board's decision, the Appeal Board held that the "NRC may not undercut EPA by undertaking its own analyses and reaching its own conclusions on water quality issues already decided by EPA."<sup>81</sup> The Appeal Board explained that Congress, in enacting the Clean Water Act, had removed the broad responsibility of multiple federal agencies for water quality standards and had placed that responsibility solely in the hands of the EPA<sup>82</sup> (the issue of state NPDES permits not being before the Appeal Board). From this, it concluded that the NRC was required "to take EPA's considered decisions at face value."<sup>83</sup> The Appeal Board also observed that NRC abstinence from setting water quality standards was fully consistent with congressional general intent that

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<sup>78</sup> *Carolina Power and Light Co.* (H.B. Robinson, Unit 2), ALAB-569, 10 NRC 557, 558 (1979).

<sup>79</sup> *Id.* at 559.

<sup>80</sup> *Id.*

<sup>81</sup> *Id.* at 561, quoting *Yellow Creek*, ALAB-515, 8 NRC at 715, and also citing *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Unit 3), ALAB-532, 9 NRC 279 (1979). See also *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d at 98 (the NRC "obeyed its FWPCA duties by deciding to accept as dispositive EPA determinations concerning one aspect of the overall environmental impact"); *Consolidated Edison Co. of New York* (Indian Point, Unit 2), CLI-81-7, 13 NRC 448, 449-50 (1981); *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), LBP-04-15, 60 NRC 81, 93 n.55, *aff'd*, CLI-04-36, 60 NRC 631, 638-39 (2004).

<sup>82</sup> ALAB-569, 10 NRC at 561, quoting *Yellow Creek*, ALAB-515, 8 NRC at 712. See also *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 70 (1977) ("For purposes of its NEPA evaluation, the NRC must accept the cooling system approved by EPA"), *aff'd*, CLI-78-1, *supra*; *Seabrook*, ALAB-366, 5 NRC at 49.

<sup>83</sup> ALAB-569, 10 NRC at 562.

the Clean Water Act “was to be implemented in a way that would avoid ‘needless duplication and unnecessary delays at all levels of government.’”<sup>84</sup>

The relationship between our responsibilities and those of the permitting agencies (i.e., EPA and the state agencies) has not changed since the Appeal Board issued its *H.B. Robinson* decision. As we stated in *Seabrook* (another case involving both section 511(c)(2) and a once-through cooling system), the permitting agency “determines what cooling system a nuclear power facility may use[,] and NRC factors the impacts resulting from use of that system into the NEPA cost-benefit analysis.”<sup>85</sup> And our instruction in *Seabrook* to Licensing and Appeal Boards is likewise equally applicable today: “In future cases where EPA [or, as here, a state permitting agency] has made the necessary factual findings for approval of a specific once-through cooling system for a facility after full administrative proceedings, we expect our adjudicatory boards to do as we have done today,” i.e., defer to the agency that issued the section 316(a) permit.<sup>86</sup>

The majority’s position, therefore, runs contrary to the clear language of section 511(c)(2), the legislative history underlying that section (see note 20, *supra*), and longstanding Commission case law.<sup>87</sup>

### C. Cumulative Impacts from a Rise in Water Temperature

The Coalition raises the issue of the cumulative impacts from the thermal increase on the aquatic life in the river.<sup>88</sup> The majority expressly declined to reach this issue, leaving the question for another day.<sup>89</sup> However, because the dissent did address it and because we wish to reach complete closure on the entire thermal impact issue,<sup>90</sup> we briefly address the “cumulative impacts” issue.

The Coalition’s pleadings on this matter are ambiguous. It is apparently asserting that a 1°F increase in water temperature would present us either with at

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<sup>84</sup> *Id.* at 561 n.14, quoting Clean Water Act § 101(f), 33 U.S.C. § 1251(f). See also *Seabrook*, CLI-78-1, 7 NRC at 24; *Peach Bottom*, ALAB-532, 9 NRC at 283, and cited authority; *Yellow Creek*, ALAB-515, 8 NRC at 709-10 (quoting Sen. Baker, the sponsor of the forerunner to section 511(c)(2), regarding that section’s purpose of avoiding duplication). Regarding avoiding delays in the form of relitigation of the same issues, see *Seabrook*, CLI-78-1, 7 NRC at 26-27.

<sup>85</sup> *Seabrook*, CLI-78-1, 7 NRC at 26.

<sup>86</sup> *Id.* at 28 n.42.

<sup>87</sup> We are troubled by the Board Chairman’s statement that the “Appeal Board . . . got it wrong” in *Seabrook*. Tr. 271 (presumably referring to ALAB-366 and/or ALAB-422).

<sup>88</sup> Petition for Review at 11; Coalition Initial Brief at 2-3.

<sup>89</sup> 64 NRC at 181-82. The dissent, however, did address the matter. *Id.* at 214-15.

<sup>90</sup> As noted above, this issue was couched in terms more general than “heat shock.” See Petition for Review at 10-14 (referring to “thermal impact” and “thermal discharge”).



least one Category-2 environmental issue in addition to heat shock or with at least one Category-1 issue.<sup>91</sup>

If our first impression is correct, then the argument is fatally undermined by the Coalition's failure to specify such an additional Category-2 issue. If our second interpretation is correct, then the Coalition loses sight of the fact that *only* Category-2 environmental issues must be addressed in an Environmental Report<sup>92</sup> and may therefore be litigated at an adjudicatory hearing.<sup>93</sup> The Category-2 environmental issues listed in our regulations include only one thermal effect — heat shock.<sup>94</sup> All remaining thermal-related issues fall within Category 1. As such, they need not be addressed in an Environmental Report and are thus impermissible topics for adjudication.<sup>95</sup>

Either way, there are no additional thermal impacts which we could combine with heat shock in order to conduct a cumulative impact analysis of thermal effects.<sup>96</sup>

### III. CONCLUSION

We *reverse* the Board majority's decision to admit the Coalition's Contention 1 for litigation.

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<sup>91</sup> In some pleadings, the Coalition refers to "the cumulative Category 2 impacts of . . . increased thermal discharge" and thereby suggests the possibility of more than one Category 2 environmental impact. Coalition Initial Brief at 24. *See also id.* at 3 ("at least one Category 2 impact"), 21 ("the cumulative impacts of thermal discharge"), 24 ("cumulative impacts"), 26 n.8 ("Further development of the facts before the [Board] may reveal other Category 2 impacts"); Coalition Reply Brief at 4 ("impacts" of heat shock . . . include its direct, indirect and cumulative impacts"). The Coalition's argument could, however, also be read to mean that the "at least one Category 2 impact" (*id.* at 3) combines with other unspecified non-Category 2 (i.e., Category 1) impacts to create "the cumulative environmental impact of the increased thermal discharge" (Coalition Initial Brief at 2).

<sup>92</sup> 10 C.F.R. § 51.53(c)(3)(ii).

<sup>93</sup> *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-07-3, 65 NRC 13, 20 (2007); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 19 (2001).

<sup>94</sup> 10 C.F.R. Part 51, Subpart A, App. B, Table B-1.

<sup>95</sup> *Id.*

<sup>96</sup> We also agree with Judge Wardwell that the State of Vermont's 5-year review period for its permits provides an opportunity to reexamine any cumulative impacts of these effluents and to modify the parameters as needed to protect the aquatic life in the river.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 11th day of April 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 52-011-ESP**

**SOUTHERN NUCLEAR OPERATING  
COMPANY  
(Early Site Permit for Vogtle  
ESP Site)**

**April 17, 2007**

**SCHEDULING: HEARING ON THE MERITS**

Section 2.332(d) of 10 C.F.R. distinguishes between safety issues and environmental issues with respect to the timing of the hearing (though not with respect to the timing of discovery). Our regulations give the presiding officer discretion to accelerate the merits hearing on safety issues, but not on environmental issues. Thus, while the Board may decide to proceed to an early hearing on the merits of safety issues — that is, before the NRC Staff finishes its safety evaluation — the Board “may not commence” a hearing on environmental issues before the final environmental impact statement has been issued.

**SCHEDULING: HEARING ON THE MERITS**

As a general proposition, the Commission has the authority “to enter into case-specific procedural orders . . . to facilitate the efficient resolution of issues before the Board.” The Commission is willing to be flexible in the timing of National Environmental Policy Act hearings where special circumstances are present. But we see no basis for deviating from our regulations here.

## MEMORANDUM AND ORDER

In its March 12, 2007, Ruling on Standing and Contentions,<sup>1</sup> the Licensing Board admitted two environmental contentions, rejected all other proposed contentions, and also certified the following question to the Commission:

May the Vogtle [Early Site Permit] Licensing Board go forward with merits litigation on admitted environmental contentions in the proceeding such that any evidentiary hearing could be conducted following issuance of the Staff's [draft environmental impact statement], as opposed to the [final environmental impact statement]?<sup>2</sup>

The Board first posed this question during a Prehearing Conference. At that time, the Board asked the parties whether there would “be any objection to going forward based on the draft . . . rather than the final environmental impact statement” and asked for a joint report from the parties on this question.<sup>3</sup> The NRC Staff filed the parties’ joint report.<sup>4</sup> Both the Joint Petitioners<sup>5</sup> and the NRC Staff opposed the Board’s proposal — the Staff on purely legal grounds and the Joint Petitioners on the same legal grounds plus a concern that expediting the proceeding might undermine its integrity — while the early site permit applicant, Southern Nuclear Operating Company, favored proceeding on the merits based upon the draft environmental impact statement. On the record before us, we decline to authorize or require a merits hearing prior to the issuance of the final environmental impact statement.

The relevant portion of our Part 2 regulations on hearings, 10 C.F.R. § 2.332(d), distinguishes between safety issues and environmental issues with respect to the timing of the hearing (though not with respect to the timing of discovery). Our regulations give the presiding officer (here, the Licensing Board) discretion to accelerate the merits hearing on safety issues, but not on environmental issues:

In establishing a schedule, the presiding officer shall take into consideration the NRC staff’s projected schedule for completion of its safety and environmental

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<sup>1</sup> LBP-07-3, 65 NRC 237 (2007).

<sup>2</sup> LBP-07-3, 65 NRC at 278.

<sup>3</sup> Transcript of Prehearing Conference held in Waynesboro, GA, at 186 (Feb. 13, 2007), available as ADAMS Accession No. ML070530133. (ADAMS is the acronym for the NRC’s Agencywide Documents Access and Management System, which is publicly accessible through the NRC’s Web page at <http://www.nrc.gov>.)

<sup>4</sup> Joint Report Regarding Scheduling (Feb. 23, 2007) (Joint Report). This Joint Report presents the parties’ positions and legal arguments and serves as briefing for our purposes here.

<sup>5</sup> Joint Petitioners are the Center for a Sustainable Coast, Savannah Riverkeeper, Southern Alliance for Clean Energy, Atlanta Women’s Action for New Directions, and Blue Ridge Environmental Defense League.

evaluations to ensure that the hearing schedule does not adversely impact the staff's ability to complete its reviews in a timely manner. *Hearings on safety issues may be commenced* before publication of the NRC staff's safety evaluation upon a finding by the presiding officer that commencing the hearings at that time would expedite the proceeding. Where an environmental impact statement (EIS) is involved, *hearings on environmental issues addressed in the EIS may not commence* before the issuance of the final EIS. In addition, discovery against the NRC staff on safety or environmental issues, respectively, should be suspended until the staff has issued the [safety evaluation report] or EIS, unless the presiding officer finds that the commencement of discovery against the NRC staff (as otherwise permitted by the provisions of this part) before the publication of the pertinent document will not adversely affect completion of the document and will expedite hearing.<sup>6</sup>

Thus, while the Board may decide to proceed to an early hearing on the merits of safety issues — that is, before the NRC Staff finishes its safety evaluation — the Board “may not commence” a hearing on environmental issues before the final environmental impact statement has been issued.

This reading of Part 2 is reinforced by one of our Part 51 regulations on environmental procedure, 10 C.F.R. § 51.104(a)(1). That regulation says that (in cases where a hearing is held, a final environmental impact statement is prepared, and environmental matters are at issue) the NRC Staff

*may not offer* the final environmental impact statement in evidence or present the position of the NRC staff on matters within the scope of NEPA [the National Environmental Policy Act] and [Part 51, Subpart A] *until* the final environmental impact statement is filed with the Environmental Protection Agency, furnished to commenting agencies and made available to the public.<sup>7</sup>

Prior to our 2004 revision of Part 2, we had approved early hearings on safety issues only, not on environmental issues:

[A]ny evidentiary hearing should not commence before completion of the Staff's Safety Evaluation Report . . . or Final Environmental Statement . . . regarding an application, unless the presiding officer finds that beginning earlier, e.g., by starting the hearing *with respect to safety issues* prior to issuance of the [Safety Evaluation Report], will indeed expedite the proceeding, taking into account the effect of going forward on the Staff's ability to complete its evaluations in a timely manner.<sup>8</sup>

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<sup>6</sup> 10 C.F.R. § 2.332(d) (emphasis added).

<sup>7</sup> 10 C.F.R. § 51.104(a)(1) (emphasis added).

<sup>8</sup> *Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 21 (1998) (emphasis added).

The same view is apparent in our case law:

The evidentiary hearing should not commence until after completion of the final [Safety Evaluation Report] and [Final Environmental Statement], unless the Licensing Board in its discretion finds that starting the hearing *with respect to safety issues* prior to the issuance of the final [Safety Evaluation Report] will expedite the proceeding without adversely impacting the Staff's ability to complete its evaluations in a timely manner.<sup>9</sup>

The Board lacks discretion to proceed to hearing on an accelerated basis on environmental issues because — unlike the Staff's work on safety issues — its work on environmental issues requires compliance with the public participation and public comment processes of NEPA and associated regulations. In addition, whereas NRC hearings on safety issues concern the adequacy of the license application, not the NRC Staff's work, NRC hearings on NEPA issues focus entirely on the adequacy of the NRC Staff's work.<sup>10</sup> A premature hearing on a *draft* Staff document has the potential to distract the Staff from tasks it otherwise would be performing, or to force the Staff to take legal positions on environmental issues before public comments have been filed and before the Staff has had a full opportunity to consider its draft environmental impact statement — to the possible detriment of the quality of Staff's analysis. As we noted in our statements of consideration when revising Part 2 in 2004:

In proceedings where the NRC staff is a party, the staff may not be in a position to provide testimony or take a final position on some issues until [the safety evaluation report and final environmental impact statement] have been completed. This may be the case in particular with regard to the NRC staff's environmental evaluation, less so with regard to the Staff's safety evaluation. In many cases, it could be unproductive and cumbersome to have a two-pronged hearing with one part of the hearing being conducted before issuance of the documents.<sup>11</sup>

It is true that in two recent uranium enrichment proceedings we authorized hearing the merits of environmental issues in advance of a final environmental

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<sup>9</sup> *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-01-20, 54 NRC 211, 214 (2001) (emphasis added).

<sup>10</sup> See, e.g., *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 89 (1998); *Curators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 121 & n.67 (1995); *Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 NRC 774, 792-94 (1978).

<sup>11</sup> 69 Fed. Reg. 2182, 2187 (Jan. 14, 2004).

impact statement.<sup>12</sup> In one, the point became moot because no contentions were admitted.<sup>13</sup> In the second, *Louisiana Energy Services, L.P.*, the merits hearing on environmental issues did in fact commence based on the Staff's draft environmental documents.<sup>14</sup> But in that case, unlike the present proceeding, all parties acquiesced in an early hearing on environmental issues: "in this instance all the parties involved in [environmental] issues, including the Staff, agreed to go forward on the admitted environmental contentions following issuance of the Staff's draft [environmental impact statement]." <sup>15</sup> Here, by contrast, the Staff argues that our regulations do not allow the hearing to start until after the final environmental impact statement is issued.<sup>16</sup> The Staff distinguishes this proceeding from *LES* because an early hearing was authorized from the outset in the Commission's notice of hearing in *LES*, but not here.<sup>17</sup> The Joint Petitioners concur with the Staff's view, but go further to argue that an early hearing would compromise the integrity of the Staff's NEPA review.<sup>18</sup> We do not agree that an early hearing necessarily would compromise the Staff's NEPA review. However, as we stated earlier, there are some potential consequences from an early hearing, at least as a general matter.

The Applicant, Southern Nuclear, argues that we have the authority "to enter case-specific procedural orders . . . to facilitate the efficient resolution of issues

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<sup>12</sup> *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-3, 59 NRC 10, 17 (2004); *USEC Inc.* (American Centrifuge Plant), CLI-04-30, 60 NRC 426, 432 (2004). Our "authorization" took the following form:

Threshold environmental legal and policy issues need not await issuance of the final [environmental impact statement]. . . .

. . . .

. . . The evidentiary hearing with respect to issues should commence promptly after completion of the final Staff documents ([safety evaluation report or environmental impact statement]) *unless the Licensing Board in its discretion finds that starting the hearing with respect to one or more safety issues prior to the issuance of the final [safety evaluation report] (or one or more environmental contentions directed to the Applicant's Environmental Report) will expedite the proceeding without adversely impacting the Staff's ability to complete its evaluations in a timely manner.*

*LES*, CLI-04-3, 59 NRC at 17 (emphasis added).

<sup>13</sup> *USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433 (2006) (affirming denial of one set of contentions); *USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451 (2006) (affirming denial of second set of contentions).

<sup>14</sup> *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 395-96 (2005).

<sup>15</sup> *LES*, LBP-05-13, 61 NRC at 396 n.1.

<sup>16</sup> Joint Report at 1-2.

<sup>17</sup> *Id.* at 2-3.

<sup>18</sup> *Id.* at 3-4.

before the Board.”<sup>19</sup> We certainly agree with this proposition in general.<sup>20</sup> The *LES* example shows that we are willing to be flexible in the timing of NEPA hearings where special circumstances are present. But we see no basis for deviating from our regulations here since the circumstances that made *LES* a special case do not apply to the early site permit cases in general. While early site permit proceedings should and will be handled expeditiously — and are in fact intended to help streamline the licensing process for new reactors<sup>21</sup> — no one has shown or even argued that the particular urgency<sup>22</sup> that motivated accelerating the *LES* proceeding is present here. Further, we do not see a distinction between this early site permit proceeding and other NRC licensing decisions, including recently decided or pending early site permit cases, calling for a special procedure here. Also, since two of the three parties have opposed proceeding to hearing prior to release of the final environmental impact statement, acquiescence is not an available basis or mechanism for following the alternate procedure used in *LES*.

For all of these reasons, we do not authorize or require a merits hearing prior to the issuance of the final environmental impact statement at this time. We do expect the NRC Staff, however, to finalize its draft environmental impact statement as expeditiously as possible, and we expect the Board to conduct any ensuing hearing equally expeditiously, bearing in mind the anticipated submission of Southern Nuclear’s application for a combined operating license not later than the first half of 2008.<sup>23</sup>

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<sup>19</sup> *Id.* at 5.

<sup>20</sup> See, e.g., *National Whistleblower Center v. NRC*, 208 F.3d 256, 262-63 (2000); *City of West Chicago v. NRC*, 701 F.2d 632, 647 (1983).

<sup>21</sup> See Final Rule: “Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors,” 54 Fed. Reg. 15,372, 15,378-79 (Apr. 18, 1989).

<sup>22</sup> In establishing a hearing schedule for the *LES* proceeding, we

recognize[d] . . . that legislation currently being considered would require the NRC to issue decisions on new enrichment facility applications within 2 years of receipt of the application; consequently, the Commission will endeavor to identify efficiencies, and provide pertinent resources, to further reduce the time the agency needs to complete reviews and reach decisions in licensing uranium enrichment facilities.

*LES*, CLI-04-3, 59 NRC at 16.

<sup>23</sup> See Southern Nuclear Operating Company, Project Number: 00737, Vogtle Electric Generating Plant Early Site Permit Application (August 14, 2006) (Transmittal letter), at 1, available as ADAMS Accession No. ML062290246. If the early site permit process remains incomplete when Southern Nuclear is ready to file its combined operating license application, the company may choose to avail itself of the provision in our regulations that allows an applicant for a construction permit or combined license to “at its own risk, reference in its application a site for which an early site permit application has been docketed but not granted.” 10 C.F.R. § 52.27(c).



IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 17th day of April 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-255-LT**

**CONSUMERS ENERGY COMPANY,  
NUCLEAR MANAGEMENT  
COMPANY, LLC, ENTERGY  
NUCLEAR PALISADES, LLC,  
and ENTERGY NUCLEAR  
OPERATIONS, INC.  
(Palisades Nuclear Plant)**

**April 26, 2007**

**RULES OF PRACTICE: CONTENTIONS**

The “issues” in license transfer proceedings constitute “contentions” under 10 C.F.R. § 2.309(f) and must therefore meet the standards for admissibility set forth in that regulation.

**LICENSE TRANSFER ADJUDICATION: STAFF PARTICIPATION**

The Staff ordinarily does not participate as a party in the adjudicatory portion of license transfer proceedings. *See generally* 10 C.F.R. § 2.1316(b), (c).

**RULES OF PRACTICE: STANDING**

To intervene as of right in any Commission licensing proceeding, a petitioner

must demonstrate that its “interest may be affected by the proceeding,” i.e., it must demonstrate “standing.”

#### **RULES OF PRACTICE: STANDING (TRADITIONAL)**

To demonstrate standing in a license transfer proceeding, the petitioner must

- (1) identify an interest in the proceeding by
  - (a) alleging a concrete and particularized injury (actual or threatened) that
  - (b) is fairly traceable to, and may be affected by, the challenged action (e.g., the grant of an application to approve a license transfer), and
  - (c) is likely to be redressed by a favorable decision, and
  - (d) lies arguably within the “zone of interests” protected by the governing statute(s).

The petitioner must also specify the facts pertaining to that interest. *See Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 293 (2000); *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Units 1 and 2), CLI-99-30, 50 NRC 333, 340-41 & n.5 (1999) (and cited authority).

#### **RULES OF PRACTICE: STANDING (REPRESENTATIONAL)**

Any organization seeking “representational standing” (i.e., permission to represent the interests of its members) must show that at least one of its members may be affected by the Commission’s approval of the transfer (such as by the member’s activities on or near the site), must identify that member, and must demonstrate that the member has (preferably by affidavit) authorized the organization to represent him or her and to request a hearing on his or her behalf. *See FitzPatrick*, CLI-00-22, 52 NRC at 293; *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 (2000); *GPU Nuclear Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000), and cited authority. The member seeking representation must qualify for standing in his or her own right; the interests that the representative organization seeks to protect must be germane to its own purpose; and neither the asserted claim nor the requested relief must require an individual member to participate in the organization’s legal action. *See, e.g., Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999), and CLI-98-13, 48 NRC 26, 30-31 (1998), *petition for review filed sub nom. Ohngo Gaudadeh Devia v. NRC*, No. 05-1419 (D.C. Cir. Nov. 7, 2005).

**RULES OF PRACTICE: STANDING (REPRESENTATIONAL)**

If an organization does not identify the members it purportedly represents, the NRC cannot “determine whether the organization actually does represent members who consider that they will be affected by [the licensing action] . . . or rather, [i]s simply seeking the ‘vindication of its own value preference.’” *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 389-90, *reconsideration denied*, ALAB-539, 9 NRC 422 (1979), and ALAB-544, 9 NRC 630 (1979). *See also Sierra Club v. Morton*, 405 U.S. 727, 739-40 (1972). And without written authorization for such representation, we would have no “concrete indication that, in fact, the member wishes to have [the organization represent its interests] in th[is] proceeding.” *Allens Creek*, ALAB-535, 9 NRC at 396.

**RULES OF PRACTICE: STANDING (PROXIMITY)**

To demonstrate an interest based on proximity, a petitioner must provide greater specificity than merely stating that some of its members live, work, or engage in recreation “adjacent” to or “near” an NRC-licensed facility. *See, e.g., Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-94-3, 39 NRC 95, 102 n.10 (1994); *Atlas Corp.* (Moab, Utah Facility), LBP-97-9, 45 NRC 414, 426-27, *aff’d*, CLI-97-8, 46 NRC 21 (1997). We require fact-specific standing allegations, not conclusory assertions.

**RULES OF PRACTICE: STANDING (PROXIMITY)**

Assertions that a member lives within the service area of the utility that operates a licensed facility or within the same county as the facility is insufficiently specific to justify a finding of standing.

**RULES OF PRACTICE: STANDING (ORGANIZATIONAL)**

Organizations seeking to intervene in their own right must satisfy the same standing requirements as individuals seeking to intervene. *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 528, *aff’d in relevant part*, CLI-91-13, 34 NRC 185, 187-88 (1991). This is because an organization, like an individual, is considered a “person” as we have defined that word in 10 C.F.R. § 2.4 and as we have used it in 10 C.F.R. § 2.309 regarding standing.

**RULES OF PRACTICE: STANDING (ZONE OF INTERESTS)**

Petitioners' interest in the promotion of "economic use of energy" falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act. *See Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983). *See generally Envirocare of Utah v. NRC*, 194 F.3d 72 (D.C. Cir. 1999). Likewise, petitioners' promotion of "the public interest, environmental protection, and consumer protection" are broad interests shared with many others (*see generally Sierra Club v. Morton*, 405 U.S. 727, 734-35 (1972); *Three Mile Island*, CLI-83-25, 18 NRC at 332) and too general to constitute a protected interest under these two statutes. *Three Mile Island*, CLI-83-25, 18 NRC at 332. Petitioners have shown no risk of "discrete institutional injury to [themselves], other than the general environmental and policy interests of the sort we repeatedly have found insufficient for organizational standing." *International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001) (emphasis added).

**RULES OF PRACTICE: STANDING (ZONE OF INTERESTS)**

In essence, Petitioners seek to play the role of a "private attorney general" — a role that AEA § 189 — which grants a hearing right to those with an "interest" in the proceeding — does not contemplate. *Exelon Generation Co., LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 579 & n.4 (2005), citing *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), ALAB-333, 3 NRC 804, 806 n.6 (1976). *See also Curators of the University of Missouri* (TRUMP-S Project), LBP-90-30, 32 NRC 95, 103 (1990).

**RULES OF PRACTICE: STANDING (GOVERNMENTAL)**

The County and Township within which a licensed facility is located are local governmental bodies that, pursuant to 10 C.F.R. § 2.309(d)(2), need make no further demonstration of standing.

**RULES OF PRACTICE: STANDING (GOVERNMENTAL)**

Not all organizations with governmental ties are entitled to participate in our proceedings as a "local governmental body (county, municipality, or other subdivision)" under section 2.309(d)(2), in much the same way not all organizations with governmental ties were entitled to participate in our proceedings as governmental agencies under our former regulation, 10 C.F.R. § 2.715(c), regarding participation by nonparties. Under that former section, an advisory

body that lacked executive or legislative responsibilities was determined by the Commission to be “so far removed from having the representative authority to speak and act for the public that [it did] not qualify” as a governmental entity for the purpose of section 2.715(c). *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 202-03 (1998).

#### **RULES OF PRACTICE: STANDING**

Commission practice requires each party to separately establish standing. *See Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 623 (1981).

#### **RULES OF PRACTICE: CONTENTIONS**

We defer ruling on the admissibility of the contentions at this stage since we find that the arguments concerning at least one contention and the need for access to redacted information are sufficient to warrant our approval of the requested access. *FitzPatrick*, CLI-00-22, 52 NRC at 300 n.23. Petitioners are obligated to put forward and support contentions when seeking intervention, based on the application and information available. *See, e.g., Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 429 (2003). *See generally* 10 C.F.R. § 2.309(c) and (f)(2) (providing for admission of late-filed contentions if based on previously unavailable information). The Commission may decide the admissibility of such contentions or defer ruling on them, considering the need for access to redacted information and other relevant factors. *See FitzPatrick*, CLI-00-22, 52 NRC at 296-319.

#### **RULES OF PRACTICE: CONTENTIONS**

To demonstrate that contentions are admissible under Subpart M, a petitioner must

set forth the [contentions] (factual and/or legal) that petitioner seeks to raise, . . . demonstrate that those [contentions] fall within the scope of the proceeding, . . . demonstrate that those [contentions] are relevant and material to the findings necessary to a grant of the license transfer application, . . . show that a genuine dispute exists with the applicant regarding the [contentions], and . . . provide a concise statement of the alleged facts or expert opinions supporting petitioner’s position on such [contentions], together with references to the sources and documents on which petitioner intends to rely.

*FitzPatrick*, CLI-00-22, 52 NRC at 295; *Nine Mile Point*, CLI-99-30, 50 NRC at 342 (and cited authority). See 10 C.F.R. § 2.309(f). As we observed in *FitzPatrick*, “[t]hese standards do not allow mere notice pleading; the Commission will not accept the filing of a vague, unparticularized [contention], unsupported by alleged fact or expert opinion and documentary support.” In short, “[g]eneral assertions or conclusions will not suffice.” *FitzPatrick*, CLI-00-22, 52 NRC at 295 (internal quotation marks omitted).

## **RULES OF PRACTICE: CONTENTIONS**

In a license transfer adjudication, petitioners who have been granted access to an applicant’s or licensee’s proprietary information must show that any new or revised contentions could not have been submitted without the requested access to the redacted proprietary information in the license transfer application. If petitioners cannot make this showing, then they will have to meet not only the contention requirements set forth above, but also the late-filing requirements set forth in 10 C.F.R. § 2.309(c).

## **MEMORANDUM AND ORDER**

### **I. INTRODUCTION**

The four captioned Applicants have entered into an “Asset Sale Agreement” dated July 11, 2006, regarding the Palisades Nuclear Power Plant (“Palisades”) and Independent Spent Fuel Storage Installation (“ISFSI”), both near South Haven, Michigan. As one step toward effectuating this agreement, the Applicants on August 31, 2006, filed with us an application for authorization to transfer and amend the NRC operating license associated with the Palisades plant and ISFSI.<sup>1</sup> (Although the agreement also encompassed the sale of the Big Rock Point ISFSI, the transfer of the NRC license for that property is not at issue here.)

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<sup>1</sup> The license at issue is DPR-20 (Palisades Facilities Operating License) issued under 10 C.F.R. Part 50. The ISFSI is subject to a general license under 10 C.F.R. § 72.210. The requested “conforming amendments” to the license are administrative, not substantive, and are intended merely to reflect the proposed transfer. The Application proposes no physical or operational changes to the Palisades facility. See “Notice of Consideration of Approval of Transfer of Facility Operating License and Conforming Amendment and Opportunity for Hearing, 71 Fed. Reg. 66,805 (Nov. 16, 2006). The public version of the Application can be found on the Commission’s Web site as ADAMS Accession No. ML062500352. (ADAMS is the acronym for the NRC’s Agencywide Documents Access and Management System — a computerized storage and retrieval system for NRC documents, publicly accessible at <http://www.nrc.gov>.)

These facilities are currently owned by Consumers Energy Company (“Consumers”) and operated by Nuclear Management Company, LLC. These two Applicants seek authorization to transfer the license associated with the Palisades Plant and ISFSI to the remaining two Applicants, Entergy Nuclear Palisades, LLC (“Entergy Nuclear Palisades”) and Entergy Nuclear Operations, Inc. (“Entergy Nuclear Operations”) (collectively “Entergy”). Entergy would thereafter own and operate those facilities.

The Applicants submitted the Palisades Application to the Commission pursuant to section 184 of the Atomic Energy Act of 1954 (“AEA”)<sup>2</sup> and sections 50.80 and 50.90 of the Commission’s regulations.<sup>3</sup> On November 16, 2006, the Commission published in the *Federal Register* a notice on the Application.<sup>4</sup>

Responding to that Notice, two groups opposing the license transfer have filed timely Petitions To Intervene and Requests for Hearing. The first group comprises two public interest organizations — the Michigan Environmental Council and the Public Interest Research Group in Michigan (collectively “Environmental Petitioners”).<sup>5</sup> And in the second group are Van Buren County (“the County”), Covert Township (“the Township”), Covert Public Schools, Van Buren County Intermediate School District, Van Buren County District Library, Lake Michigan College, and South Haven Hospital (collectively “Local Units”).<sup>6</sup> The Petitioners’ concerns center around two general questions (or “issues”<sup>7</sup>): does Entergy

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<sup>2</sup> 42 U.S.C. § 2234 (precluding the transfer of any NRC license unless the Commission both finds the transfer in accordance with the AEA and gives its consent in writing).

<sup>3</sup> 10 C.F.R. §§ 50.80, 50.90. Section 50.80 reiterates the requirements of AEA § 184, *supra*, sets forth the filing requirements for a license transfer application, and establishes the following test for approval of such an application: (1) the proposed transferee is qualified to hold the license and (2) the transfer is otherwise consistent with law, regulations, and Commission orders. Section 50.90 authorizes applications to amend existing operating licenses or construction permits for production or utilization facilities.

<sup>4</sup> 71 Fed. Reg. 66,805, *supra* note 1.

<sup>5</sup> Petition for Leave To Intervene of the Michigan Environmental Council and Public Interest Research Group in Michigan and Request for Hearing, Request for Extension of Time, and Request for Discovery (Dec. 6, 2006) (“Environmental Petitioners’ Petition”).

<sup>6</sup> Petition by Van Buren County, Covert Township, Covert Public Schools, Van Buren County Intermediate School District, Van Buren County District Library, Lake Michigan College, and South Haven Hospital (Collectively Referred to as “Local Units”) for Leave To Intervene and Request for Hearing, Request for Extension of Time and Request for Discovery (Dec. 6, 2006) (“Local Units’ Petition”).

<sup>7</sup> Both groups of Petitioners use the term “issues” to describe their general arguments on these two questions. This terminology stems from a now-superseded 1998 procedural regulation that governed the arguments of petitioners to intervene in license transfer cases. *See* former 10 C.F.R. § 2.1306(b)(2) (rescinded in 2004) (a person seeking to intervene must “[s]et forth the issues sought to be raised”). In 2004, we rescinded section 2.1306(b)(2) and, in its place, incorporated 10 C.F.R. § 2.309(f) by

(Continued)



have the necessary financial qualifications to own and operate the facilities safely, and are the decommissioning funds which are to be transferred adequate to provide for the safe decommissioning of the licensed facilities? Both groups include within the scope of their concerns not only the Palisades facility but also the Big Rock Point ISFSI (*see* section III, *infra*).

Each group has also submitted a Request for Discovery and a Request for Extension of Time within which to submit revised contentions. These requests are grounded in the two groups' current lack of access to the redacted portions of three documents: Section II.F ("Financial Qualifications") of the Application for Transfer of Facility Operating License, Entergy's proposed Operating Agreement, and Entergy Nuclear Palisades' projected financial statement.

The Applicants filed Answers to these hearing requests, and the two petitioner groups then submitted Replies to those Answers. The NRC Staff, which is not required to be a party, has submitted no pleadings.<sup>8</sup> We consider the pleadings under Subpart M of our procedural rules.<sup>9</sup>

For the reasons set forth below, we find that the Environmental Petitioners, Covert Public Schools, Van Buren County Intermediate School District, Van Buren County District Library, Lake Michigan College, and South Haven Hospital have not demonstrated standing to participate in this adjudication, but that the County and the Township have standing. We also define the proceeding's scope, conditionally grant the County's and the Township's request for access to the redacted portions of the license transfer Application, grant their request for an extension of time, deny their request for discovery, require the appointment of a presiding officer, and address several minor administrative matters.<sup>10</sup>

## II. THE LICENSE TRANSFER APPLICATION

The Application explains that, if we approve the license transfer, Entergy

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reference. *See* 10 C.F.R. § 2.1300. Section 2.309(f) sets forth the standards for admissibility of "contentions." But despite this regulatory change, petitioners, applicants, and the Commission have continued to use the term "issues." We clarify today that the "issues" in license transfer proceedings constitute "contentions" under section 2.309(f) and must therefore meet the standards for admissibility set forth in that regulation.

<sup>8</sup> The Staff ordinarily does not participate as a party in the adjudicatory portion of license transfer proceedings. *See generally* 10 C.F.R. § 2.1316(b), (c).

<sup>9</sup> 10 C.F.R. §§ 2.1301-2.1331.

<sup>10</sup> The purpose of this adjudication is to resolve whether, for the reasons presented by the Petitioners, the Commission should itself disapprove the Palisades license transfer application — regardless of the NRC Staff's action. On April 6, 2007, the NRC Staff completed its review and approved the license transfer. 72 Fed. Reg. 19,057 (Apr. 16, 2007). The Staff approval is, of course, subject to the outcome of this adjudication.

Nuclear Palisades will assume title to the Palisades facilities as well as to all used and spent nuclear fuel and other licensed nuclear materials at Palisades. Entergy Nuclear Operations will have the authority for the plant's operation and maintenance. As part of the sales transaction, Consumers also entered into a Power Purchase Agreement with Entergy Nuclear Palisades under which Consumers has agreed to purchase energy and capacity at preestablished rates and schedules for 15 years from the closing date of the sale of Palisades.

On that closing date, Consumers will transfer the assets of its Qualified Decommissioning Trust Fund to a trust fund that Entergy Nuclear Palisades will establish. Applicants state that the amount of the new trust fund will be sufficient to satisfy the NRC funding requirements if the license for Palisades is renewed as requested in Consumers' and Nuclear Management Company's "Application for License Renewal" (March 22, 2005). (The Commission approved the Palisades license renewal Application on January 17, 2007.<sup>11</sup>) Applicants also state that, once the sale has closed, the responsibility for decommissioning the plant will transfer to Entergy.<sup>12</sup>

Before turning to the issue of Petitioners' standing, we first address a threshold matter dealing with the scope and nature of this adjudicatory proceeding.

### III. PRELIMINARY PROCEDURAL ISSUES

By a *separate* license transfer application submitted under 10 C.F.R. §§ 50.80 and 72.50, Consumers and Nuclear Management Company also seek our authorization to transfer to Entergy the Part 50 license for the Big Rock Point Nuclear Plant and the license for the ISFSI, located near Charlevoix, Michigan.<sup>13</sup> The sales of the Palisades and Big Rock Point properties are part of a single transaction effectuated in the Asset Sales Agreement. As with the Palisades property, Entergy Nuclear Palisades would own and Entergy Nuclear Operations would maintain the Big Rock ISFSI. The Applicants in the instant proceeding have indicated that, under the Asset Sales Agreement, "the sale of each facility [the Palisades Plant and ISFSI, and the Big Rock Point ISFSI] is conditioned upon the sale of the other,

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<sup>11</sup> See *Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-07-9, 65 NRC 139, 140 n.2 (2007); "Nuclear Management Company, LLC; Palisades Nuclear Plant; Notice of Issuance of Renewed Facility Operating License No. DPR-20 for an Additional 20-Year Period; Record of Decision," 72 Fed. Reg. 3168 (Jan. 24, 2007); "Consumers Energy Company, Nuclear Management Company, LLC, Docket No. 50-255, Palisades Nuclear Plant, Renewed Facility Operating License, Renewed License No. DPR-20" (Jan. 17, 2007), ADAMS Accession No. ML070100469.

<sup>12</sup> Application at 2-3.

<sup>13</sup> See "Application for Approval of Transfer of Facility Operating License No. DPR-6 and ISFSI License No. SFGL-16" (Oct. 31, 2006), ADAMS Accession No. ML063100429.

and . . . that both will be treated together as a single transaction consummated on the same day.”<sup>14</sup>

The Petitioners have apparently taken this to mean that the scope of the Asset Sales Agreement defines the scope of this proceeding, for their petitions address not only the transfer of the Palisades facilities’ license but also the transfer of licenses for Big Rock Point and the ISFSI.<sup>15</sup>

The Petitioners are mistaken. Although both the Palisades and Big Rock Point license transfer Applications stem from the same document (the Asset Sales Agreement), they nonetheless seek different licensing actions and are the subject of two separate *Federal Register* notices.<sup>16</sup> Moreover, the *Palisades* Petitioners have not sought intervention in the *Big Rock Point* proceeding.<sup>17</sup>

#### IV. DISCUSSION

To intervene as of right in any Commission licensing proceeding, a petitioner must demonstrate that its “interest may be affected by the proceeding,” i.e., it must demonstrate “standing.”<sup>18</sup> (A petitioner must also raise at least one admissible contention,<sup>19</sup> but we do not reach the admissibility question in today’s decision.) As already noted, we conclude that the Environmental Petitioners, Covert Public Schools, Van Buren County Intermediate School District, Van Buren County District Library, Lake Michigan College, and South Haven Hospital have failed to demonstrate standing, but that the County and the Township have standing.

##### A. Standing

To demonstrate standing in a license transfer proceeding, the petitioner must

- (1) identify an interest in the proceeding by
  - (a) alleging a concrete and particularized injury (actual or threatened) that

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<sup>14</sup> Application at 2.

<sup>15</sup> See, e.g., Local Units’ Petition at 27; Environmental Petitioners’ Petition at 3.

<sup>16</sup> We published the *Federal Register* notice for the Big Rock Point transfer Application on January 30, 2007. 72 Fed. Reg. 4302.

<sup>17</sup> Two other organizations and one individual filed a joint petition to intervene and request for hearing in the *Big Rock Point* proceeding. We address that petition in a separate order, also issued today.

<sup>18</sup> See AEA § 189a, 42 U.S.C. § 2239(a).

<sup>19</sup> See 10 C.F.R. § 2.309(a); *Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 292 (2000).

- (b) is fairly traceable to, and may be affected by, the challenged action [e.g., the grant of an application to approve a license transfer], and
  - (c) is likely to be redressed by a favorable decision, and
  - (d) lies arguably within the “zone of interests” protected by the governing statute(s).
- (2) specify the facts pertaining to that interest.<sup>20</sup>

Moreover, any organization seeking “representational standing” (i.e., permission to represent the interests of its members) must also show that at least one of its members may be affected by the Commission’s approval of the transfer (such as by the member’s activities on or near the site), must identify that member, and must demonstrate that the member has (preferably by affidavit) authorized the organization to represent him or her and to request a hearing on his or her behalf.<sup>21</sup> The member seeking representation must qualify for standing in his or her own right; the interests that the representative organization seeks to protect must be germane to its own purpose; and neither the asserted claim nor the requested relief must require an individual member to participate in the organization’s legal action.<sup>22</sup>

## ***1. Environmental Petitioners***

### ***a. Representational Standing***

The two Environmental Petitioners seek representational standing. Yet neither Petitioner provides a supporting affidavit or other evidence that any of its members has authorized it to represent his or her interests in this proceeding. Our case law on representational standing is both longstanding and clear regarding the need to demonstrate authorization.<sup>23</sup> Our reasoning is simple. If an organization does not identify the members it purportedly represents, we cannot “determine whether the organization actually does represent members who consider that they will be affected by [the licensing action] . . . or rather, [i]s simply seeking the ‘vindication

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<sup>20</sup> See *FitzPatrick*, CLI-00-22, 52 NRC at 293; *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Units 1 and 2), CLI-99-30, 50 NRC 333, 340-41 & n.5 (1999) (and cited authority).

<sup>21</sup> See *FitzPatrick*, CLI-00-22, 52 NRC at 293; *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 (2000); *GPU Nuclear Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000), and cited authority.

<sup>22</sup> See, e.g., *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999), and CLI-98-13, 48 NRC 26, 30-31 (1998), *petition for review filed sub nom. Ohngo Gaudadeh Devia v. NRC*, No. 05-1419 (D.C. Cir. Nov. 7, 2005).

<sup>23</sup> See, e.g., *Oyster Creek*, CLI-00-6, 51 NRC at 202, and cited authority.

of its own value preference.’<sup>24</sup> And without written authorization for such representation, we would have no “concrete indication that, in fact, the member wishes to have [the organization represent its interests] in th[is] proceeding.”<sup>25</sup> The failure both to identify the member(s) they purport to represent and to provide proof of authorization therefore precludes Environmental Petitioners from qualifying as intervenors.

But even were we to ignore the Environmental Petitioners’ failure to follow the established requirements for invoking representational standing, we would still conclude that they have not demonstrated the required “interest” in this proceeding, using the standards for standing set out in *FitzPatrick* and *Nine Mile Point*, *supra*. The Environmental Petitioners attempt to demonstrate this interest by relying on their (unnamed) members’ proximity to the facilities. Petitioners assert that many of their members (or, in the case of the Michigan Environmental Council, many of its member organizations’ members) “live, work, or engage in recreation, *adjacent and near* the [Palisades and Big Rock] facilities.”<sup>26</sup> But to demonstrate an interest based on proximity, a petitioner must provide greater specificity than this regarding the distance from a plant.<sup>27</sup> We require fact-specific standing allegations, not conclusory assertions. The closest that the Public Interest Research Group in Michigan came to providing the required specificity was to submit a 3 1/2-year-old affidavit from a state regulatory proceeding, asserting that some of its members live in Van Buren County.<sup>28</sup> Likewise, the Michigan Environmental Council submitted an equally old affidavit (signed by its Policy Director) from the same state regulatory proceeding, asserting that its member groups included individuals living within Consumers’ service territory.<sup>29</sup> We cannot find the requisite “interest” based on such general assertions of proximity.

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<sup>24</sup> *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 389-90, *reconsideration denied*, ALAB-539, 9 NRC 422 (1979), and ALAB-544, 9 NRC 630 (1979). *See also Sierra Club v. Morton*, 405 U.S. 727, 739-40 (1972).

<sup>25</sup> *Allens Creek*, ALAB-535, 9 NRC at 396.

<sup>26</sup> Environmental Petitioners’ Petition at 6 (emphasis added). *See also id.* at 9 (“[M]embers of [the Michigan Environmental Council]/[the Public Interest Research Group in Michigan] also represent Michigan citizens who live locally *near* both the Big Rock . . . site and the Palisades . . . site” (emphasis added)).

<sup>27</sup> *See, e.g., Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-94-3, 39 NRC 95, 102 n.10 (1994) (assertion that members live “close” to transportation routes at issue insufficient for standing); *Atlas Corp.* (Moab, Utah Facility), LBP-97-9, 45 NRC 414, 426-27 (descriptions of activities as being “near,” in “close proximity,” or “in the vicinity” of facility in question insufficient to establish standing), *aff’d*, CLI-97-8, 46 NRC 21 (1997).

<sup>28</sup> *See* Affidavit of Brian Imus at 2 (July 10, 2003), submitted in Michigan Public Utilities Commission Case No. U-13771, appended to Environmental Petitioners’ Reply.

<sup>29</sup> *See* Affidavit of James P. Clift at 2 (July 10, 2003), appended to Environmental Petitioners’ Reply.

*b. Organizational Standing in Their Own Right*

Environmental Petitioners also seek to intervene in their own right, based on their organizational purposes. They claim to “have direct interests under their organizational mission statements, and purpose, to promote the economic use of energy, including nuclear energy, and to promote the public interest, environmental protection, and consumer protection.”<sup>30</sup>

Organizations seeking to intervene in their own right must satisfy the same “standing” requirements as individuals seeking to intervene.<sup>31</sup> This is because an organization, like an individual, is considered a “person” as we have defined that word in 10 C.F.R. § 2.4 and as we have used it in 10 C.F.R. § 2.309 regarding standing.

The Environmental Petitioners’ interest in the promotion of “economic use of energy” falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act.<sup>32</sup> Also, their promotion of “the public interest, environmental protection, and consumer protection” are broad interests shared with many others<sup>33</sup> and too general to constitute a protected interest under these two statutes.<sup>34</sup> In essence, the Environmental Petitioners seek to play the role of a “private attorney general” — a role that AEA § 189 — which grants a hearing right to those with an “interest” in the proceeding — does not contemplate.<sup>35</sup> Neither Environmental Petitioner has shown any risk of “discrete institutional injury *to itself*, other than the general environmental and

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<sup>30</sup> Environmental Petitioners’ Petition at 9. *See also id.* at 7. Along similar lines, they point to their “concern[ ] with Michigan’s environment,” their “promot[ion of] the decommissioning of nuclear plants and [spent nuclear fuel] storage sites in Michigan,” and their interest in gaining “adequate financial assurances to accomplish these objectives.” Environmental Petitioners’ Petition at 5. However, our review of the Environmental Petitioners’ mission statements (appended to their Reply) reveals no references to nuclear plants, SNF storage sites, or financial assurance.

<sup>31</sup> *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 528, *aff’d in relevant part*, CLI-91-13, 34 NRC 185, 187-88 (1991).

<sup>32</sup> *See Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983) (denying standing to an organization with similar general interests in the “development of economical energy resources”). *See generally Envirocare of Utah v. NRC*, 194 F.3d 72 (D.C. Cir. 1999).

<sup>33</sup> *See generally Sierra Club v. Morton*, 405 U.S. 727, 734-35 (1972); *Three Mile Island*, CLI-83-25, 18 NRC at 332.

<sup>34</sup> *Three Mile Island*, CLI-83-25, 18 NRC at 332.

<sup>35</sup> *Exelon Generation Co., LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 579 & n.4 (2005), citing *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), ALAB-333, 3 NRC 804, 806 n.6 (1976). *See also Curators of the University of Missouri* (TRUMP-S Project), LBP-90-30, 32 NRC 95, 103 (1990) (“intervenor may not act as private attorneys-general and raise issues that are of concern to them but do not affect them directly”).

policy interests of the sort we repeatedly have found insufficient for organizational standing.”<sup>36</sup>

## 2. *Local Units*

Van Buren County and Covert Township are local governmental bodies. The Palisades facility is located within the boundaries of both these entities. Thus, pursuant to 10 C.F.R. § 2.309(d)(2), they do not need to make any further demonstration of standing. Petitioners Covert Public Schools, Van Buren County Intermediate School District, Lake Michigan College, South Haven Hospital and Van Buren County District Library have not alleged that they are a county, municipality, or other subdivision, nor have they alleged that Palisades is located within their boundaries. Thus, we must analyze standing pursuant to 10 C.F.R. § 2.309(d)(1).<sup>37</sup>

It is not sufficient to rely on the standing of one petitioner because Commission practice requires each party to separately establish standing.<sup>38</sup> In the instant case, the Local Units collectively have made broad statements regarding a range of issues “including, but not limited to, distribution of Palisades’ decommissioning funds; the inadequacy of emergency preparedness relating to the site; the likely continued operation until 2031 of Palisades (if the license is renewed); and the ultimate decommissioning of Palisades by a private party purchaser.”<sup>39</sup> They have not, however, clearly explained their individual interests or how they will be harmed. Although they make brief reference to a showing of organizational standing,<sup>40</sup> they have said little about their individual organizational interests apart

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<sup>36</sup> *International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001) (emphasis added).

<sup>37</sup> Section 2.309(d)(2) was promulgated in 2004 as part of our revisions to our adjudicatory procedures, and is an acknowledgment that the State or local governmental body has an inherent interest in licensing actions within its boundaries sufficient to grant standing. Thus, no further demonstration of such interest is necessary. Not all organizations with governmental ties are entitled to participate in our proceedings as a “local governmental body (county, municipality, or other subdivision)” under section 2.309(d)(2), in much the same way not all organizations with governmental ties were entitled to participate in our proceedings as governmental agencies under our former regulation, 10 C.F.R. § 2.715(c), regarding participation by nonparties. Under that former section, an advisory body that lacked executive or legislative responsibilities was determined by the Commission to be “so far removed from having the representative authority to speak and act for the public that [it did] not qualify” as a governmental entity for the purpose of section 2.715(c). See *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 202-03 (1998).

<sup>38</sup> See *Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 623 (1981).

<sup>39</sup> See Local Units’ Petition at 4.

<sup>40</sup> *Id.* at 7.

from bare references to Covert Public Schools', Van Buren County Intermediate School District's, Lake Michigan College's, and South Haven Hospital's connection to emergency preparedness for Palisades.<sup>41</sup> Although they suggest geographic proximity as a basis for a presumption of harm in support of standing,<sup>42</sup> they fail to provide any individual addresses as required by 10 C.F.R. § 2.309(d)(1) and do not specify their respective distances to the Palisades facility.<sup>43</sup>

In summary, we find that Covert Public Schools, Van Buren County Intermediate School District, Lake Michigan College, South Haven Hospital, and Van Buren County District Library have failed to set forth a clear and coherent argument for standing.<sup>44</sup> Since they have failed to sufficiently demonstrate their interests and injury, their petition to intervene is denied.<sup>45</sup>

## **B. Admissibility of Contentions**

We are deferring ruling on the admissibility of the contentions of the County and Township at this stage since we find that the arguments concerning at least one of their contentions (viz. Contention D-1(a)) and the need for access to redacted information are sufficient to warrant our approval of the requested access.<sup>46</sup> The County and the Township may amend or withdraw their current

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<sup>41</sup> *Id.* at 6.

<sup>42</sup> *Id.* at 7 n.4; Local Units' Reply to Response of Consumers Energy Company, Nuclear Management Company, LLC and Entergy Nuclear Palisades LLC and Entergy Nuclear Operations in Opposition to Local Units' Petition for Leave To Intervene and Request for Hearing, Request for Extension of Time and Request for Discovery at 3 n.3 (Jan. 10, 2007) ("Local Units' Reply Brief").

<sup>43</sup> In their Reply Brief, the Local Units make the general statement that they are "within miles of the Palisades facility and well within the Emergency Planning Zone of 10 miles." Local Units' Reply Brief at 3. This is unlike, for example, the Declaration in support of petitioner's standing, including the specific statement of distance from the licensed facility, that was submitted and accepted in *Vermont Yankee*, CLI-00-20, 52 NRC at 163.

<sup>44</sup> *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999). See also *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-02-16, 55 NRC 317, 336-37 (2002) (denying standing to the California Public Utilities Commission).

<sup>45</sup> Since by all indications these Petitioners, acting through single counsel, have concerns shared with the County and the Township, as a practical matter the latter two will be able to carry forward the concerns of the other Petitioners notwithstanding that the other Petitioners in this proceeding will not have formal status as parties.

<sup>46</sup> *FitzPatrick*, CLI-00-22, 52 NRC at 300 n.23 ("where critical information has been submitted to the NRC under a claim of confidentiality and was not available to Petitioners when framing their issues, it is appropriate to defer ruling on the admissibility of an issue until the petitioner has had an opportunity to review this information and submit a properly documented issue"). Petitioners are obligated to put forward and support contentions when seeking intervention, based on the application and information available. See, e.g., *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2;

(Continued)



financial contentions after reviewing the redacted information in the Palisades license transfer Application under appropriate conditions (see section IV.C, *infra*). We therefore defer our consideration of the admissibility question until after the County and the Township have had the opportunity to renew or amend their contentions and the Applicants have had the opportunity to challenge them as revised. We will rule promptly on the admissibility issues once they are ripe for decision.

The County and the Township should bear in mind the following admissibility standards:

To demonstrate that contentions are admissible under Subpart M, a petitioner must

- (1) set forth the [contentions] (factual and/or legal) that petitioner seeks to raise,
- (2) demonstrate that those [contentions] fall within the scope of the proceeding,
- (3) demonstrate that those [contentions] are relevant and material to the findings necessary to a grant of the license transfer application,
- (4) show that a genuine dispute exists with the applicant regarding the [contentions], and
- (5) provide a concise statement of the alleged facts or expert opinions supporting petitioner's position on such [contentions], together with references to the sources and documents on which petitioner intends to rely.<sup>47</sup>

As we observed in *FitzPatrick*, “[t]hese standards do not allow mere notice pleading; the Commission will not accept the filing of a vague, unparticularized [contention], unsupported by alleged fact or expert opinion and documentary support.”<sup>48</sup> In short, “[g]eneral assertions or conclusions will not suffice.”<sup>49</sup>

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Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 429 (2003) (“Petitioners have an obligation to examine the application and publicly available information, and to set forth their claims at the earliest possible moment”). See generally 10 C.F.R. § 2.309(c) and (f)(2) (providing for admission of late-filed contentions if based on previously unavailable information). The Commission may decide the admissibility of such contentions or defer ruling on them, considering the need for access to redacted information and other relevant factors. See *FitzPatrick*, CLI-00-22, 52 NRC at 296-319.

<sup>47</sup> See *FitzPatrick*, CLI-00-22, 52 NRC at 295; *Nine Mile Point*, CLI-99-30, 50 NRC at 342 (and cited authority). See 10 C.F.R. § 2.309(f).

<sup>48</sup> *FitzPatrick*, CLI-00-22, 52 NRC at 295 (internal quotation marks omitted).

<sup>49</sup> *Id.* “This is not to say, however, that our threshold admissibility requirements should be turned into a ‘fortress to deny intervention.’” *Id.*, citing *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 335 (1999), and quoting *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974), *rev’d in part*, CLI-74-32, 8 AEC 217 (1974), *rev’d in part*, *York Committee for a Safe Environment v. NRC*, 527 F.2d 812 (D.C. Cir. 1975).

The County and the Township must also show that their new or revised contentions could not have been submitted without the requested access to the redacted information in the license transfer Application. If they cannot make this showing, then they will have to meet not only the contention requirements set forth above, but also the late-filing requirements set forth in 10 C.F.R. § 2.309(c).

We also recommend that the County and the Township consider the arguments that the Applicants have already submitted in opposition to the admissibility of their various contentions. To the extent the County and the Township find the Applicants' arguments persuasive regarding a particular contention, then they should refrain from resubmitting that contention. To the extent they disagree with the Applicants' arguments, then the County and the Township may address them when proffering revised contentions. These measures, if taken by the County and the Township, should narrow and focus the contentions, expedite the proceeding, and reduce their own, the Applicants', and this agency's adjudicatory costs.

**C. Local Units' Request for Access to Unredacted Versions of Financial Information, Request for an Extension of Time, and Request for Discovery**

The prospective new owner and the new operator of the facilities at issue in this proceeding are not "electric utilities" under our rules, and must therefore demonstrate financial qualifications to own and/or operate the plant.<sup>50</sup> As our rules require, the Entergy companies have submitted 5-year cost and revenue projections and other business-related financial data and discussion,<sup>51</sup> but much of this material was submitted as confidential financial information and has been redacted from the Application (i.e., withheld from public disclosure).<sup>52</sup>

The County and the Township assert that their lack of access to the redacted financial information precludes them from fully presenting their contentions. As explained above, we agree. We therefore direct the Applicants to provide the County and the Township access to the unredacted version of the license transfer Application within 5 business days, pursuant to a confidentiality agreement identical or similar to the attached "Model Confidentiality and Nondisclosure Agreement."<sup>53</sup>

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<sup>50</sup> See 10 C.F.R. § 50.33(f).

<sup>51</sup> See 10 C.F.R. §§ 50.33(k)(1), 50.75.

<sup>52</sup> See 10 C.F.R. § 2.390(b).

<sup>53</sup> Participants have entered into confidentiality and nondisclosure agreements in at least two prior license transfer proceedings. See *Consolidated Edison Co. of New York* (Indian Point, Units 1 and 2), CLI-01-8, 53 NRC 225, 228, 230-31 (2001); *FitzPatrick*, CLI-00-22, 52 NRC at 292.

If the Applicants, the County, and the Township cannot agree on the terms of a confidentiality and nondisclosure agreement, then they shall inform the Presiding Officer (see section V.A of this Order, *infra*) of this fact, and shall indicate specifically the areas where they disagree. At that time, the Applicants, the County and Township, or all three may move the Presiding Officer for issuance of a protective order.<sup>54</sup> The motion must explain with specificity the objections to any terms of the Model Confidentiality and Nondisclosure Agreement. The motion must also provide a draft protective order that contains the terms on which the Applicants, the County, and the Township agree and the terms that the movant believes will resolve any issues of accessibility still in dispute. Any answer to a motion for a protective order must be filed within 5 business days of the date of the motion. The Presiding Officer shall entertain no Reply Briefs.

Assuming confidentiality matters are resolved, and once the Applicants have released the sensitive information to the County and the Township, the latter two entities should file revised contentions within 20 days.<sup>55</sup> (To that extent, we are granting the County's and Township's request for extensions of time.) If such contentions are submitted, the Applicants may file answers within 25 days thereafter, and the County and the Township may file replies thereto within 7 days.<sup>56</sup>

The Applicants, the County, and the Township should note that we are *not* allowing extra time for service of *any* of the documents referenced in this section (IV.C) of today's order. Thus, to be timely, those documents must be received by the Commission's Office of the Secretary no later than 4:45 p.m. (if filing is by hard copy) or 11:59 p.m. (if filing is electronic) on the final day of the filing period.

We deny the County's and the Township's instant discovery motion. We have long precluded petitioners from using discovery as a device to uncover additional information supporting the admissibility of contentions.<sup>57</sup> Contentions should rest on defects or omissions *in the application*, not on underlying "discovery" material.

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<sup>54</sup> See, e.g., *Oyster Creek*, CLI-00-6, 51 NRC at 211; *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-27, 50 NRC 257, 268 (1999); *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 225 (1999).

<sup>55</sup> See *Indian Point*, CLI-01-8, 53 NRC at 228, 231; *FitzPatrick*, CLI-00-22, 52 NRC at 300. Cf. 10 C.F.R. § 2.309(b)(1).

<sup>56</sup> Cf. 10 C.F.R. § 2.309(h)(1), (2).

<sup>57</sup> See, e.g., *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-10, 42 NRC 1, 3 (1995); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1263 (1982).

## V. OTHER PROCEDURAL MATTERS

### A. Designation of Presiding Officer

The Commission directs the Chief Administrative Judge to appoint a Presiding Officer for this proceeding within the next 5 days. The Presiding Officer's initial responsibilities shall be limited to resolving any disputes regarding the County's and Township's access to proprietary information in the Application. By subsequent order, the Commission may direct the Presiding Officer to conduct a hearing on any contentions we have admitted for litigation and to address procedural matters that arise between the issuance of our "admissibility" order and the close of the hearing record.<sup>58</sup> Until the appointment of a Presiding Officer, the parties should address any written submissions directly to the Commission.

### B. Notices of Appearance

To the extent that they have not already done so, each counsel for or representative of either the Applicants or the County and Township shall, within 5 days, file a notice of appearance complying with the requirements of 10 C.F.R. § 2.314. Any counsel or representative who has already entered an appearance but who has not provided one or more of the pieces of information required under that regulation shall do so within 5 days.

### C. Participants in the Hearing and the Proceeding; Service List

The participants in the next (contention admissibility) stage of this proceeding will be the Applicants, the County, and the Township. The recipients on the service list will be:<sup>59</sup>

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<sup>58</sup>Our rules say that "ordinarily" the Commission itself will preside at license transfer hearings. See 10 C.F.R. § 2.1319(a). But our rules also allow us to designate "one or more Commissioners" or "any other person permitted by law" to preside. *Id.* Although we are requiring the appointment of a *presiding* officer, we need not decide on a *hearing* officer until after we decide whether any contention is admissible.

<sup>59</sup>We observe that the Michigan Public Service Commission is listed on some service lists. We have no objection to such service, but we do not require it.

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We direct the individuals or entities on this service list immediately to supplement or correct the above information to the extent that it is incomplete or inaccurate, and to notify all others on this service list immediately as to any changes.

#### **D. Service Requirements**

The preferred method of filing in this proceeding is electronic (i.e., by e-mail). Electronic copies should be in a current WordPerfect format (preferably WordPerfect 10.0 or XP). Service will be considered timely if sent electronically not later than 11:59 p.m. of the due date, or *received* by the Commission's Office of the Secretary no later than 4:45 p.m. of the due date (if filing is by hard copy), under Subparts C and M of our rules of practice and procedure (10 C.F.R. Part 2). These procedures will apply for the duration of this adjudicatory proceeding.

We also require the Applicants, the County, and the Township to submit a single signed hard copy of any such filings to the Office of the Secretary's Rulemakings and Adjudications Branch, *supra*. If either the Applicants or the County and Township wish to submit documents by courier or expedited delivery, those should be delivered to the Commission's street address — 11555 Rockville Pike, Rockville, MD 20852.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 26th day of April 2007.

**Commissioner Gregory B. Jaczko, Respectfully Dissenting**

I join with my colleagues in the majority of this decision, but respectfully dissent regarding the decision to deny standing to Covert Public Schools, Van Buren County Intermediate School District, Lake Michigan College, South Haven Hospital, and Van Buren County District Library. I believe there is ample evidence in the record to demonstrate the standing of these entities and that excluding them from participation based upon a lack of standing is contrary to the spirit of the Atomic Energy Act. Moreover, a demonstration of standing would not have assured their participation in the hearing because it would not have relieved them of the obligation to present an admissible contention. With the additional contention hurdles required for admission into NRC proceedings, I do not support such a restrictive application of the standing analysis.

## ATTACHMENT

### Model Confidentiality and Nondisclosure Agreement

#### I. INTRODUCTION

On [DATE], the [NAME OF APPLICANT] submitted to the U.S. Nuclear Regulatory Commission (NRC) an application for [TYPE OF LICENSE TRANSFER APPLICATION]. The application included the submission of documents containing financial information deemed by the applicant to be sensitive and proprietary (sensitive financial information). On [DATE], the NRC published a notice of consideration of approval of the transfer in the *Federal Register* [CITATION TO FEDERAL REGISTER].

#### II. CONFIDENTIALITY AND NONDISCLOSURE AGREEMENT

1. This Confidentiality and Nondisclosure Agreement applies to and governs [NAME OF APPLICANT] (Applicant) and [NAME OF INTERVENOR/PARTICIPANT], and their agents and representatives (including those described in Paragraph 3, below), with respect to these entities' provision, use, return, and destruction of sensitive financial information contained in the application.

2. The Applicant agrees to provide to [NAME OF INTERVENOR/PARTICIPANT] either one paper copy of [DESCRIBE OR LIST, AS APPROPRIATE, RELEVANT DOCUMENT(S)], or an electronic text file of each document. Each page of each document provided by the Applicant to [NAME OF INTERVENOR/PARTICIPANT] will be prominently marked: “**Sensitive Financial Information Subject to Confidentiality and Nondisclosure Agreement.**” The Applicant will provide paper copies of the document(s) and/or the storage medium containing the electronic file(s) (e.g., a CD-ROM or diskette) in a sealed envelope bearing prominent markings indicating the envelope contains “**Sensitive Financial Information Subject to Confidentiality and Nondisclosure Agreement.**”

3. [NAME OF INTERVENOR/PARTICIPANT] agrees to limit the possession and use of all sensitive financial information and the documents provided by the Applicant which contain this information to [NAMES OF ATTORNEYS REPRESENTING INTERVENOR/PARTICIPANT], [NAMES OF INTERVENOR/PARTICIPANT], [NAMES OF INTERVENOR/PARTICIPANT ORGANIZATION/ENTITY WHO HAVE DIRECT AUTHORITY TO MAKE DECISIONS WITH RESPECT TO THE PARTICIPATION OF THE ORGANIZATION/ENTITY IN THE PROCEEDING], individuals employed or retained by [NAME OF INTERVENOR/PARTICIPANT] to testify as expert witnesses in this proceeding, and to persons assisting the designated expert or witness in

the preparation of such testimony (and then only on a “need-to-know” basis to the minimum extent necessary for the effective performance by that person of his or her duties in connection with the resolution of issues related to this NRC proceeding. [NAME OF INTERVENOR/PARTICIPANT] agrees that before first disclosing or transmitting sensitive financial information to these individuals, each individual has executed a copy of this Confidentiality and Nondisclosure Agreement. [NAME OF INTERVENOR/PARTICIPANT] agrees that copies of the executed Confidentiality and Nondisclosure Agreement will be sent to the Applicant and filed with the Commission within five days of the date of execution.

4. [NAME OF INTERVENOR/PARTICIPANT] agrees to use the sensitive financial information provided by the Applicant only for the preparation of written submissions and testimony in this proceeding, and appeals to the Commission. If [NAME OF INTERVENOR/PARTICIPANT] is required to disclose any part of the sensitive financial information in any legal or regulatory proceeding other than this NRC proceeding, then prior to such disclosure [NAME OF INTERVENOR/PARTICIPANT] agrees to advise the Applicant in a timely fashion so that the Applicant can either consent to the disclosure or obtain a protective order from the relevant tribunal. In any event, [NAME OF INTERVENOR/PARTICIPANT] agrees to use all reasonable and available efforts to protect the confidential nature of the sensitive financial information provided to [NAME OF INTERVENOR/PARTICIPANT] by the Applicant.

5. [NAME OF INTERVENOR/PARTICIPANT] agrees to treat sensitive financial information provided to it by the Applicant as confidential, and take all reasonable and practical steps necessary to protect the confidentiality of the sensitive financial information and to prevent its dissemination beyond those expressly authorized and who have executed protective agreements. [NAME OF INTERVENOR/PARTICIPANT] agrees to store the information and documents in a secure fashion. Any documents containing sensitive financial information, or a storage medium containing electronic file(s) containing Sensitive financial information (e.g., a CD-ROM or diskette) filed by [NAME OF INTERVENOR/PARTICIPANT] with either the Commission or the presiding officer [AND THE NRC STAFF, IF A PARTY IN THE PROCEEDING] will be filed and served in a sealed envelope bearing prominent markings indicating the envelope contains “**Sensitive Financial Information Subject to Confidentiality and Nondisclosure Agreement.**” Each page of each document filed by [NAME OF INTERVENOR/PARTICIPANT] which contains sensitive financial information (including electronic files of documents containing such information) will be prominently marked: “**Sensitive Financial Information Subject to Confidentiality and Nondisclosure Agreement.**” [NAME OF INTERVENOR/PARTICIPANT] shall take appropriate steps to ensure that any electronic submission of files containing sensitive financial information is trans-



mitted only to persons and entities authorized to receive the sensitive financial information. [NAME OF INTERVENOR/PARTICIPANT] agrees to delete and overwrite any file containing sensitive financial information before discarding or reusing any diskettes or other media on which such files are stored.

6. [NAME OF INTERVENOR/PARTICIPANT], and its agents and representatives (including the persons described in Paragraph 3, above) agrees not to copy or reproduce the documents and electronic files containing sensitive financial information provided to it by the Applicant except as permitted by, and in accordance with the requirements set forth in, this Confidentiality and Nondisclosure Agreement.

7. Within 10 days after the date on which a NRC decision or order terminating this proceeding becomes no longer subject to judicial review, [NAME OF INTERVENOR/PARTICIPANT] agrees to: (i) return to [NAME OF APPLICANT] all documents containing sensitive financial information which were provided by [NAME OF APPLICANT] to [NAME OF INTERVENOR/PARTICIPANT] pursuant to this Confidentiality and Nondisclosure Agreement, (ii) destroy any other documents in its possession containing such sensitive financial information, and (iii) delete and overwrite any file containing sensitive financial information on any diskettes or other media on which such files are stored.

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Person seeking access to sensitive financial information Date

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Applicant representative Date

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket Nos. 50-155-LT  
72-043-LT**

**CONSUMERS ENERGY COMPANY  
(Big Rock Point Independent Spent  
Fuel Storage Installation)**

**April 26, 2007**

**RULES OF PRACTICE: STANDING (PROXIMITY)**

Although a petitioner's claim of residence within 50 miles of the Big Rock Point ISFSI might entitle him to a presumption of standing based on his proximity if this were a reactor construction permit or operating license proceeding (see *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989); *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1421 n.4 (1977)), we have required far closer proximity in other licensing proceedings, including license transfer cases. We determine on a case-by-case basis whether the proximity presumption should apply, considering the "obvious potential for offsite [radiological] consequences," or lack thereof, from the application at issue, and specifically "taking into account the nature of the proposed action and the significance of the radioactive source." *Exelon Generation Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580-81 (2005).

**RULES OF PRACTICE: STANDING (PROXIMITY)**

License transfers even for *operating* nuclear power plants typically involve

little if any radiological risk, as there are generally no changes to the physical plant, its operating procedures, or its design basis accident analysis. The potential radiological risks associated with an ISFSI license transfer are even lower, because an ISFSI is essentially a passive structure rather than an operating facility, and there therefore is less chance of widespread radioactive release.

#### **RULES OF PRACTICE: STANDING (REPRESENTATIONAL)**

An individual petitioner should not request to intervene in his own right and simultaneously authorize other petitioners to represent his or her interests. Such multiple representation might lead to confusion as to which of the petitioners was speaking for the individual; such confusion would be detrimental to the process of adjudication. *Northern States Power Co.* (Pathfinder Atomic Plant), LBP-89-30, 30 NRC 311, 316 (1989). By contrast, nothing precludes an individual from seeking to intervene both on his/her own behalf and as a representative of others. *See, e.g., Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 530, *aff'd*, CLI-91-13, 34 NRC 185 (1991); *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-11, 21 NRC 609, 615 (1985).

### **MEMORANDUM AND ORDER**

On July 11, 2006, Consumers Energy Company (“Consumers”) entered into an “Asset Sales Agreement” with Entergy Nuclear Palisades, LLC, and Entergy Nuclear Operations, Inc., regarding the Big Rock Point Independent Spent Fuel Storage Installation (“ISFSI”). As one step toward effectuating this agreement, Consumers filed an application for authorization to transfer and amend the NRC licenses associated with the Big Rock Point ISFSI.<sup>1</sup> (The Big Rock Point reactor was permanently shut down in 1997 and has now been decommissioned.<sup>2</sup>) Three Petitioners have filed a joint petition to intervene and request for a hearing to challenge Consumers’ application. We deny the petition and terminate this adjudication.

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<sup>1</sup>The Asset Sales Agreement also involved a transfer of the license for the Palisades Nuclear Power Plant and its associated ISFSI. The Palisades transfer is the subject of a separate adjudicatory proceeding in Docket No. 50-255-LT.

<sup>2</sup>See NUREG-1350, Vol. 18, 2006-2007 *Information Digest* at 95.

## I. BACKGROUND

Consumers submitted its Big Rock Point license transfer application pursuant to section 184 of the Atomic Energy Act of 1954<sup>3</sup> and sections 50.80 and 72.50 of the Commission's regulations.<sup>4</sup> On January 30, 2007, the Commission published a notice in the *Federal Register* announcing our consideration of Consumers' application and offering the opportunity for a hearing on it.<sup>5</sup> The notice informed the public that petitions to intervene must meet the standards set forth in section 2.309 of our procedural regulations.<sup>6</sup> That regulation requires a petitioner to proffer at least one admissible contention<sup>7</sup> and to demonstrate standing.<sup>8</sup>

Responding to the *Federal Register* notice, the Nuclear Information and Resource Service, Don't Waste Michigan, and Mr. Victor McManemy (collectively "Petitioners") filed a joint Request for Hearing and Petition To Intervene on February 20, 2007. The first two Petitioners seek representational standing and the third seeks standing as an individual.<sup>9</sup> Mr. McManemy states that he authorizes both organizations to represent his interests, lists himself as a "Member-Intervenor,"<sup>10</sup> and, as an individual, claims standing based on the fact that he lives within 50 miles of the Big Rock Point site.<sup>11</sup> Neither Mr. McManemy nor the two petitioning organizations have attempted to make a specific showing of harm from the ISFSI license transfer. Petitioners jointly proffer one "contention about the vulnerability of Big Rock Point's ISFSI to terrorism."<sup>12</sup>

Consumers filed an Answer opposing the hearing request. The Petitioners submitted no Reply to that Answer. The NRC Staff, which is not required to be a party, has submitted no pleadings.<sup>13</sup>

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<sup>3</sup> 42 U.S.C. § 2234 (precluding the transfer of any NRC license unless the Commission both finds the transfer in accordance with the AEA and gives its consent in writing).

<sup>4</sup> 10 C.F.R. §§ 50.80, 72.50.

<sup>5</sup> 72 Fed. Reg. 4302.

<sup>6</sup> *Id.* at 4303.

<sup>7</sup> 10 C.F.R. § 2.309(f).

<sup>8</sup> 10 C.F.R. § 2.309(d).

<sup>9</sup> Request for Hearing and Petition To Intervene at 1-2 ("Petition To Intervene").

<sup>10</sup> *Id.* at 1 & appended Declaration.

<sup>11</sup> *Id.* at 2 & appended Declaration.

<sup>12</sup> *Id.* at 5.

<sup>13</sup> In this proceeding, the NRC Staff completed its review of the license transfer application and approved it on April 6, 2007. 72 Fed. Reg. 19,055 (Apr. 16, 2007). The Staff's approval was subject to the Commission's action on the instant petition. This Order concludes the entire license transfer proceeding.

## II. DISCUSSION

Although Mr. McManemy's claim of residence within 50 miles of the Big Rock Point ISFSI might entitle him to a presumption of standing based on his proximity if this were a reactor construction permit or operating license proceeding,<sup>14</sup> we have required far closer proximity in other licensing proceedings, including license transfer cases. We determine on a case-by-case basis whether the proximity presumption should apply, considering the "obvious potential for offsite [radiological] consequences," or lack thereof, from the application at issue, and specifically "taking into account the nature of the proposed action and the significance of the radioactive source."<sup>15</sup>

License transfers even for *operating* nuclear power plants typically involve little if any radiological risk, as there are generally no changes to the physical plant, its operating procedures, or its design basis accident analysis. The potential radiological risks associated with an ISFSI license transfer are even lower, because an ISFSI is essentially a passive structure rather than an operating facility, and there therefore is less chance of widespread radioactive release.

Mr. McManemy has not demonstrated that the mere transfer of the ISFSI somehow increases his risk of radiological harm. There is simply no "obvious potential for offsite consequences" from this ISFSI transfer sufficient to justify applying a presumption of standing based on proximity.<sup>16</sup> He therefore fails to qualify for standing. And because the two petitioning organizations base their own claims of standing solely on Mr. McManemy's proximity, they too lack standing.

We also observe that, as a matter of procedure, Mr. McManemy should not have requested to intervene in his own right and simultaneously authorized each of the two other Petitioners to represent his interests. Such multiple representation might lead to confusion as to which of the three Petitioners was speaking for Mr. McManemy; such confusion would be detrimental to the process of adjudication.<sup>17</sup>

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<sup>14</sup> See *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989); *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1421 n.4 (1977).

<sup>15</sup> *Exelon Generation Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580-81 (2005).

<sup>16</sup> See generally *id.* at 580-83; *AmerGen Energy Co., LLC* (Three Mile Island Nuclear Station, Unit 1), CLI-05-25, 62 NRC 572, 574-76 (2005); *Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Units 1, 2, and 3), CLI-00-18, 52 NRC 129, 132 (2000).

<sup>17</sup> *Northern States Power Co.* (Pathfinder Atomic Plant), LBP-89-30, 30 NRC 311, 316 (1989) ("Catherine Hunt can have her interest protected by participating as an individual or by having South Dakota Resources Coalition represent her interest. It would be detrimental to the process to have a person appear in the proceeding individually and to be represented by an organization. . . . [S]he should

(Continued)

But given the failure of Mr. McManemy and the organizations to allege any injury beyond the assertion of Mr. McManemy's residence "within 50 miles," we need not sort out how to differentiate between him and the organizations. Petitioners' lack of standing also means that we need not address their contentions or their request to review proprietary information.

For the reasons set forth above, we *deny* the Petitioners' Petition To Intervene and *dismiss* this adjudicatory proceeding.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 26th day of April 2007.

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elect whether to appear individually or to be represented by the organization"). By contrast, nothing precludes an individual from seeking to intervene both on his/her own behalf and as a representative of others. *See, e.g., Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 530, *aff'd*, CLI-91-13, 34 NRC 185 (1991); *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-11, 21 NRC 609, 615 (1985).

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:**

**Lawrence G. McDade**, Chairman  
**Dr. Peter S. Lam**  
**Dr. Richard E. Wardwell**

**In the Matter of**

**Docket No. 70-7004-ML**  
**(ASLBP No. 05-838-01-ML)**

**USEC INC.**  
**(American Centrifuge Plant)**

**April 13, 2007**

**ATOMIC ENERGY ACT: SECTION 193(b) (URANIUM  
ENRICHMENT FACILITY)**

Section 193(b)(1) of the Atomic Energy Act of 1954, as amended, requires that for license applications for uranium enrichment facilities, “the [Nuclear Regulatory] Commission shall conduct a single adjudicatory hearing on the record with regard to the licensing of the construction and operation of a uranium enrichment facility.” 42 U.S.C. § 2243(b) (2000). Sections 70.23a and 70.31(e) of 10 C.F.R. implement this mandate.

**MANDATORY HEARING: SCOPE OF REVIEW (UNCONTESTED  
MATTERS)**

When a proceeding involving an application for a construction permit is uncontested the Board will not conduct a “*de novo* review,” rather it “conduct[s] a simple ‘sufficiency’ review of [the] uncontested issues.” *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005). The Board will “inquire whether the NRC Staff performed an adequate review and made findings with reasonable support in logic and fact.” *Id.*

**MANDATORY HEARING: SCOPE OF REVIEW (UNCONTESTED MATTERS)**

The Board “must narrow its inquiry to those topics or sections in [NRC] Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance.” *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-06-20, 64 NRC 15, 21-22 (2006).

**MANDATORY HEARING: SCOPE OF REVIEW (SAFETY)**

With respect to matters involving safety — i.e., issues pursuant to the Atomic Energy Act — Boards must determine whether the application and the record of the proceeding contain sufficient information and the review of the application by the NRC Staff has been adequate to support findings pursuant to 10 C.F.R. §§ 30.33, 40.32, and 70.23. 69 Fed. Reg. 61,411 (Oct. 18, 2004).

**MANDATORY HEARING: SCOPE OF REVIEW (ENVIRONMENT)**

With respect to matters involving the environment — i.e., issues arising from the National Environmental Policy Act (NEPA) — Boards must: (1) determine whether the review conducted by the NRC Staff pursuant to 10 C.F.R. Part 51 has been adequate; (2) determine whether the requirements of section 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have been complied with in the proceeding; (3) independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; and (4) determine whether a license should be issued, denied, or appropriately conditioned to protect the environment. 69 Fed. Reg. 61,411-12 (Oct. 18, 2004).

**REGULATORY GUIDES: APPLICATION**

Nuclear Regulatory Commission Issuances (NUREG) and Regulatory Guides (RG) serve as guidance and do not prescribe requirements. They are not substitutes for regulations and are not binding authority. *See Curators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 98 (1995); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986). A Board’s review focuses on compliance with the regulations, not compliance with a particular NUREG or RG.



#### **LICENSE APPLICATION: EXEMPTION REQUESTS**

In accordance with 10 C.F.R. §§ 40.14 and 70.17, an exemption can be granted if it is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest.

#### **LICENSE APPLICATION: EXEMPTION REQUESTS**

It may be inferred that an exemption is implicitly “authorized by law” if all of the conditions for granting the exemption are met (i.e., will not endanger life or property or the common defense and security, and is otherwise in the public interest) and no other provision prohibits, or otherwise restricts, its application. To do otherwise would render these two exemption provisions meaningless, which violates elementary rules of construction that the language of a regulation should not be read to destroy itself (*Citizens Bank of Maryland v. Strumpf*, 516 U.S. 16, 20 (1995)) and a provision should not be read in a way that is inconsistent with its purpose. *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 668-69 (1990); *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49, 59 (1987).

#### **LICENSE APPLICATION: EXEMPTION REQUESTS**

The NRC has traditionally read the language “authorized by law” to be the functional equivalent of “not prohibited by law.” See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), DD-90-8, 32 NRC 469, 488 (1990); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-841, 24 NRC 64, 99 (1986); *United States Department of Energy* (Clinch River Breeder Reactor Plant), CLI-82-83, 16 NRC 412, 422-25 (1982); *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 3 and 5), CLI-77-11, 5 NRC 719, 722 (1977).

#### **NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL IMPACT STATEMENT (AGENCY RESPONSIBILITIES)**

Pursuant to 10 C.F.R. Part 51, the NRC Staff’s Environmental Impact Statement (EIS) must discuss the potential environmental impacts of the proposed American Centrifuge Plant, including an evaluation of alternatives to determine whether there are any obviously superior options to the proposed action. In addition, the EIS analysis must compare the environmental costs of the facility to the Staff’s assessment of the benefits derived from the additional domestic supply of enriched uranium and the presence of upgraded enrichment technology in the United States.

**NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL  
IMPACT STATEMENT (ANALYSIS OF ALTERNATIVES)**

For purposes of the Environmental Impact Statement, the potential construction, operation, and decommissioning of the American Centrifuge Plant is the proposed action that must be the focus of the Board's review under the National Environmental Policy Act (42 U.S.C. § 4332(2)(C)).

**NATIONAL ENVIRONMENTAL POLICY ACT: SCOPE OF  
ENVIRONMENTAL ANALYSIS**

Under section 102(2)(A) of the National Environmental Policy Act, agencies are required to use a "systematic, interdisciplinary, approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment." 42 U.S.C. § 4332(2)(A).

**NATIONAL ENVIRONMENTAL POLICY ACT: SCOPE OF  
ENVIRONMENTAL ANALYSIS**

Under section 102(2)(C) of the National Environmental Policy Act, agencies are required to include a detailed statement on: (1) "the environmental impact of the proposed action"; (2) "any [unavoidable] adverse environmental effects"; (3) "alternatives to the proposed action"; (4) "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity"; and (5) "irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." 42 U.S.C. § 4332(2)(C)(i)-(v).

**NATIONAL ENVIRONMENTAL POLICY ACT: SCOPE OF  
ENVIRONMENTAL ANALYSIS**

Under section 102(2)(E) of the National Environmental Policy Act, agencies are required to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E).

**LICENSING BOARDS: NATIONAL ENVIRONMENTAL POLICY  
ACT REVIEW (FINAL BALANCE AMONG CONFLICTING  
FACTORS)**

In performing its National Environmental Policy Act review, the Board will

independently consider the final balance among the conflicting factors, which include: (1) the relative magnitude of the environmental impacts of the American Centrifuge Plant (ACP) as compared to other site locations, enrichment technologies, and depleted uranium conversion and disposal alternatives; (2) unavoidable adverse environmental impacts during construction and operation of the ACP and the mitigative actions proposed to minimize their effects; (3) potential cumulative impacts in the context of past, present, and future actions for both local (place-based) and national activities; (4) the magnitude of the irreversible and irretrievable commitments of resources; and (5) the relationship between short-term uses and long-term productivity of the human environment.

**CONSTRUCTION PERMIT PROCEEDING(S): INITIAL DECISION**

The Licensing Board’s Initial Decision directing the issuance of a license to construct and operate a uranium enrichment facility is immediately effective. 10 C.F.R. § 2.340.

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## INITIAL DECISION

### (Authorizing the Issuance of the American Centrifuge Plant License)

*[In a Notice dated April 13, 2007, the Licensing Board advised the parties that it was issuing on that date its Initial Decision, ruling on all of the issues that were the subject of the March 2007 evidentiary hearing in this proceeding. The Initial Decision, however, was not publicly released pending a review of whether export-controlled, proprietary, or other privileged information was used in the*

*Decision and, accordingly, should be redacted from the version of that document that would be publicly released. The Initial Decision which follows is that redacted public version of LBP-07-6.]*

## I. INTRODUCTION

Before this Atomic Safety and Licensing Board (Board) is the application of USEC Inc. (USEC) for authorization to possess and use source, byproduct, and special nuclear material (SNM) in order to enrich natural uranium to a maximum of 10% uranium-235 (U-235) by the gas centrifuge process.<sup>1</sup> USEC proposes to do this at a facility — denominated the American Centrifuge Plant (ACP) — to be constructed at the U.S. Department of Energy (DOE) Portsmouth facility near Piketon, Ohio (Portsmouth facility).<sup>2</sup>

On August 23, 2004, USEC filed a License Application pursuant to 10 C.F.R. Parts 30, 40, and 70, with the Nuclear Regulatory Commission (NRC or Commission) to obtain a 30-year license to operate the proposed ACP. The NRC published a Notice of Hearing in the *Federal Register*<sup>3</sup> and the Commission referred this matter to the Board to conduct a hearing as required by the Atomic Energy Act of 1954, as amended (AEA).<sup>4</sup> Thereafter, a public interest group, the Portsmouth/Piketon Residents for Environmental Safety and Security, and an individual, Geoffrey Sea, filed petitions to intervene. Based on the pleadings submitted, and after hearing argument from the putative intervenors, the Board determined that neither Petitioner had presented an admissible contention.<sup>5</sup> Both Petitioners appealed the Board's Order and, on April 3, 2006, the Commission affirmed the Board's rulings as to both Petitioners.<sup>6</sup> Thereafter, between March 13 and March 21, 2007, the Board conducted an oral uncontested hearing in this proceeding.<sup>7</sup> Accordingly, the only matter remaining before the Board with regard to USEC's License Application is to decide those issues addressed to the Board

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<sup>1</sup> Enrichment is the process of increasing the concentration of the U-235 isotope and decreasing the concentration of U-238. Uranium ore contains, on average, approximately 0.72% U-235 by weight. See NUREG-1834, "Environmental Impact Statement for the Proposed American Centrifuge Plant in Piketon, Ohio, Final Report" at xix (Apr. 2006) (NRC Staff Exh. 2) [hereinafter FEIS].

<sup>2</sup> Enriched uranium produced at the ACP will be used to manufacture fuel for commercial nuclear power reactors. The license being sought will not, however, permit the manufacture of fuel rods at the Portsmouth facility. See *id.*

<sup>3</sup> 69 Fed. Reg. 61,411 (Oct. 18, 2004).

<sup>4</sup> AEA § 193(b), 42 U.S.C. § 2243(b) (2000); see also AEA §§ 53, 63, 42 U.S.C. §§ 2073, 2093 (2000).

<sup>5</sup> LBP-05-28, 62 NRC 585 (2005).

<sup>6</sup> CLI-06-9, 63 NRC 433 (2006); CLI-06-10, 63 NRC 451 (2006).

<sup>7</sup> See 42 U.S.C. § 2243(b); 10 C.F.R. §§ 70.23a, 70.31(e).

by the Commission for resolution in this uncontested proceeding, which are explained below.<sup>8</sup>

This Initial Decision embodies the Board's findings regarding all uncontested matters in the above-captioned proceeding. It is based on the Board's review of the record of this proceeding including, but not limited to, the oral evidentiary hearing. This Initial Decision is the final action by the Board in this proceeding and authorizes the Director, Office of Nuclear Material Safety and Safeguards, to issue to USEC a license for the ACP consistent with the provisions of the AEA, NRC regulations, and this Initial Decision.

As explained in detail below, the Board finds that USEC's License Application and the record of this proceeding contain sufficient information, and that the NRC Staff's review of the Application, has been adequate to support findings in accordance with the applicable standards contained in 10 C.F.R. §§ 30.33, 40.32, and 70.23. Specifically, we find that: (1) USEC has adequately described the design of the facility including, but not limited to, the principal architectural and engineering criteria, and has adequately identified the features and components incorporated in the design for the protection of the health and safety of the public; (2) USEC is technically and financially qualified to construct and operate the proposed ACP; and (3) the issuance of the license for the construction and operation of the ACP will not be inimical to the common defense and security or to the health and safety of the public.<sup>9</sup>

In addition, having performed an evaluation of the issues under the National Environmental Policy Act of 1969 (NEPA),<sup>10</sup> we have made an independent determination that, subject to the proposed permit conditions and commitments to be enforced through application tie-downs,<sup>11</sup> the ACP License should be issued.

## II. LEGAL STANDARDS GOVERNING THIS PROCEEDING

The AEA requires that, for license applications for uranium enrichment facilities, the NRC must hold a hearing even when the license is not contested.<sup>12</sup> When an application for a construction permit is uncontested — as is the case here — the procedures to be followed by the Licensing Board to ensure compliance with the applicable statutes and regulations are described in 10 C.F.R. § 2.104(b)(2), (3) and in the Commission's 2005 answers to a series of certified questions submitted

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<sup>8</sup> See 69 Fed. Reg. 61,411; 10 C.F.R. §§ 30.33, 40.32, 70.23; *see also infra* pp. 436-38.

<sup>9</sup> See 10 C.F.R. §§ 30.33, 40.32, and 70.23.

<sup>10</sup> 42 U.S.C. §§ 4332-4335 (2000).

<sup>11</sup> Tie-downs are references to relevant license application documents that will be incorporated into the License by a specific license condition. *See* NRC Staff WDT/HTS-3 at 5-6.

<sup>12</sup> 42 U.S.C. § 2243(b); 10 C.F.R. §§ 70.23a, 70.31(e).

by the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel.<sup>13</sup>

In uncontested proceedings we are directed not to conduct a “*de novo* review.” Rather, we “should conduct a simple ‘sufficiency’ review of [the] uncontested issues.”<sup>14</sup> In so doing, the Board should decide “whether the safety and environmental record is ‘sufficient’ to support license issuance. In other words, [B]oards should inquire whether the NRC Staff performed an adequate review and made findings with reasonable support in logic and fact.”<sup>15</sup>

Recently, the Commission reiterated the appropriate depth for the Board’s review. The Commission explained that the Board “must narrow its inquiry to those topics or sections in Staff documents that it deems most important and should concentrate on portions of the documents that do not, on their face, adequately explain the logic, underlying facts, and applicable regulations and guidance.”<sup>16</sup>

In conducting its “sufficiency” review, Licensing Boards are directed to make specific findings.<sup>17</sup> First, with respect to matters involving safety — i.e., issues pursuant to the AEA — Boards must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support findings pursuant to 10 C.F.R. §§ 30.33, 40.32, and 70.23.

Second, with respect to matters involving the environment — i.e., issues arising from NEPA — Boards must:

- (1) Determine whether the review conducted by the NRC Staff pursuant to 10 C.F.R. Part 51 has been adequate;
- (2) Determine whether the requirements of Section 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have been complied with in the proceeding;
- (3) Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken;
- (4) Determine, whether a license should be issued, denied, or appropriately conditioned to protect the environment.<sup>18</sup>

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<sup>13</sup> *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5 (2005).

<sup>14</sup> *Id.* at 39.

<sup>15</sup> *Id.*

<sup>16</sup> *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-06-20, 64 NRC 15, 21-22 (2006).

<sup>17</sup> *See* 69 Fed. Reg. 61,411.

<sup>18</sup> *Id.* at 61,411-12.

With regard to the so-called “baseline” NEPA issues (# 2, 3, and 4), the Board’s function is not limited to passing on the adequacy of the NRC Staff’s review. Rather, the Board must also independently determine whether the applicable requirements of NEPA have been complied with and, after considering the final balance among conflicting factors, independently determine whether the license should be issued, denied, or appropriately conditioned to protect the environment.<sup>19</sup>

### III. REVIEW OF SAFETY-RELATED MATTERS

This Board has been charged to determine whether USEC’s License Application satisfies the safety standards set forth in the Notice of Hearing and the applicable NRC regulations.<sup>20</sup> The Hearing Notice requires the Board to determine, without conducting a *de novo* evaluation of the application, whether the application and record of the proceeding contain sufficient information and whether the NRC Staff’s review has been adequate to support the conclusions to be made by the Director of the Office of Nuclear Materials Safety and Safeguards with respect to the applicable standards presented above.

In fulfilling its responsibility to conduct a hearing in this matter, the Board issued an Order<sup>21</sup> that presented nine hearing topics and posed over forty questions

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<sup>19</sup> See *Exelon*, CLI-05-17, 62 NRC at 45.

<sup>20</sup> See 69 Fed. Reg. 61,411; 10 C.F.R. §§ 30.33, 40.32, and 70.23.

<sup>21</sup> Licensing Board Order (Establishing Modified Case Schedule, Issuing Questions and Identifying Hearing Topics) (Feb. 6, 2007) (unpublished) [hereinafter February 6 Order]. This order was issued in response to a Commission Order of February 1, 2007, CLI-07-5, 65 NRC 109, which directed the Board to accelerate its proposed case schedule. See Licensing Board Order (Establishing Tentative Case Schedule) (Nov. 17, 2006) (unpublished). The previous schedule was formulated by the Board, in part, because two of the Board members were then involved in a hearing and the drafting of the Initial Decision in another proceeding, and the third member was scheduled to be out of the country for several weeks immediately prior to the proposed hearing date. With the previous schedule, the Board anticipated that it would issue questions to the parties based on our review of the Final Environmental Impact Statement (FEIS) and Safety Evaluation Report (SER), analyze the parties’ responses to those questions, formulate hearing issues, analyze the written direct testimony filed by the parties in response to those hearing issues, and then conduct a hearing narrowly focused on those issues, if any, that remained unresolved. Given the acceleration of the hearing schedule necessitated by the Commission’s Order of February 1, this procedure was significantly compressed. Accordingly, the parties were required, with very short deadlines, to respond to the Board’s questions, which in some instances, lacked optimum focus. The parties did so in a very competent and professional manner. Without the energetic cooperation of both the NRC Staff and USEC, the Board would not have been able to meet the accelerated schedule for this proceeding that was set by the Commission. Accordingly, the Board commends the parties for the manner in which they promptly and comprehensively responded to the Board’s questions.



relating to the NRC Staff's safety review. After receipt of the Staff's responses,<sup>22</sup> the Board defined four more safety hearing topics and asked additional clarifying questions.<sup>23</sup> The resulting thirteen hearings topics related to safety are discussed below.<sup>24</sup>

As a preface, as noted above,<sup>25</sup> the Commission has directed the Board to concentrate our efforts on those portions of the NRC Staff's review where the facts or logic supporting important conclusions seemed incomplete or unclear. It was this guidance that informed our choice of the following hearing topics.<sup>26</sup>

### **HTS-1.<sup>27</sup> FACILITY DESCRIPTION<sup>28</sup>**

Pursuant to 10 C.F.R. §§ 30.32, 40.31, and 70.22, USEC's License Application must include information demonstrating that the equipment, facilities, and procedures to be used at the proposed ACP are adequate to protect health and

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<sup>22</sup> See NRC Staff Response to Atomic Safety and Licensing Board Order of February 6, 2007, at 1-5 (Feb. 20, 2007) [hereinafter NRC Staff February 20 Response]. The NRC Staff (and USEC) also submitted written direct testimony, which is referenced, as appropriate, below.

<sup>23</sup> See Licensing Board Memorandum and Order (Issuing Additional Questions and Hearing Topics) (Mar. 2, 2007) (unpublished) [hereinafter March 2 Order].

<sup>24</sup> The Board also presented three environmental hearing topics in our February 6 Order, and an additional three environmental hearing topics in our March 2 Order. These are discussed in Part IV, *infra*.

<sup>25</sup> See *supra* pp. 436-38.

<sup>26</sup> The NRC Staff submitted, on October 11, 2006, Proposed Findings of Fact and Conclusions of Law in the Mandatory Hearing. Exceptions were filed by USEC on October 19. See USEC Inc. Comments on NRC Staff's Proposed Findings of Fact and Conclusions of Law in the Mandatory Hearing. At the oral hearing, counsel for the Staff acknowledged that the exceptions by USEC were well taken, and had no objection to USEC's exceptions being incorporated into the Staff's Proposed Findings. See Tr. at 828-29. As modified to incorporate USEC's exceptions, the Board adopts the Staff's proposed findings of fact.

<sup>27</sup> "HTS-1" refers to Hearing Topic for Safety, number one. Each hearing topic is designated with either HTS (Safety) or HTE (Environmental).

<sup>28</sup> To address the Board's questions relating to facility description, the NRC Staff and USEC proffered expert witnesses who provided both written direct testimony (WDT) and oral testimony. The NRC Staff presented one witness, Mr. Yawar Faraz, Senior Project Manager, Technical Support Branch, Division of Fuel Cycle Safety and Safeguards (FCSS), Office of Nuclear Material Safety and Safeguards (NMSS). Mr. Faraz's professional qualifications are set out in NRC Staff Exhibit 54. See also NRC Staff [Written Direct] Testimony Related to HTS-1: Facility Description (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-1]. USEC presented four witnesses: (1) Mr. Gregory S. Corzine, Nuclear Safety Manager for the ACP, USEC; (2) Ms. Sandra L. Fout, Engineering Manager for the ACP, USEC; (3) Mr. Victor N. Lopiano, Vice President, American Centrifuge, USEC; and (4) Mr. Daniel A. Towne, Lead Engineer, Advanced Technology Operations Analysis Group, USEC. The professional qualifications of each of the USEC witnesses are set out in USEC Exhibit 1. See also

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minimize danger to life and property. In addition, pursuant to 10 C.F.R. § 70.65, USEC must submit with its application a description of its safety program — an Integrated Safety Analysis (ISA) — as delineated by 10 C.F.R. § 70.62.

Chapter 1 of the SER<sup>29</sup> describes the NRC Staff’s review of the information in USEC’s License Application with respect to the proposed facility and processes. In conducting its review of the facility and processes, the Staff followed the guidance in Chapter 1 of NUREG-1520, “Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility.”<sup>30</sup> NUREG-1520 lists the following acceptance criteria for determining whether an application conforms with the applicable regulatory requirements of 10 C.F.R. Parts 30, 40, and 70<sup>31</sup> as follows:

- (1) the application presents information at a level of detail that is appropriate for general familiarization and understanding of the proposed facility and processes;
- (2) the application summarizes the facility information contained in the ISA Summary, including descriptions of the overall facility layout on scaled drawings, the site’s geographical features and facility structural features and transportation right-of-ways, and the relationship of specific facility features to the major processes that will be ongoing at the facility;
- (3) the major chemical or mechanical processes involving licensable quantities of SNM are described in summary form, based in part on information in the ISA Summary, and including references to the building locations of major process components, brief descriptions of process steps, the chemical forms and maximum amounts of SNM in process, and the types, amounts and discharge points of waste materials; and
- (4) the application presents a summary identification of the raw materials, by-products, wastes and finished products of the facility.<sup>32</sup>

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[USEC’s Written Direct] Testimony Concerning Hearing Issue HTS-1 (Facility Description) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-1].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding facility description relative to USEC’s License Application.

<sup>29</sup> NUREG-1851, “Safety Evaluation Report for the American Centrifuge Plant in Piketon, Ohio” (Sept. 2006) (NRC Staff Exh. 1) [hereinafter SER].

<sup>30</sup> *See id.* at 1-1.

<sup>31</sup> NUREGs and Regulatory Guides (RG) serve as guidance and do not prescribe requirements. They are not substitutes for regulations and are not binding authority. *See Curators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 98 (1995); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986). Accordingly, in the Board’s review we focused on compliance with the regulations, not compliance with a particular NUREG or RG.

<sup>32</sup> NUREG-1520 at 1-1 to 1-2.

The NRC Staff confirmed that USEC adequately provided a summary description of the proposed ACP and processes, provided an ISA Summary, described the major chemical and mechanical processes involving licensable quantities of SNM, and identified the raw materials, by-products, wastes, and finished products expected at the facility.<sup>33</sup> Details regarding the facilities and procedures to be utilized at the ACP are described in the SER and were further described during the oral hearing. They need not be repeated here.<sup>34</sup>

Based on the acceptance criteria listed above, the NRC Staff found USEC had adequately described (1) the facility and processes so that the Staff has an overall understanding of the relationships of the features, and (2) the function of each feature.<sup>35</sup> As a result of our review of the record of this proceeding, the Board finds that the Staff's conclusions regarding the sufficiency of USEC's description of the proposed ACP and processes are sound and reasonable, and fully supported by the record of this proceeding.

## **HTS-2. DOE/NRC MEMORANDUM OF UNDERSTANDING<sup>36</sup>**

In its sufficiency review of the safety record the Board raised questions relating to a Memorandum of Understanding (MOU) currently being developed between DOE and NRC to address regulatory oversight of the ACP.<sup>37</sup> Because the proposed ACP will be located on a DOE site (the Portsmouth facility) — using existing buildings previously used by DOE — and the ACP will be operated under a lease agreement with DOE, DOE has regulatory oversight authority relating to USEC's activities performed on the leased areas. In addition, the NRC also has regulatory authority over the licensed activities in the leased areas. The Board's

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<sup>33</sup> See SER at 1-1 to 1-4.

<sup>34</sup> See Tr. at 134-225; NRC Staff Exhs. 3, 3A (Hearing Presentation for HTS-1).

<sup>35</sup> See SER at 1-3 to 1-4.

<sup>36</sup> To address the Board's questions relating to the DOE/NRC Memorandum of Understanding, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented one witness, Mr. Brian W. Smith, Chief, Enrichment and Conversion Branch, FCSS, NMSS. Mr. Smith's professional qualifications are set out in NRC Staff Exhibit 54. See also NRC Staff [Written Direct] Testimony Related to HTS-2: DOE/NRC Memorandum of Understanding (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-2]. USEC presented one witness, Mr. Peter J. Miner, Director, Regulatory and Quality Assurance for the ACP, USEC. Mr. Miner's professional qualifications are set out in USEC Exhibit 1. See also [USEC's Written Direct] Testimony Concerning Hearing Topic HTS-2 (DOE/NRC Memorandum of Understanding) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-2].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the DOE/NRC Memorandum of Understanding relative to USEC's License Application.

<sup>37</sup> See February 6 Order at 25.

inquiry focused on whether there are regulatory overlaps or gaps and whether such overlaps or gaps, if they were to exist, could have any adverse impact on the safe operation of the proposed facility.

The NRC Staff addressed the Board's inquiry by providing, in its written direct testimony, the following information: (1) the rationale for developing the MOU; (2) the anticipated schedule for completion of the MOU; (3) a latest copy of the draft MOU; and (4) a description of the principal areas covered in the MOU. Those principal areas include: the purpose and scope of the MOU; respective responsibilities of each agency prior to and after transition to NRC regulatory oversight, and following license termination; the interface between the DOE and NRC; and the procedures for the resolution of disputes between the two agencies.<sup>38</sup>

In response to Board questions at the oral hearing, the NRC Staff stated that the purpose of the MOU was to avoid duplication and to clearly delineate the responsibilities of DOE and NRC, which will help prevent wasted government resources by minimizing overlapping efforts by both agencies. Pursuant to the draft MOU, the NRC will continue to regulate the ACP through decommissioning and license termination, after which control of the site formerly used by the ACP will revert to DOE. In the unlikely event the MOU is not completed by the time of license issuance, the Staff emphasized that it will, nevertheless, be able to enforce all of the NRC regulations and requirements. However, the Staff fully expects to have the MOU in place by April 13, 2007, before the license would be issued.<sup>39</sup>

Based on the Board's review of the NRC Staff's written direct testimony and answers to our questions during the oral hearing regarding any potential changes in the MOU and the planned completion date,<sup>40</sup> the Board finds that the draft MOU is reasonably complete and reasonably ensures significant regulatory overlaps or gaps will not occur.

### **HTS-3. LICENSE CONDITIONS<sup>41</sup>**

As a part of the Board's sufficiency review of the safety record, we made the following inquiries regarding two proposed license conditions relating to

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<sup>38</sup> See NRC Staff WDT/HTS-2 at 2-7; see also NRC Staff Exh. 4A (MOU Between DOE and NRC, Cooperation Regarding the ACP in Piketon, Ohio).

<sup>39</sup> See Tr. at 279-82.

<sup>40</sup> See Tr. at 279-85.

<sup>41</sup> To address the Board's questions relating to the USEC's license conditions, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented two witnesses: (1) Dr. Stan Echols, Senior Project Manager, Enrichment and Conversion Branch, FCSS, NMSS; and (2) Mr. Jay L. Henson, Chief, Fuel Facility Inspection Branch 2, Division of Fuel Facility Safety, NRC Region II. The professional qualifications of both of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. See also NRC Staff [Written Direct] Testimony Related

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the boundary definitions for items relied on for safety (IROFS),<sup>42</sup> and financial assurance for decommissioning. Specifically, the Board asked: (1) the NRC Staff to provide references to the SER or FEIS that prompted these license conditions; (2) what are the potential deficiencies these license conditions are intended to rectify; and (3) how will the Staff monitor USEC compliance with these license conditions.<sup>43</sup> In its written direct testimony the Staff provided the requested information for all thirteen proposed license conditions that address matters of nuclear criticality safety, the fundamental nuclear material control program, IROFS, the facility security program, financial qualifications, and funding arrangements.<sup>44</sup>

At the oral hearing, the Board questioned how the NRC Staff planned to monitor compliance with the proposed license conditions and whether there would be any priority in monitoring different license conditions. In addition, the Board sought the specific details of a proposed license condition involving special authorizations and exemptions identified in section 1.2.5 of USEC's License Application.<sup>45</sup> The Staff explained the components of the inspection program that will be performed to ensure USEC's implementation of these conditions and described how compliance with the license conditions will concentrate on criticality safety, radiation safety, fire safety, and chemical safety aspects of plant operations, and will focus on review of the IROFS and on those compliance issues that have higher safety significance events.<sup>46</sup>

To further address the Board's questions regarding the license conditions, the NRC Staff provided a copy of USEC's request for special authorizations and exemptions as identified in section 1.2.5 of the License Application. The Staff

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to HTS-3: License Conditions (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-3]. USEC presented five witnesses: (1) Mr. John C. Barpoulis, Senior Vice President and Chief Financial Officer, USEC; (2) Mr. Gregory S. Corzine; (3) Mr. Donald J. Hatcher, Director of Risk Management, USEC; (4) Mr. Peter J. Miner; and (5) Mr. Mark D. Smith, Manager of Nuclear Licensing, USEC. The professional qualifications of each of the USEC witnesses are set out in USEC Exhibit 1. *See also* [USEC's Written Direct] Testimony Concerning Hearing Topic HTS-3 (License Conditions) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-3].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding license conditions relative to USEC's License Application.

<sup>42</sup>The Staff clarified that IROFS are those controls that are required to meet performance specifications and to achieve compliance from the unmitigated, unprevented, noncomplying accident sequence, e.g., reduce the likelihood of an accident. By their nature, IROFS require that a higher level of quality assurance and management measures be applied to them. Defense-in-depth items are additional controls used for backup. *See* Tr. at 386-87.

<sup>43</sup>*See* February 6 Order at 25.

<sup>44</sup>NRC Staff WDT/HTS-3 at 2-4.

<sup>45</sup>*See* Tr. at 311-15.

<sup>46</sup>*See* Tr. at 314-15; NRC Staff WDT/HTS-3 at 7.

testified that in its judgment the two special authorizations and five exemptions should be granted, and has done so through one of the license conditions that was added since the SER was issued.<sup>47</sup>

The Board's review of the NRC Staff's written direct testimony, together with the testimony at the oral hearing leads us to find that the Staff adequately identified and rectified potential deficiencies in USEC's License Application by imposing necessary license conditions. The Staff concluded that these license conditions will ensure the protection of public health and safety, and the Board finds that there is adequate basis in fact and logic for this conclusion. The Board also finds that the Staff has developed an adequate plan to monitor license condition compliance, and that the Staff's focus on criticality safety, radiation safety, fire safety, and chemical safety, and on its review of IROFS and higher safety significant events is well placed and appropriate.

#### **HTS-4. EXEMPTION REQUESTS<sup>48</sup>**

The Board's initial focus of inquiry regarding USEC's exemption requests was on the process used by the NRC Staff in evaluating whether the exemption should be granted, and on the potential impact to plant safety that these exemptions might have.<sup>49</sup> In its written direct testimony, the Staff indicated that USEC

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<sup>47</sup> See NRC Staff WDT/HTS-3 at 5-7; Tr. at 311-12. In addition to granting these special authorizations and exemptions, additional license conditions incorporate the "tie-downs" which reference relevant license application documents, clarify the requirements for fundamental nuclear material control, and require 120 days' notification by USEC to the NRC prior to the introduction of UF<sub>6</sub> into any module of the ACP.

<sup>48</sup> To address the Board's questions relating to the USEC's exemption requests, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented four witnesses: (1) Dr. Stan Echols; (2) Mr. Timothy C. Johnson, Senior Project Manager, Enrichment and Conversion Branch, FCSS, NMSS; (3) Mr. Michael A. Lamastra, Senior Project Manager (Health Physics), Fuel Manufacturing Branch, FCSS, NMSS; and (4) Dr. Christopher S. Tripp, Senior Nuclear Process Engineer (Criticality), FCSS, NMSS. The professional qualifications of each of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. See also NRC Staff [Written Direct] Testimony Related to HTS-4: Exemption Requests (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-4]. USEC presented five witnesses: (1) Mr. Jason E. Bolling, Senior Nuclear Criticality Safety Engineer for the ACP, USEC; (2) Mr. Donald Hatcher; (3) Mr. Peter J. Miner; (4) Mr. Mark D. Smith; and (5) Mr. Timothy D. Taulbee, Radiation Protection Manger for the Portsmouth Gaseous Diffusion Plant, United States Enrichment Corporation. The professional qualifications of each of the USEC witnesses are set out in USEC Exhibit 1. See also [USEC's Written Direct] Testimony Concerning Hearing Topic HTS-4 (Exemption Requests) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-4].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding exemption requests relative to USEC's License Application.

<sup>49</sup> See February 6 Order at 5-6, 26.

requested six exemptions<sup>50</sup> involving labeling of radioactive material under 10 C.F.R. § 20.1904 (two exemption requests); the 30-day reporting requirement in 10 C.F.R. § 70.50(c)(2); decommissioning funding requirements under 10 C.F.R. §§ 40.36(d) and 70.25(e); criticality monitoring under 10 C.F.R. § 70.24; and the liability insurance requirement under 10 C.F.R. §§ 40.31(l) and 70.22(n). For each exemption request, the Staff provided references to the SER where it performed a specific review of USEC's safety impact analysis, and provided its rationale for granting the request.<sup>51</sup> At the oral hearing, the Board asked clarifying questions regarding the legal and safety criteria used by the Staff in determining whether exemptions should be granted and the general process that the Staff followed in making those determinations.<sup>52</sup>

In accordance with 10 C.F.R. §§ 40.14 and 70.17, an exemption can be granted if it is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest. The Board initially examined the legal authority for granting of exemptions. With respect to the NRC Staff's legal authority for granting exemptions, in the oral hearing, both Staff and USEC counsel argued that, in their judgment, the exemptions at issue here are authorized by law because they are not expressly prohibited by statute or regulation. Although this representation was initially greeted with skepticism by the Board, after reflection, we concluded that this interpretation is proper.<sup>53</sup>

In regard to the second requirement for granting an exemption request — i.e., it will not endanger life or property or the common defense and security and is otherwise in the public interest — the NRC Staff witnesses stated that they reviewed all of the requested exemptions under this criterion, and provided examples of the process they followed in assessing USEC's requests for exemption from regulatory requirements associated with decommissioning financial assurance, criticality alarms in the cylinder yards, cylinder labeling, and time period for reporting events.<sup>54</sup>

After reviewing the NRC Staff's written direct testimony and its answers to our questions posed during the oral hearing, the Board finds that the Staff's review of USEC's exemption requests is consistent with 10 C.F.R. §§ 40.14 and 70.17. Specifically, we find that each of the exemptions is authorized by law and that the Staff's conclusion that these exemptions will not endanger life or property or

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<sup>50</sup> The Board notes that USEC has also applied for approval of an alternate method for addressing the requirements under 10 C.F.R. § 20.601(a), as discussed further in HTS-13 (Radiation Safety). *See infra* pp. 467-70.

<sup>51</sup> *See* NRC Staff WDT/HTS-4 at 3-7.

<sup>52</sup> Tr. at 320-32, 784-97.

<sup>53</sup> *See infra* pp. 463-64.

<sup>54</sup> Tr. at 324-32.

the common defense and security, and are otherwise in the public interest, is well supported by the record of the proceeding.

The Board has also examined whether these exemptions, taken collectively, will have a negative impact on safety, i.e., will these exemptions in combination interact with each other to produce an adverse impact on plant safety. The NRC Staff provided an explanation that only three exemptions are directly related to plant safety and that all these three exemptions are independent of each other.<sup>55</sup> Based on this, the Board finds the Staff's conclusion — i.e., when taken collectively these exemptions pose no adverse impact on plant safety — is supported by fact and logic.

#### **HTS-5. USEC'S COMMITMENTS<sup>56</sup>**

A preliminary Board review of the SER and USEC's License Application revealed a number of commitments made by USEC in its License Application. In our February 6 Order, the Board directed the NRC Staff to provide: (1) a list of all USEC's commitments that the Staff considered important to safety; (2) a description of the Staff's plan for monitoring these commitments; and (3) an explanation as to why some apparently significant safety commitments were not elevated to the status of license conditions.<sup>57</sup>

In response to the Board's inquiry, the NRC Staff provided a list of more than 200 USEC commitments the Staff considered important to safety, together with a brief description of, or reference to, the Staff's analyses thereof.<sup>58</sup> With respect to how these commitments will be monitored, the Staff, in its written direct testimony, indicated that all of USEC's commitments must be completed or in place prior to the commencement of plant operations. These commitments will then be reviewed and assessed as a part of the Staff's construction and

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<sup>55</sup> See NRC Staff WDT/HTS-4 at 8-9; Tr. at 328-31.

<sup>56</sup> To address the Board's questions relating to the USEC's commitments, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented three witnesses: (1) Dr. Stan Echols; (2) Mr. Yawar Faraz; and (3) Mr. Jay L. Henson. The professional qualifications of each of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. See also NRC Staff [Written Direct] Testimony Related to HTS-5: USEC's Commitments (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-5]. USEC presented one witness, Mr. Peter J. Miner. Mr. Miner's professional qualifications are set out in USEC Exhibit 1. See also [USEC's Written Direct] Testimony Concerning Hearing Issue HTS-5 (USEC's Commitments) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-5].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding USEC's commitments relative to USEC's License Application.

<sup>57</sup> February 6 Order at 26-27.

<sup>58</sup> See NRC Staff WDT/HTS-5 at 6-28, App. A at 1-7, App. B at 1-4.



preoperational inspection program. After license issuance, compliance will be addressed by the Staff's routine inspection program. Finally, the Staff stated that some safety-significant commitments were not elevated to specific license conditions but are incorporated into the license by "tie-down references." In this way, all of USEC's commitments reflected in its licensing documents will, in the judgment of the Staff, be enforceable, thereby making it unnecessary to include all of them as individual license conditions.<sup>59</sup>

At the oral hearing, the Board inquired further into how all of USEC's commitments have been "tied down" so that they will be enforceable, and sought information regarding the implementation schedule for these commitments. The NRC Staff indicated that, even though these commitments had not been explicitly "tied down" (i.e., there is no single document that lists each and every one of these commitments other than the lists submitted as part of the Staff's written direct testimony<sup>60</sup>), they are all enforceable through a catch-all license condition that was proposed after the SER was issued.<sup>61</sup> Although the list of commitments is long, the Staff is confident that it will be able to systematically follow them,<sup>62</sup> and the Board shares that confidence. The Staff reiterated that although there is no detailed implementation schedule, all commitments will be in place before plant operation begins.<sup>63</sup> Based on this, the Board finds the Staff's review of USEC's commitments and its plan for monitoring and enforcing compliance with these commitments is adequate.

#### **HTS-6. FINANCIAL CAPABILITY TO CONSTRUCT AND OPERATE THE ACP<sup>64</sup>**

Prior to granting a license of this type, it must be determined "that the applicant

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<sup>59</sup> See NRC Staff WDT/HTS-5 at 29.

<sup>60</sup> *Id.* at 6-28, App. A at 1-7, App. B at 1-4.

<sup>61</sup> See Tr. at 345; see also NRC Staff WDT/HTS-3 at 5-6.

<sup>62</sup> See Tr. at 346-47. Section 70.32(k) of 10 C.F.R. provides for a preoperation inspection in which the NRC Staff will address any changes or additions to equipment or procedures and ensure that all tie-down provisions have been satisfied.

<sup>63</sup> See Tr. at 343, 348; NRC Staff WDT/HTS-5 at 29.

<sup>64</sup> To address the Board's questions relating to financial capability, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented two witnesses: (1) Mr. Clayton L. Pittiglio, Senior Financial Analysis, Division of Policy and Rulemaking, Office of Nuclear Reactor Regulation (NRR); and (2) Dr. Ronald B. Uleck, Cost Analyst, Division of Policy and Rulemaking, NRR. The professional qualifications of both of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. See also NRC Staff [Written Direct] Testimony Related to HTS-6: Financial Capability (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-6]. USEC presented one witness, Mr. John C. Barpoulis. Mr. Barpoulis' professional qualifications are set out in USEC

(Continued)

appears to be financially qualified to engage in the proposed activities.’’<sup>65</sup> Accordingly, in our February 6 Order, the Board asked the NRC Staff to: (1) elaborate on how the financial statements made in Chapter 1 of the SER demonstrate USEC’s current and continuing access to the financial resources necessary to engage in the proposed activity;<sup>66</sup> (2) discuss the details of the management controls for each of the transition options from the current test program (i.e., the so-called Lead Cascade) to the ACP; and (3) relate each management control to the incremental construction funding and decommissioning costs.<sup>67</sup>

In its written direct testimony and during the oral hearing, the NRC Staff explained that it reviewed USEC’s financial qualifications<sup>68</sup> and, based on USEC’s status as a preexisting, publicly held, global, energy company with total assets of approximately \$2 billion, it concluded that USEC appeared financially qualified to build and operate the proposed ACP.<sup>69</sup> In addition, the Staff proposed to impose two license conditions to ensure USEC meets the financial qualification requirements for construction and operation of the ACP.<sup>70</sup>

First, a proposed license condition will require that construction of each incremental phase of the ACP (the scope of each phase to be determined by USEC) shall not begin until funding for that increment is available or committed. More specifically, under this license condition, USEC will be required to have in place commitments for equity contributions from USEC affiliates and/or partners, along with lending arrangements that solely, or cumulatively, will be sufficient to ensure funding for the increment’s construction costs before construction starts on that portion of the ACP. In addition, USEC will be required to make available

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Exhibit 1. *See also* [USEC’s Written Direct] Testimony Concerning Hearing Issue HTS-6 (Financial Capability) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-6].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding financial capability relative to USEC’s License Application.

<sup>65</sup> 10 C.F.R. § 70.23(a)(5).

<sup>66</sup> SER at 1-6 to 1-9 (following guidance in NUREG-1520 § 1.2.4.3(2), and explaining USEC’s approach for financing the construction and operation of the ACP).

<sup>67</sup> February 6 Order at 27.

<sup>68</sup> The NRC Staff’s review was performed in accordance with section 1.2.4.3 of NUREG-1520, in order to ensure compliance with 10 C.F.R. § 70.23(a)(5). *See* NRC Staff WDT/HTS-6 at 2-3.

<sup>69</sup> *See* NRC Staff WDT/HTS-6 at 2-4; Tr. at 506-36; *see also* SER at 1-7. As recently reported to the Securities and Exchange Commission, USEC currently has assets in excess of \$1.8 billion, with a net income for 2006 in excess of \$100 million. In addition, through the end of 2006, USEC invested more than \$370 million in the ACP project, which has been funded by cash from operations. *See* Tr. at 531-32.

<sup>70</sup> *See* SER at 1-7.

for inspection documentation of both the budgeted costs for that phase and the source of the funds available or committed to pay those costs.<sup>71</sup>

Second, a proposed license condition will require that the operation of the ACP shall not begin until USEC has in place either: (1) long-term contracts lasting 5 years or more that will provide sufficient funding for the estimated cost of operating the facility for the 5-year period; (2) documentation of the availability of one or more alternative sources of funds that provide sufficient funding for the estimated cost of operating the facility for 5 years; or (3) some combination of (1) and (2) that will provide sufficient funding to operate the facility for 5 years.<sup>72</sup>

Based on the NRC Staff's review of USEC's financial condition, as documented in the SER,<sup>73</sup> and as augmented by the written direct testimony and the testimony presented at the oral hearing, the Board is satisfied that the Staff's conclusion that the projected cost estimate<sup>74</sup> is reasonable, and that the record and the Staff's review, coupled with the license conditions that the Staff has proposed, adequately support the Staff's conclusion that the ACP is financially viable and that both the letter and spirit of 10 C.F.R. § 70.23(a)(5) have been satisfied.

#### **HTS-7. DECOMMISSIONING FUNDING<sup>75</sup>**

In accordance with 10 C.F.R. §§ 40.36 and 70.25, USEC submitted a decommissioning funding plan for the proposed ACP. The Board questioned the NRC Staff, *inter alia*, on: (1) the essential elements in the contemplated license condition to ensure adequacy of decommissioning funding; (2) specific details of

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<sup>71</sup> See *id.* at 1-7; see also Tr. at 514-22.

<sup>72</sup> See SER at 1-7.

<sup>73</sup> *Id.* at 1-6 to 1-7.

<sup>74</sup> See NRC Staff WDT/HTS-6 at 3; Tr. at 522-25.

<sup>75</sup> To address the Board's questions relating to the decommissioning funding, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented three witnesses: (1) Mr. John T. Buckley, Senior Project Manager, Decommissioning and Uranium Recovery Licensing Directorate, Office of Federal and State Materials and Environmental Management Programs; (2) Mr. Craig M. Dean, Project Manager, ICF International; and (3) Mr. Timothy C. Johnson. The professional qualifications Mr. Dean and Mr. Johnson are set out in NRC Staff Exhibit 54. Mr. Buckley's professional qualifications are set in NRC Staff Exhibit 54A. Mr. Buckley did not submit written direct testimony for Hearing Topic HTS-7. See NRC Staff [Written Direct] Testimony Related to HTS-7: Decommissioning Funding (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-7]. USEC presented two witnesses: (1) Mr. John C. Barpoulis; and (2) Mr. Mark D. Smith. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1. See also [USEC's Written Direct] Testimony Concerning Hearing Issue HTS-7 (Decommissioning Funding) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-7].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding decommissioning funding relative to USEC's License Application.

the proposed schedule for funding decommissioning; (3) the schedule for deconverting depleted UF<sub>6</sub> to depleted uranium oxide tails; (4) the rationale for updating the cost estimates for disposal of depleted uranium (DU) once full capacity is reached; (5) various details of the cost basis for DU disposal; and (6) the need for an exemption from requirements to fund all decommissioning costs at the time of licensing as specified in the regulations.<sup>76</sup> At the oral hearing, the Board asked additional questions to clarify points related to decommissioning, including the time line for incremental funding, the projected capacity of low-level waste disposal facilities at the time when they will be needed for the ACP, and the effects of a potential lack of capacity on decommissioning costs for DU disposal.<sup>77</sup>

The steps involved with decommissioning the ACP, which will take an estimated 6 years to complete, include in order: (1) planning and preparation; (2) process system purging and cleaning; (3) equipment dismantling and removal; (4) decontamination; (5) disposition of equipment and material; (6) disposal of wastes; and (7) completion of a final radiation survey. It is estimated that it will cost approximately \$1.35 billion for decontamination and decommissioning of the ACP.<sup>78</sup> The NRC Staff testified that it reviewed USEC's decommissioning funding plan in accordance with regulatory requirements of 10 C.F.R. §§ 40.36 and 70.25 using guidance provided in NUREG-1757, Vol. 3, "Consolidated NMSS Decommissioning Guidance — Financial Assurance, Recordkeeping, and Timeliness."<sup>79</sup>

Both NRC Staff and USEC counsel agree that, without an exemption, the controlling regulations — 10 C.F.R. §§ 40.36(d) and 70.25(e) — would require USEC to fully fund all of its estimated decommissioning costs at the time of licensing.<sup>80</sup> USEC, however, has submitted an exemption request to incrementally fund that portion of the decommissioning costs related to the phased installation of centrifuges and generation of DU tails for disposal. If this exemption is approved, USEC will fully fund decontamination and decommissioning costs for the ACP at the time it receives licensed material, except for (1) the removal and decontamination of centrifuges, which will be funded incrementally each January for the projected number of machines that will be installed and brought into operation during that year, and (2) the costs of DU disposition — i.e., deconversion of UF<sub>6</sub> to uranium oxide and the disposal of the DU — which will be based on the projected number of DU cylinders to be generated during the upcoming reassessment period.<sup>81</sup> The Staff concluded that this proposal does

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<sup>76</sup> See February 6 Order at 27-30.

<sup>77</sup> Tr. at 540-87, 797-808.

<sup>78</sup> See SER at 10-3 to 10-5, 10-8.

<sup>79</sup> See NRC Staff Exh. 64 (USEC Decommissioning Funding Exemption).

<sup>80</sup> See Tr. at 804-07.

<sup>81</sup> See SER at 10-13 to 10-14.

not endanger public health and safety, and is otherwise in the public interest.<sup>82</sup> The Staff testified that USEC will be under a continuing obligation to reassess and update its cost estimate to fund its decommissioning financial assurances so that decommissioning can be performed in a manner that is protective of public health and safety, regardless of changes in regulatory requirements for decommissioning, changes in the decommissioning cost estimate, or changes in the licensee's financial condition.<sup>83</sup>

As currently proposed, USEC will initially update its cost estimate annually to reflect the projection of new centrifuges that will be brought into operation during the next year, and the estimate of DU cylinders that will be generated during this period, as well as any other potential cost changes.<sup>84</sup> Once all centrifuges have been installed and the plant is at full capacity (i.e., the 3.5 million Separative Work Units (SWU)<sup>85</sup> per year referenced in the SER), cost estimates will be provided for the generation of DU cylinders on an annual forward-looking basis, while funding estimates for the remainder of decontamination and decommissioning will be updated at least every 3 years.<sup>86</sup> To handle unexpected costs, the NRC requires a 25% contingency factor on decommissioning cost estimates as recommended in NUREG-1757, which would provide for unforeseen events that may happen during operations or decommissioning that could increase the overall costs of this activity.<sup>87</sup>

USEC proposes to use a surety bond as the instrument to ensure sufficient funding at a level matching the updated decommissioning cost estimates. Under its proposal, 6 months before receipt of licensed material, USEC will be required to submit an updated cost estimate for decommissioning, and to submit a corresponding financial assurance instrument. USEC will not be allowed to receive licensed material at the ACP until the instrument has been reviewed and approved by the NRC Staff, and the final funding mechanism at the level of the updated cost estimate has been implemented.<sup>88</sup> As proposed, if USEC changes the funding mechanism during operations — i.e., to something other than a surety bond — it will have to submit the final language of the new mechanism to the NRC at least

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<sup>82</sup> See *id.* at 10-14.

<sup>83</sup> See NRC Staff WDT/HTS-7 at 17.

<sup>84</sup> See *id.*

<sup>85</sup> SWU is an indirect measure of the energy required to perform isotopic separation of uranium as calculated by a standard formula. For example, if you begin with 100 kilograms of natural uranium, it would take about 60 SWU to produce 10 kilograms of uranium enriched to 4.5% U-235. It takes approximately 100,000 SWU of enriched uranium to fuel a typical 1000-megawatt commercial nuclear reactor which, in turn could supply the electricity needs for a city of about 600,000 people for 1 year. See FEIS at 2-5.

<sup>86</sup> See NRC Staff Exh. 64; Tr. at 546.

<sup>87</sup> See Tr. at 558.

<sup>88</sup> See NRC Staff WDT/HTS-7 at 4-5.

6 months prior to the date on which the funding mechanism would be changed. This will allow adequate time for the Staff to review it in order to ensure that the new financial mechanism satisfies the regulations.<sup>89</sup>

Under its proposal, USEC will not provide for decommissioning funding prior to the receipt of fissionable material. The NRC Staff believes this is reasonable because the NRC does not regulate the decommissioning of the facility until there is a potential for it to be contaminated with licensed radiologic material that is brought to the site.<sup>90</sup>

As a plausible DU disposal strategy, USEC proposed to transfer the DU it generates to DOE for disposition. USEC's cost estimate is currently based on deconversion of UF<sub>6</sub> to uranium oxide at a plant presently being constructed by DOE at the Portsmouth facility, and for DU disposal at EnergySolutions' low-level waste facility (formerly Envirocare of Utah) near Clive, Utah.<sup>91</sup> The purpose of DOE's new deconversion plant at the Portsmouth facility is to handle its current inventory of DU, as well as to process future generations of DU, including from the ACP. As derived by USEC, the deconversion cost for the ACP is based on a calculation that uses a cost-estimating approach provided by DOE, but updated to reflect: (1) the volume of DU to be generated at the ACP; (2) changes from 2004 to 2006 dollars; and (3) the 25% contingency factor. The costs for DU disposal were based on quantity estimates calculated by USEC (and confirmed by the NRC Staff) and unit disposal costs obtained from EnergySolutions.<sup>92</sup> The costs for the disposal of DU tails differ between the SER and the FEIS. The number in the SER is the most recent estimate because it was published after the FEIS. As explained further under HTE-2 (Impacts of DU Disposal),<sup>93</sup> the differences in these cost estimates is small and does not affect the conclusions contained in the FEIS.<sup>94</sup>

Although the sequencing of processing ACP tails with existing DOE tails is not defined at this time, the NRC Staff testified that, in its judgment, it is reasonable to assume that all or some of the ACP tails may not reach the EnergySolutions' facility for 20 years or more.<sup>95</sup> While the Staff testified that it would be difficult to judge EnergySolutions' available disposal capacity for DU that far in the future, the Staff indicated that it felt reasonably certain that space would be available given the low volume of ACP DU compared to the currently available disposal

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<sup>89</sup> See Tr. at 553-54.

<sup>90</sup> See Tr. at 545, 548.

<sup>91</sup> See Tr. at 576; NRC Staff WDT/HTS-7 at 13-14.

<sup>92</sup> See NRC Staff WDT/HTS-7 at 9, 12-13.

<sup>93</sup> See *infra* pp. 479-80.

<sup>94</sup> See NRC Staff WDT/HTS-7 at 13.

<sup>95</sup> Tr. at 579-80.

capacity.<sup>96</sup> We agree, and find that the Staff's conclusion is well supported by the record of this proceeding.

In regard to the incremental funding, the Board questioned whether each year's estimated value included the amount of material remaining in the centrifuges at the end of the year.<sup>97</sup> The NRC Staff testified that each machine contains only "gram quantities of material."<sup>98</sup> Therefore, when the plant is at full capacity, the total quantity of residual material in the machines and associated piping will amount to about 1 ton of uranium that will need to be disposed of when the plant shuts down. Although the disposal cost for the residual tails has not been allocated to the cost funding estimates, the Staff testified the small expense could easily be handled by the contingency factor.<sup>99</sup> While the Board notes that the contingency factor is intended for unknown costs, we find that the expense for such a small quantity of DU is negligible. As a final point, the Staff testified that USEC's License Application is based on current NRC regulations, but that any changes in the regulations that could ultimately affect decommissioning will be applicable to USEC and the ACP.<sup>100</sup>

Based on the NRC Staff's and USEC's testimony, the Board finds that USEC has submitted a decommissioning funding plan for the proposed ACP that complies with 10 C.F.R. §§ 40.36(d) and 70.25(e). We find that the Staff's review of the funding basis for this plan has been adequate. We further find that the funding required for the most costly component — disposition of DU tails — is predicated on transferring DU to DOE, which is a plausible strategy allowed by statute.<sup>101</sup> The cost estimate for this proposal comprises (1) deconversion cost estimates adapted by USEC for DOE's Portsmouth deconversion facility presently under construction, and (2) disposal cost estimates based on EnergySolutions' unit quotes applied to the process flow rates stated by USEC in its License Application. The Board finds that these cost analyses by the Staff are sound, and that the funding mechanism proposed by USEC, i.e., a surety bond, meets the regulation.

The Board finds that the exemption allowing incremental funding for the phased installation of operational centrifuges and generation of DU tails is authorized by law (i.e., not prohibited).<sup>102</sup> Moreover, it does not otherwise endanger public health and safety nor is it against the public interest, because

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<sup>96</sup> Tr. at 584; *see also infra* pp. 479-80 (HTE-2 (Impacts of DU Disposal)).

<sup>97</sup> *See* Tr. at 568.

<sup>98</sup> *Id.*

<sup>99</sup> Tr. at 572-73.

<sup>100</sup> Tr. at 585.

<sup>101</sup> *See Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-06-22, 64 NRC 37, 39 & n.8 (2006).

<sup>102</sup> *See infra* pp. 463-64.

sufficient decommissioning funding under this proposal will be in place before the centrifuges are contaminated with uranium and before DU is generated. In addition to finding that the Staff's conclusion regarding the cost basis is reasonable, we find that the schedule for updating these estimates and the level of funding assurance demonstrate that any modification to disposal costs may be properly addressed in the decommissioning funding. As a result, we find the Staff's review is reasonable and appropriate.

The Board also concurs with the NRC Staff and USEC that any changes in regulations affecting decommissioning requirements that may impact the cost estimates are not grandfathered for the ACP and must be incorporated, as relevant, into annual updates.

## **HTS-8. ACCIDENT ANALYSES<sup>103</sup>**

### **A. Completeness and Reasonable Assurance**

As indicated in the SER, the NRC Staff performed an independent confirmatory analysis of USEC's evaluation of credible accidents that was contained in USEC's ISA.<sup>104</sup> The Board first questioned the Staff as to whether the list of credible accident sequences proposed by USEC was reasonably complete, and whether there are any credible accident sequences that were not considered by USEC but should have been.<sup>105</sup> In its written direct testimony, and in testimony during the oral hearing, the Staff indicated it has reasonable assurance that USEC's ISA

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<sup>103</sup>To address the Board's questions relating to accident analyses, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented six witnesses: (1) Dr. Stan Echols; (2) Mr. Michael A. Lamastra; (3) Ms. Norma Garcia Santos, Chemical Engineer, Enrichment and Conversion Branch, FCSS, NMSS; (4) Dr. Christopher S. Tripp; (5) Mr. William Troskoski, Senior Chemical Safety Technical Reviewer, FCSS, NMSS; and (6) Mr. Rex G. Wescott, Senior Fire Protection Engineer, FCSS, NMSS. The professional qualifications Dr. Echols, Mr. Lamastra, Ms. Santos, Dr. Tripp, and Mr. Wescott are set out in NRC Staff Exhibit 54. Mr. Troskoski's professional qualifications are set in NRC Staff Exhibit 54A. Mr. Lamastra did not submit written direct testimony for Hearing Topic HTS-8. *See* NRC Staff [Written Direct] Testimony Related to HTS-8: Accident Analysis (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTS-8]. USEC presented four witnesses: (1) Mr. Jason E. Bolling; (2) Mr. Gregory S. Corzine; (3) Mr. Peter J. Miner; and (4) Mr. Gene L. Pyzik, Senior Safety Analyst, WSMS Mid-America, LLC. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1. *See also* [USEC's Written Direct] Testimony Concerning Hearing Topic HTS-8 (Accident Analysis) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-8].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding accident analyses relative to USEC's License Application.

<sup>104</sup>SER Ch. 3, App. A.

<sup>105</sup>*See* February 6 Order at 6-8, 30-32.



is complete, and that, in its judgment, there are no additional credible accident sequences USEC should have, but did not, consider.<sup>106</sup>

The Staff's conclusion was based on "horizontal slice" and "vertical slice" reviews conducted during four onsite Staff reviews, which are described in Chapter 3 and Appendix A of the SER.<sup>107</sup> The "horizontal slice" reviews were in the areas of ISA methods, chemical safety, fire safety, radiation protection, criticality safety, structural and geotechnical design, instrumentation and control, and human errors. ISA procedures such as screening of accident sequences, development of accident likelihood estimates, and development of management measures for selected accident sequences were also evaluated.<sup>108</sup> The "vertical slice" reviews were made on selected accident sequences to determine the adequacy of the IROFS and defense-in-depth control strategies.<sup>109</sup> The Staff documented these reviews in Chapter 3 and Appendix A of the SER. Additional details of the ISA review are also contained in the remaining SER chapters and appendices.<sup>110</sup>

The NRC Staff indicated that during the course of its review, USEC added to its ISA — at the request of the Staff — accident sequences including several related to nuclear criticality.<sup>111</sup> The Staff pointed out that USEC included this additional information in its License Application and ISA Summary for the ACP.<sup>112</sup> Table A-1 of the SER sets out the IROFS and initial conditions that were modified as a result of the Staff's interaction with USEC.<sup>113</sup>

The Board also heard testimony during the oral hearing from USEC and the NRC Staff regarding the meaning of the terms "reasonable assurance" and "completeness," as they were used by USEC in its ISA and the Staff in the SER. USEC, in response to a Board question, indicated that while there is no absolute guarantee, it believes its thorough safety evaluation and analysis provides reasonable assurance.<sup>114</sup>

The Board finds that the Staff's conclusion that USEC provided reasonable assurance that its ISA is complete, and that there are no credible accident sequences that USEC should have considered, but did not, was based on an adequate Staff review and is supported by the record of this proceeding.

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<sup>106</sup> See NRC Staff WDT/HTS-8 at 3; Tr. at 365-70.

<sup>107</sup> SER Ch. 3, App. A at A-31 to A-36; see also NRC Staff WDT/HTS-8 at 2-3; Tr. at 479-82.

<sup>108</sup> See NRC Staff WDT/HTS-8 at 3.

<sup>109</sup> See *id.*

<sup>110</sup> See *id.* at 2-3.

<sup>111</sup> See SER at A-18; NRC Staff WDT/HTS-8 at 3.

<sup>112</sup> See SER at A-24; see also USEC Exh. 2 (License Application for the ACP); USEC Exh. 9 (ISA Summary for the ACP).

<sup>113</sup> SER at A-25 to A-27.

<sup>114</sup> Tr. at 495-98.



of “likelihood” were selected in an arbitrary fashion. The Board finds that the Staff’s reliance on the NUREG-1520 rationale for selecting a definition of “highly unlikely” as less than  $10^{-5}$  per year and the definition of “unlikely” as between  $10^{-4}$  and  $10^{-5}$  per year, is reasonable, based on the testimony presented by the Staff.<sup>120</sup>

#### **D. Criticality Accidents for Up to 10% Enrichment**

Finally, the Board inquired into the NRC Staff’s expectation that there will be no significant impact on the consequences of a generic criticality accident in changing from 4%<sup>121</sup> to 10% enrichment.<sup>122</sup> The Staff indicated in its written direct testimony and in response to Board questions at the oral hearing that, according to historical experience documented in LA-13638,<sup>123</sup> there is essentially no correlation between the enrichment level and the amount of energy released.<sup>124</sup> LA-13638 describes twenty-two process criticality accidents between 1953 and 1999 involving uranium systems (with enrichment between 6.5% and 93% U-235) and plutonium systems. The Staff stated that while the likelihood of criticality would be greater at higher enrichment, historical data indicated the consequences would not necessarily be worse.<sup>125</sup>

Additionally, to specifically demonstrate that there is no significant difference between consequences at 4%, 5%, and 10% enrichment levels, the NRC Staff contracted with Oak Ridge National Laboratory (ORNL) to perform an analysis,<sup>126</sup> which confirmed that there is no significant difference between consequences up to 10 percent enrichment in the generic criticality accidents evaluated by the Staff.<sup>127</sup>

In conclusion, the Board finds the NRC Staff has adequately reviewed USEC’s ISA, and has properly performed an independent confirmatory analysis of USEC’s evaluation of credible accidents. The Board also finds that the Staff’s review is of adequate breadth and depth. Finally, the Board finds that the Staff’s conclusion

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<sup>120</sup> See Tr. at 400; NRC Staff WDT/HTS-8 at 11.

<sup>121</sup> The 4% enrichment level was used as the basis for the generic criticality accident analysis previously developed in NUREG/CR-6410, “Nuclear Fuel Cycle Facility Accident Analysis Handbook” (see NRC Staff Exh. 25).

<sup>122</sup> See February 6 Order at 31.

<sup>123</sup> NRC Staff Exh. 22 (LA-13638, *A Review of Criticality Accidents* (2000 Version)).

<sup>124</sup> See NRC Staff WDT/HTS-8 at 12; Tr. at 401-05.

<sup>125</sup> See NRC Staff WDT/HTS-8 at 12-13.

<sup>126</sup> NRC Staff Exh. 24 (ORNL, *Estimated Production of Select Fission Products During a Criticality Accident* (Sept. 13, 2005)); NRC Staff Exh. 25 (NUREG/CR-6410).

<sup>127</sup> See Tr. at 401-05.

that USEC's ISA is reasonably complete, is supported by logic and fact, and is supported by the record of this proceeding.

### **HTS-9/HTE-3. ENVIRONMENTAL MONITORING<sup>128</sup>**

USEC's environmental monitoring program was developed to provide measures needed to protect the environment and the health and safety of the public as required by 10 C.F.R. Parts 20, 30, 40, 51, and 70. The NRC Staff provided a detailed description of USEC's monitoring program in Chapter 9 of the SER, and reviewed the adequacy of USEC's plan in accordance with the acceptance criteria contained in section 9.4.3.2 of NUREG-1520.

As recommended in NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," environmental monitoring was also addressed by the NRC Staff in its FEIS as part of its environmental measurements and monitoring program review.<sup>129</sup> USEC's activities are proposed to meet, in part, the intent of the Council on Environmental Quality (CEQ) regulations, which require a monitoring and enforcement program as part of the practicable means to avoid or minimize environmental harm from the selected alternative.<sup>130</sup>

The Staff described in section 9.3.2.4 of the SER and Chapter 6 of the FEIS how USEC will directly measure radiological and physiochemical gaseous and liquid effluents from its material handling and process buildings, and potential sources

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<sup>128</sup> To address the Board's questions relating to environmental monitoring, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented six witnesses: (1) Mr. Matthew D. Blevins, Senior Project Manager, Environmental and Performance Assessment Branch, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs; (2) Dr. Stan Echols; (3) Mr. Donald T. Hammer, Principal, ICF International; (4) Mr. Michael A. Lamastra; (5) Mr. Todd E. Stribley, Senior Associate, ICF International; (6) Dr. Raymond P. Wood, President, Trinity Engineering Associates, Inc. The professional qualifications of each of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. Mr. Lamastra and Dr. Wood did not submit written direct testimony for Hearing Topic HTS-9/HTE-3. See NRC Staff [Written Direct] Testimony Related to HTE-3/HTS-9: Environmental Monitoring (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTE-3/HTS-9]. USEC presented three witnesses: (1) Mr. Greg E. Fout, Environmental, Safety, and Health Coordinator for the ACP, USEC; (2) Mr. Peter J. Miner; and (3) Mr. Daniel A. Towne. The professional qualifications of each of the USEC witnesses are set out in USEC Exhibit 1. Mr. Towne did not submit written direct testimony for Hearing Topic HTS-9/HTE-3. See [USEC's Written Direct] Testimony Concerning Environmental Monitoring Issues (Mar. 12, 2007) [hereinafter USEC WDT/Environmental Monitoring].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding environmental monitoring relative to USEC's License Application.

<sup>129</sup> See NUREG-1748 at 5-25 to 5-30; FEIS at 6-1 to 6-12.

<sup>130</sup> 40 C.F.R. § 1505.2(c).

of radioactivity discharges to surface water. In addition, the Staff noted that USEC has proposed a radiological environmental measurement and monitoring program for potential receptors in the vicinity of the proposed ACP, including surface water, sediments, soils, vegetation, biota, wildlife, and crops.<sup>131</sup> The Staff determined that USEC prepared its radiological monitoring program for air and liquid effluents in accordance with the applicable regulatory guidelines, and that approved dispersion models will be used with air emissions and meteorological data to calculate the resulting environmental impacts.<sup>132</sup>

The Board questioned the NRC Staff regarding selected environmental monitoring issues. These included (1) the need and extent of groundwater monitoring and baseline data to ensure releases from the ACP could be separated from historic impacts, and (2) the extent that the Machine Cooling Water (MCW) and Liquid Effluent Control (LEC) systems might be a source of inadvertent radiological releases.<sup>133</sup>

In regard to the first issue, USEC does not propose to perform any groundwater monitoring as part of its regular program, in part because the existing wells are being monitored by DOE as part of its Resource Conservation and Recovery Act (RCRA)<sup>134</sup> corrective action program.<sup>135</sup> The chances for an inadvertent release of radioactivity to the groundwater from the ACP are very unlikely because, as USEC testified, there is no real source that could release radioactivity to groundwater. Excluding the sewer and storm water lines, USEC testified that there are no buried pipelines or tanks that could potentially contain radionuclides associated with the ACP besides tanks and piping of the LEC system.<sup>136</sup> The Staff testified that wells are available around the ACP and, as a backup, could be used as a quantification tool if events at the facility suggest the need to investigate potential inadvertent releases of radioactivity to groundwater.<sup>137</sup> To determine potential impacts from the ACP, baseline conditions in the groundwater have been defined as part of DOE's ongoing RCRA monitoring program.<sup>138</sup>

As to the second issue, the Board questioned the NRC Staff on the details of the MCW and LEC systems to ensure they are not potential sources of inadvertent

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<sup>131</sup> See FEIS at 6-2 (Table 6-2).

<sup>132</sup> See FEIS at 6-5; *see also* RG 4.15, "Quality Assurance for Radiological Monitoring Programs"; RG 4.16, "Monitoring and Reporting Radioactivity in Releases of Radioactive Materials in Liquid and Gaseous Effluents from Nuclear Fuel Processing and Fabrication Plants and Uranium Hexafluoride Production Plants."

<sup>133</sup> See February 6 Order at 17-18, 34-37; *see also* Tr. at 622-63.

<sup>134</sup> 42 U.S.C. § 6901-6908a (2000).

<sup>135</sup> See Tr. at 651; *see also* FEIS at 6-9.

<sup>136</sup> Tr. at 661.

<sup>137</sup> Tr. at 655-56.

<sup>138</sup> FEIS at 6-9; *see also* Tr. at 646-47.

releases of radioactivity to the environment. As summarized in HTE-5 (Liquid Effluent Control System),<sup>139</sup> the Board finds that the Staff's conclusion that the chances for radiological release to the environment from these systems are minimal is reasonable and adequately supported by the record of this proceeding. In addition, liquids that may contain radioactivity from the process buildings will be collected by the LEC system, sampled, and discharged in a manner appropriate to their quality.<sup>140</sup>

The Board evaluated the NRC Staff's review of environmental monitoring from both a safety and environmental perspective. Based on its review of the environmental monitoring program, the Board finds that the Staff has adequately reviewed USEC's plan in accordance with the provisions of NUREG-1520 and NUREG-1748, and has an adequate basis to conclude the proposed measures ensure protection of the environment and the health and safety of the public as required by 10 C.F.R. Parts 20, 30, 40, 51, and 70. Given the low levels of effluents expected from the ACP, and the small potential increment that the ACP will contribute to the existing impacts from the Gaseous Diffusion Plant (GDP) at Portsmouth, the Board finds that the Staff's conclusion that USEC's environmental monitoring program and its proposal to use effluent monitoring and modeling to demonstrate compliance with the regulations to be acceptable and consistent with section 9.4.3.2.2(2) of NUREG-1520 and the applicable regulations.

As an environmental issue, the Board finds that the monitoring program was prepared in accordance with NUREG-1748 and meets the intent of the CEQ regulations<sup>141</sup> for a monitoring program as part of the practicable means to avoid or minimize environmental harm from the proposed action. Although USEC does not propose any groundwater monitoring, the Board finds that it is clear from the testimony that the likelihood of inadvertent radiological releases from the ACP would be very small, and that groundwater monitoring is already being done by DOE. Groundwater monitoring wells exist around the ACP buildings for use in implementing a remedial investigation if conditions at the plant warrant such activity.

#### **HTS-10. ENRICHMENT PROCESS<sup>142</sup>**

As noted in the SER, the NRC Staff reviewed a 3.5 million SWU per year

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<sup>139</sup> See *infra* pp. 479-80.

<sup>140</sup> See *id.*

<sup>141</sup> 40 C.F.R. § 1505.2(c).

<sup>142</sup> To address the Board's questions relating to the enrichment process, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented

*(Continued)*

plant with a maximum of 10% enrichment, which is based on the description of the facility contained in USEC's License Application.<sup>143</sup> The Staff further noted that it will evaluate any increase in capacity that USEC may request through the change process identified in 10 C.F.R. § 70.72. The Board directed the Staff to describe the process by which it will review any planned increase in capacity<sup>144</sup> and to explain how, if at all, the public will be allowed to participate in that review.<sup>145</sup>

The NRC Staff witnesses explained that in order to increase the capacity of the ACP, USEC will undoubtedly be required to submit a license amendment pursuant to 10 C.F.R. § 70.72(c), and (d). Initially, the Board was advised by the Staff that the possession limits of SNM specified in the proposed license will need to be increased to accommodate any significantly increased capacity, and such an increase will require a license amendment. Likewise, we were advised that if the proposed increase would create the potential for new types of accident sequences, alter or create a IROFS, or utilize new technologies USEC was not familiar with, a license amendment pursuant to section 70.72(d) would be necessary.<sup>146</sup> In addition, the Board was assured by the Staff that even if USEC erroneously concluded a license amendment was not necessary, the NRC will have adequate notice of any increase in capacity because of the incremental funding provisions of the proposed license among others. The Staff assured the Board that the NRC could require USEC to submit a license amendment, if appropriate.<sup>147</sup> If a license amendment is required, public participation in this licensing process will be controlled by the rules relevant to license amendments. The regulations do not provide additional opportunities for public input for minor

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three witnesses: (1) Dr. Stan Echols; (2) Mr. Brian W. Smith; and (3) Dr. Christopher S. Tripp. The professional qualifications of each of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. Mr. Smith did not submit written direct testimony for Hearing Topic HTS-10. *See* NRC Staff [Written Direct] Testimony Related to HTS-10: Enrichment Process (Mar. 16, 2007) [hereinafter NRC Staff WDT/HTS-10]. USEC presented four witnesses: (1) Mr. Jason E. Bolling; (2) Mr. Gregory S. Corzine; (3) Mr. Greg E. Fout; (4) Mr. Peter J. Miner. The professional qualifications of each of the USEC witnesses are set out in USEC Exhibit 1. USEC did not submit any written direct testimony for HTS-10.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the enrichment process relative to USEC's License Application.

<sup>143</sup> SER at 1-1.

<sup>144</sup> The FEIS was prepared on the assumption that the ACP facility would be expanded to 7 million SWU per year. *See* FEIS at 2-5.

<sup>145</sup> *See* March 2 Order at 1.

<sup>146</sup> *See* Tr. at 232-33, 235-36.

<sup>147</sup> *See* Tr. at 231-32, 242, 258-59.

changes or modifications not requiring a license amendment, as described in 10 C.F.R. § 70.72.

Another matter on which the Board sought clarification at the oral hearing was a proposed license condition that would require USEC to provide 60 days' notice to the NRC before modifying its procedures to accomplish enrichment exceeding 5% U-235. The purpose of this license condition is to provide the NRC Staff with time to verify that processes will be conducted safely.<sup>148</sup> Specifically, we asked the Staff to discuss the depth of the safety review for 10% enrichment conducted in preparing the SER, and to: (1) summarize what additional analyses will be performed in the 60-day period allocated by the proposed license condition, and (2) explain why all the processes with 10% enrichment were not reviewed for the SER.<sup>149</sup>

The Board was advised by the NRC Staff that the ISA assumed that the plant will be operating at a maximum of 10% enrichment and, accordingly, all IROFS and necessary safety controls were defined in USEC's ISA Summary based on the 10% assumption. We were further assured that all fissile material operations were analyzed for up to 10% and that all IROFS and double contingency controls have been imposed on 10% enrichment operations. In summary, we were advised that safety analyses had been prepared as if the facility were to operate at 10% enrichment, and the proposed license condition providing for 60 days notification prior to increasing above 5% enrichment will be sufficient time for the Staff to identify any substantial health or safety concerns and take appropriate action.<sup>150</sup>

The Board finds that, although USEC has not yet developed all the relevant design aspects for the ACP that will be necessary to increase enrichment above 5%, the prevailing Staff view that USEC's License Application is in accordance with NUREG-1520 and 10 C.F.R. § 70.22(a) is reasonable, is supported by fact and logic, and provides adequate assurance of protection of the public health and safety.

#### **HTS-11. EXEMPTION REQUEST FOR LIABILITY INSURANCE<sup>151</sup>**

Pursuant to 10 C.F.R. §§ 40.31(l) and 70.22(n), a license application that seeks authorization to use source material or SNM in a uranium enrichment

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<sup>148</sup> See SER at 1-10.

<sup>149</sup> See March 2 Order at 1.

<sup>150</sup> See Tr. at 259, 263-64, 268-71.

<sup>151</sup> Counsel for the NRC Staff and USEC addressed the Board's questions relating to USEC's exemption request for liability insurance. See NRC Staff Response to Board's Additional Hearing Questions and Topics at 1-3 (Mar. 16, 2007) [hereinafter NRC Staff March 16 Brief]; USEC Inc. Brief on Licensing Board Hearing Topics Related to Liability Insurance and the DOE Indemnity (Mar. 15, 2007) [hereinafter USEC March 15 Brief].



facility must include the applicant's provisions for liability insurance. Specific liability insurance requirements for uranium enrichment facilities are specified in 10 C.F.R. § 140.13b, which further provides that proof of adequate liability insurance must be filed with the NRC, as required by 10 C.F.R. § 140.15, before a license for the operation of a uranium enrichment facility may be issued. USEC has not provided proof of liability insurance in its License Application; rather, it has sought an exemption from this requirement pursuant to 10 C.F.R. §§ 40.14 and 70.17.<sup>152</sup>

The NRC may grant USEC's request if it finds that the proposed exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest.<sup>153</sup> The NRC Staff has concluded that USEC's request meets the requirements of the regulations, and has determined that the requested exemption should be granted. As discussed below, the Board finds the Staff's conclusions are reasonable and well supported by the record of this proceeding.

The NRC Staff concluded that the ACP, which is to be constructed on land leased by USEC from DOE, has been determined by American Nuclear Insurers to be ineligible for insurance that fully covers operation of the ACP on this existing DOE site because the site is not a new "clean" site.<sup>154</sup> The Staff noted, however, that the lease agreement between USEC and DOE<sup>155</sup> provides that DOE will, as authorized by the Price-Anderson Act,<sup>156</sup> indemnify USEC against claims arising from nuclear incidents to the extent that USEC cannot obtain commercial insurance at reasonable rates.<sup>157</sup> Because the purpose of requiring USEC to obtain liability insurance will be fully satisfied by reason of DOE's indemnification of USEC, the Staff concluded that granting the requested exemption was in the public interest.<sup>158</sup>

The Board finds this decision by the NRC Staff to be well supported by the record and based in logic and fact. However, we questioned the Staff's conclusion that this exemption was "authorized by law."<sup>159</sup> In response to this legal issue,

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<sup>152</sup> See SER at 1-8, 1-13.

<sup>153</sup> See 10 C.F.R. §§ 40.14 and 70.17.

<sup>154</sup> NRC Staff March 16 Brief at 2.

<sup>155</sup> NRC Staff Exh. 5 (Supplemental Agreement No. 1 and Appendix 1 of the Lease Agreement Related to the ACP (Jan. 17, 2007)).

<sup>156</sup> AEA § 170, 42 U.S.C. § 2210.

<sup>157</sup> The limit of liability established by the Price-Anderson Act is \$10 billion (42 U.S.C. § 2210(d)(2)(B)), which is in excess of the liability insurance required under NRC regulations. Cf. 10 C.F.R. § 140.13b; see also NUREG/BR-0164 at 9. In addition, if insurance at any coverage level becomes commercially available, USEC will be required, pursuant to the proposed license condition, to secure such insurance to the extent that it is available.

<sup>158</sup> See SER at 1-8, 1-13.

<sup>159</sup> See Tr. at 785.

Staff counsel represented that, because DOE had legal authority to indemnify USEC against claims arising from nuclear incidents, the exemption under the Commission's regulations (10 C.F.R. §§ 40.14 and 70.17) was authorized by law.<sup>160</sup> Yet, the fact that DOE is authorized by law to indemnify USEC against claims arising from nuclear incidents is not logically dispositive of whether we are authorized by law to grant exemptions under NRC regulations. Accordingly, the Board rejects that argument.

For its part, USEC argued that the requested exemption was "authorized by law" because there is no legal prohibition against granting the exemption.<sup>161</sup> Although the Board originally viewed this argument with skepticism (i.e., questioning whether "authorized by law" and "not expressly prohibited" are logically synonymous), we now accept it. Specifically, the Board concludes that we must infer that the proposed exemption is implicitly "authorized by law" if all of the conditions listed therein are met (i.e., will not endanger life or property or the common defense and security, and is otherwise in the public interest) and no other provision prohibits, or otherwise restricts, its application. To do otherwise would render these two exemption provisions meaningless, which violates elementary rules of construction that the language of a regulation should not be read to destroy itself<sup>162</sup> and a provision should not be read in a way that is inconsistent with its purpose.<sup>163</sup> In addition, it appears that the NRC has traditionally read the language "authorized by law" to be the functional equivalent of "not prohibited by law."<sup>164</sup> Accordingly, the Board concludes that these exemptions are authorized by law.

#### **HTS-12. ISA AND ISA SUMMARY: SUFFICIENCY OF REVIEW INFORMATION<sup>165</sup>**

The Board reviewed the level of detail utilized by the NRC Staff in its assessment of safety aspects relating to the ACP, with emphasis on the impact

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<sup>160</sup> See NRC Staff March 16 Brief at 2.

<sup>161</sup> See USEC March 15 Brief at 3.

<sup>162</sup> See *Citizens Bank of Maryland v. Strumpf*, 516 U.S. 16, 20 (1995).

<sup>163</sup> See *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 668-69 (1990); *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49, 59 (1987).

<sup>164</sup> See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), DD-90-8, 32 NRC 469, 488 (1990); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-841, 24 NRC 64, 99 (1986); *United States Department of Energy* (Clinch River Breeder Reactor Plant), CLI-82-83, 16 NRC 412, 422-25 (1982); *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 3 and 5), CLI-77-11, 5 NRC 719, 722 (1977).

<sup>165</sup> To address the Board's questions relating to the ISA and ISA Summary, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff

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from a potential increase above 5% enrichment. This was done to examine the logical and factual support for the Staff's conclusion that there are reasonable assurances that no unresolved safety issues remain, and that the Staff has a procedure in place before operations commence to address any unanticipated safety conditions that might become evident after the license is granted.<sup>166</sup> The Staff stated that the prevailing Staff view is that there is reasonable assurance that all credible accident sequences have been identified through the use of the Preliminary Hazard Analysis procedure laid out in NUREG-1513, "Integrated Safety Analysis Guidance Document." The Staff further advised the Board that "horizontal reviews" were performed by Staff members using their specialized expertise, knowledge of the processes, and experience with similar facilities, and that this process resulted in the identification of other possible accident sequences that it then required USEC to analyze. The Staff illustrated the steps it used to categorize the likelihood of an event, analyze an event, quantify the likely frequency of the event, and identify actions to mitigate the consequences of an event.<sup>167</sup>

The NRC Staff noted, however, that there are several NRC Staff employees who believe that there was not a sufficient level of review of the ACP Application.<sup>168</sup> The Board's inquiries into the Differing Professional Opinion (DPO)<sup>169</sup> submitted by these employees and findings relating to the DPO Process are discussed below.

As previously discussed in HTS-10 (Enrichment Process),<sup>170</sup> the NRC Staff

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presented five witnesses: (1) Mr. Jay L. Henson; (2) Mr. Timothy C. Johnson; (3) Mr. Brian W. Smith; (4) Mr. William Troskoski; and (5) Mr. Rex G. Wescott. The professional qualifications of Mr. Henson, Mr. Johnson, Mr. Smith, and Mr. Wescott are set out in NRC Staff Exhibit 54. Mr. Troskoski's professional qualifications are set out in NRC Staff Exhibit 54A. Mr. Troskoski did not submit written direct testimony for Hearing Topic HTS-12. *See* NRC Staff [Written Direct] Testimony Related to HTS-12: ISA and ISA Summary of Review Information (S2-1) (Mar. 16, 2007) [hereinafter NRC Staff WDT/HTS-12]. USEC presented two witnesses: (1) Mr. Robert M. Bernero, Independent Nuclear Safety Consultant for USEC; and (2) Mr. Peter J. Miner. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1. *See also* [USEC's Written Direct] Testimony Concerning Hearing Issue HTS-12 (ISA and ISA Summary: Sufficiency of Review of Information) (Mar. 12, 2007) [hereinafter USEC WDT/HTS-12].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the ISA and ISA Summary relative to USEC's License Application.

<sup>166</sup> *See* March 2 Order at 2-4.

<sup>167</sup> *See* Tr. at 366-86.

<sup>168</sup> *See* Tr. at 367-68.

<sup>169</sup> NRC Staff Exh. 62 (Differing Professional Opinion (Nov. 15, 2006)); Supplement to NRC Staff February 20 Response (Feb. 26, 2007) (Response of Four NRC Staff Members to Question Pertaining to Sufficiency of Review Information).

<sup>170</sup> *See supra* pp. 460-62.

advised the Board that, in regard to enrichments greater than 5%, the ISA was based on the plant operating at 10% enrichment. USEC confirmed that all IROFS and necessary safety controls have been identified in its ISA Summary for the plant operating at 10% enrichment.<sup>171</sup> The Staff agreed with this representation by USEC, assured the Board that all fissile material operations were analyzed for up to 10% enrichment, and verified that all IROFS and double contingency controls have been imposed on 10% enrichment operations.<sup>172</sup>

The NRC Staff stated during the oral hearing<sup>173</sup> that there will be only limited situations that could lead to criticality at the ACP, even at 10% enrichment, due to the lack of a moderator with the dry system proposed for the facility, and unfavorable geometry for criticality with the equipment for most of the processes. In the Staff's judgment, criticality could only occur if there was a major breach in a large product cylinder of enriched uranium (e.g., 10-ton cylinders) with water sprayed directly into the breach. This sequence of events would be highly unlikely and, if it did occur, the lethal radius of impact would be a very localized event, i.e., limited to about 15 feet around the breached cylinder.

As noted above, several employees filed a formal DPO regarding the level of information needed for 10 C.F.R. Part 70 licensing review. The Board inquired regarding the procedures associated with the DPO Process. Specifically, it questioned whether there is justification for delaying the issuance of the SER until the completion of the DPO Process, and how the licensing process may be impacted if the DPO is resolved in favor of the DPO submitters.<sup>174</sup>

In its written response to the Board's March 2 Order, and in answering Board questions during the oral hearing, NRC Staff counsel indicated that, while the DPO filing requires an agency review, the DPO does not supersede or subvert the discretionary authority of the agency and that the DPO program does not preclude the agency from conducting licensing reviews or making licensing decisions. The function of the DPO program, counsel further asserted, is to provide a mechanism for an individual NRC Staff member to raise views differing from those prevailing in the agency, and not to supersede the ordinary decisionmaking process of the agency.<sup>175</sup> The Board finds this explanation adequate and sees no reason to delay our decision until the DPO process has been completed.

Finally, the NRC Staff stated that in the event the DPO is resolved in favor of the DPO submitters, the Staff at that time will determine whether it needs to modify the SER to be consistent with the revised agency position. The Staff indicated that this potential change in agency policy would be no different from

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<sup>171</sup> See Tr. at 259.

<sup>172</sup> See NRC Staff WDT/HTS-10 at 3; Tr. at 264.

<sup>173</sup> Tr. at 441-44.

<sup>174</sup> See March 2 Order at 2.

<sup>175</sup> See NRC Staff March 16 Brief at 3-7; Tr. at 778-84.

any other instance outside of the DPO process.<sup>176</sup> The Board finds this explanation credible.

### **HTS-13. RADIATION SAFETY<sup>177</sup>**

Regulatory requirements applicable to Radiation Protection (RP) are presented in 10 C.F.R. § 70.22(a)(8), which requires that applications contain “[p]roposed procedures to protect health and minimize danger to life or property.” To determine compliance with 10 C.F.R. § 70.22(a)(8), the Staff compared the information provided in USEC’s License Application related to RP against the acceptance criteria listed in NUREG-1520.<sup>178</sup>

USEC’s RP program must address the occupational RP measures set out in 10 C.F.R. Parts 19, 20, and 70. Specifically, 10 C.F.R. § 20.1101 requires that:

- (a) Each licensee shall develop, document, and implement a radiation protection program commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the provisions of [10 C.F.R. Part 20]. . . .
- (b) The licensee shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).
- (c) the licensee shall periodically (at least annually) review the radiation protection program content and implementation.

In determining whether USEC’s RP program meets the acceptance criteria, the NRC Staff reviewed USEC’s request for exemptions from 10 C.F.R. § 20.1904, which requires that each container of licensed material bears a durable, clearly visible label such that the radionuclide(s) present, the quantity of radioactivity, radiation levels, kinds of materials, mass, and enrichment are identified.<sup>179</sup> USEC represented that it will be impractical to label each and every container in restricted

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<sup>176</sup> See NRC Staff March 16 Brief at 6-7.

<sup>177</sup> To address the Board’s questions relating to radiation safety, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented one witness, Mr. Michael A. Lamastra. Mr. Lamastra’s professional qualifications are set out in NRC Staff Exhibit 54. The NRC Staff did not submit any written direct testimony for Hearing Topic HTS-13. USEC presented two witnesses: (1) Mr. Peter J. Miner; and (2) Mr. Timothy D. Taulbee. The professional qualifications of both of USEC’s witnesses are set out in USEC Exhibit 1. USEC did not submit any written direct testimony for Hearing Topic HTS-13.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding radiation safety relative to USEC’s License Application.

<sup>178</sup> See NUREG-1520 at 4-5.

<sup>179</sup> See SER at 4-15; see also *supra* pp. 444-46 (HTS-4 (Exemption Requests)).

areas, and instead proposes to have one sign posted in restricted areas stating that every container may contain radioactive material. USEC advised that it will perform a survey when containers are removed from contaminated, or potentially contaminated areas to prevent the spread of contamination. In addition, USEC requested that the UF<sub>6</sub> feed, product, and DU cylinders not be labeled because they will be readily identifiable due to their size and unique construction. USEC also stated that the UF<sub>6</sub> cylinders will constantly be attended by qualified radiological workers during movement.<sup>180</sup>

The NRC Staff reviewed USEC's exemption request and its proposal for an alternative process to ensure the containers are not mishandled, and found that USEC's request will not pose an undue hazard to life or property. However, the Staff stated that, while USEC requested two exemptions to the labeling requirements under 10 C.F.R. § 20.1904, only one exemption is needed; the exemption from labeling containers located in the Restricted Areas within the ACP. As explained by the Staff, the exemption request relating to the labeling of UF<sub>6</sub> cylinders during movement is not needed because 10 C.F.R. § 20.1905(c) already exempts containers from the provisions of 10 C.F.R. § 20.1904 if the containers are attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the established limits.<sup>181</sup>

Seeking clarity, the Board asked the NRC Staff to explain its interpretation of "containers attended by an individual," describe the specific details of USEC's proposed program for attending the containers, and demonstrate that this program meets the exemption requirements of 10 C.F.R. § 20.1905(c). In addition, the Board asked the Staff to elaborate on the experience at other facilities that have received the labeling exemption, specifically showing how that experience demonstrates that USEC's request will provide an equal margin of safety and will not pose an undue hazard to individuals.<sup>182</sup>

The Staff explained that the regulations do not provide any definition of the term "containers attended by an individual," so it used a common understanding that this phrase meant "either physically present or able to control access to the container."<sup>183</sup> The Staff witness affirmed that, as the NRC interprets this provision, the requirement that the container be attended can be satisfied either by physical proximity or, if the container is attended in a remote way, by an individual having the capacity at all times to give notice of the potential hazard

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<sup>180</sup> See SER at 4-15.

<sup>181</sup> See NRC Staff February 20 Response at 39.

<sup>182</sup> See March 2 Order at 4.

<sup>183</sup> Tr. at 289-90.

to anyone who is coming close to the container.<sup>184</sup> The Staff also represented that all the currently operating fuel facilities have this exemption.<sup>185</sup>

As authorized by 10 C.F.R. § 20.1601(c), USEC has also requested that, in lieu of the requirements of 10 C.F.R. § 20.1601(a), it be allowed to have each High Radiation Area conspicuously posted “Caution, High Radiation Area,” and entrance into the area controlled by a Radiation Work Permit (RWP). USEC also proposed that it will implement physical and administrative controls to prevent inadvertent or unauthorized access to High and Very High Radiation Areas. Upon reviewing this request, the Staff found USEC’s use of conspicuously posted signs, in conjunction with the Applicant’s RWP program, to be an acceptable alternative to the express requirements of section 20.1601(a).<sup>186</sup>

USEC also must have an ALARA<sup>187</sup> program that conforms with 10 C.F.R. § 20.1101, by maintaining occupational exposures and environmental releases as low as is reasonably achievable. Under criteria specified in NUREG-1520, an applicant’s ALARA program will be acceptable if it provides data and information demonstrating it meets the following commitments: (1) establish a comprehensive, effective, and written ALARA program; (2) prepare policies and procedures to ensure that occupational radiation exposures are maintained ALARA and that such exposures are consistent with applicable regulations; (3) outline specific ALARA program goals, establish an ALARA program organization, and have written implementation procedures; (4) establish an ALARA Committee or equivalent organization to ensure that the occupational dose limits of 10 C.F.R. Part 20 are not exceeded under normal operations; (5) use the ALARA program as a mechanism to facilitate interaction between RP and operations personnel; and (6) regularly review and revise the ALARA program goals and objectives and incorporate changes that could reduce radiation exposure at a reasonable cost.<sup>188</sup>

Based on its review, as described in the SER, the NRC Staff concluded that USEC’s License Application adequately describes the goals, organization, and structure of the ALARA program, as well as USEC’s commitment to prepare policies and procedures for implementing the facility design and operations, thereby ensuring that occupational exposures will be maintained ALARA.<sup>189</sup>

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<sup>184</sup> Tr. at 294.

<sup>185</sup> Tr. at 301.

<sup>186</sup> See SER at 4-16.

<sup>187</sup> See 10 C.F.R. § 20.1003. ALARA is an acronym for “as low as reasonably achievable,” and in the context of radiation protection, it means making every reasonable effort to maintain exposure to radiation as far below the dose limits set out in 10 C.F.R. Part 20 as is possible, consistent with the activity for which the licensed activity is undertaken. 10 C.F.R. § 20.1101(b).

<sup>188</sup> NUREG-1520 at 4-3 to 4-4.

<sup>189</sup> See SER at 4-3 to 4-5.

As a result of its review of USEC's RP program, the NRC Staff concluded that USEC has established and will maintain an acceptable RP program that includes: (1) an effective documented program to ensure that occupational radiological exposures are ALARA; (2) an organization with adequate qualification requirements for RP personnel; (3) approved written RP procedures and RWPs for RP activities; (4) RP training for all personnel who have access to restricted areas; (5) a program to control airborne concentrations of radioactive material with engineering controls and respiratory protection; (6) a radiation survey and monitoring program; and (7) other programs to maintain records, report to the NRC in accordance with Parts 20 and 70, and correct for upsets at the facility. Therefore, the Staff concluded that USEC's RP program meets the requirements of 10 C.F.R. Parts 19, 20, and 70, such that conformation to the provisions of the License Application will ensure safe operation.<sup>190</sup>

USEC also agreed to additional recordkeeping and reporting commitments, in accordance with 10 C.F.R. Part 20, Subparts L and M, in addition to 10 C.F.R. §§ 70.61 and 70.74. Acceptance criteria for the Staff's review of these additional program requirements are found in NUREG-1520, which provides that an application is acceptable if it contains data and information that meet commitments to: (1) maintain records of the RP program, radiation survey results, and results of its corrective action program; (2) establish a program to report to the NRC, within the time specified in 10 C.F.R. §§ 20.2202 and 70.74, any event that results in an occupational exposure to radiation exceeding the dose limits in 10 C.F.R. Part 20; (3) submit to the NRC an annual report, as required by 10 C.F.R. § 20.2206(b); and (4) refer to its corrective action program occupational exposures that exceed the dose limits in 10 C.F.R. Part 20, Appendix B, or are required to be reported per 10 C.F.R. § 70.74, and report the corrective action program results to the NRC.<sup>191</sup> In its review, the Staff determined that USEC's RP program meets these additional recordkeeping and reporting requirements as well as all the additional criteria.<sup>192</sup>

Based on the above, the Board finds the NRC Staff has a reasonable basis in fact and logic for its conclusions with respect to USEC's RP program to support license issuance and that the labeling exemption should be granted as proposed by the Staff.

#### **IV. REVIEW OF NEPA-RELATED MATTERS**

The Commission has directed the Board to determine whether the environ-

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<sup>190</sup> See *id.* at 4-16.

<sup>191</sup> NUREG-1520 at 4-12.

<sup>192</sup> See SER at 4-16.



mental review conducted by the NRC Staff pursuant to 10 C.F.R. Part 51 has been adequate; to verify that the requirements of NEPA § 102(2)(A), (C), and (E) have been complied with; to independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; and to determine whether a license should be issued, denied, or conditioned to protect the environment.<sup>193</sup>

In the Board's February 6 Order, we presented three hearing topics and posed more than forty questions relating to the NRC Staff's environmental review.<sup>194</sup> As a followup to the Staff's response,<sup>195</sup> the Board defined three more environmental hearing topics and asked additional clarifying questions.<sup>196</sup> The six resulting environmental hearing topics are discussed in detail below. The responses to the Board's specific questions are addressed within the discussion of the relevant hearing topic.

#### **HTE-1. PURPOSE AND NEED FOR THE FACILITY<sup>197</sup>**

The purpose and need of the proposed ACP is described in section 1.3 of the FEIS in accordance with the guidance provided in NUREG-1748. As described in the FEIS, the purpose of the proposed action is to license USEC to construct and operate the ACP at the Portsmouth facility. For its environmental analysis, USEC proposes to enrich uranium up to 10% by weight of U-235 by the gas centrifuge process at a nominal annual production capacity of 3.5 million SWU with a potential increase to 7 million SWU. As referenced in the FEIS, and presented in oral testimony during the hearing, this plant will, *inter alia*, satisfy

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<sup>193</sup> 69 Fed. Reg. at 61,411-12.

<sup>194</sup> February 6 Order at 16-23, 32-37.

<sup>195</sup> See generally NRC Staff February 20 Response.

<sup>196</sup> See March 2 Order at 4-7.

<sup>197</sup> To address the Board's questions relating to purpose and need of the ACP facility, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented three witnesses: (1) Mr. Matthew D. Blevins; (2) Dr. Stan Echols; and (3) Mr. Stephen D. Wyngarden, Senior Vice President, ICF International. The professional qualifications of each of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. See also NRC Staff [Written Direct] Testimony Related to HTE-1: Purpose and Need of the Facility (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTE-1]. USEC presented two witnesses: (1) Mr. Philip G. Sewell, Senior Vice President, American Centrifuge & Russian, HEU, USEC; and (2) Mr. Peter J. Miner. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1. See also [USEC's Written Direct] Testimony Concerning Hearing Topics HTE-1 (Purpose and Need of Facility), HTE-4 (Final Balance Among Conflicting Factors), and HTE-6 (Cost-Benefit Analysis) (Mar. 12, 2007) [hereinafter USEC WDT/HTE-1, 4, and 6].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the purpose and need of the ACP facility relative to USEC's License Application.

the need for enriched uranium (EU) to: (1) provide domestic supplies of EU for national energy security, and (2) fulfill electricity requirements with EU for fuel fabrication produced in a more reliable and economical manner than currently done in the United States at existing GDPs or under the Megatons-to-Megawatts program.<sup>198</sup>

In its independent review, the Board questioned: (1) how the ACP will fulfill the domestic need for EU without exclusive arrangements with domestic utilities; (2) what effect the production from the recently licensed Louisiana Energy Services, L.P. enrichment facility (LES)<sup>199</sup> in New Mexico will have on the need for the ACP; and (3) whether the need for 10% enrichment was established in USEC's License Application.<sup>200</sup>

The NRC Staff demonstrated there is a domestic and foreign need for EU, notwithstanding the new production from LES, and identified a further shortfall in supply should the Megatons-to-Megawatts program not be renewed after its scheduled termination in 2013.<sup>201</sup> As stated by the Staff, USEC estimated that its 2005 market share constituted 53% of North America utility demand, and 27% of the world market share. Foreign sources currently supply as much as 86% of the domestic demand for EU. These facts, according to the Staff, illustrate the significant need for additional enrichment capacity for domestic markets.<sup>202</sup> The Staff also discussed the large resource requirements of a GDP, including electricity, freon, and cooling water. As demonstrated by the Staff, the operating costs per SWU for the proposed gas centrifuge project are 20% of the operating costs for a GDP due in large part to the high electrical demands of the gaseous diffusion process.<sup>203</sup> Based on these facts, the need for a reliable and economic source of EU available to U.S. markets is apparent to the Board.

The NRC Staff noted that USEC proposed that it be authorized to enrich uranium up to 10% U-235 in order to provide for greater flexibility in its business plans and to meet potential markets that may develop with future technology improvements, even though there is no commercial demand for EU at the 10%

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<sup>198</sup> See FEIS at 1-3 to 1-7. The Megatons-to-Megawatts program is an agreement between the United States and Russia that calls for Russia to convert 550 tons of highly enriched uranium from dismantled nuclear warheads into low-enriched uranium. The United States Enrichment Corporation (a subsidiary of USEC), purchases the enriched portion of the "down blended" material, and after ensuring it meets required specifications, sells it to its electric utility customers for fuel in commercial nuclear power plants. See *id.* at 1-4.

<sup>199</sup> *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-06-17, 63 NRC 747, 828 (2006).

<sup>200</sup> See February 6 Order at 32; see also Tr. at 679-82.

<sup>201</sup> See FEIS at 1-3 to 1-5; see also NRC Staff WDT/HTE-1 at 4-5.

<sup>202</sup> See FEIS at 7-7 to 7-8; see also NRC Staff February 20 Response at 70.

<sup>203</sup> See FEIS at 1-6 to 1-7, 7-8 to 7-9.

level at this time.<sup>204</sup> During the oral hearing, USEC testified that there may be a future need for higher enrichments to meet the potential requirement for more efficient, less expensive, and longer fuel cycles that will be associated with future generations of reactor designs.<sup>205</sup> Since, however, there is little additional environmental impact when changing from 5% to 10% enrichment, it is the Staff's opinion that a significant demonstration of need is not necessary to justify a 10% enrichment level. It is the Staff's opinion that NEPA requires only that the purpose and need section consist of a brief statement to help define an appropriate range of alternatives to be discussed.<sup>206</sup>

In our independent review, the Board finds that the purpose and need section in the FEIS is simply a statement of what the proposed federal action will accomplish and a description of the underlying need for this action. It helps guide the development of reasonable alternatives, which can satisfy the objectives of USEC in accordance with the Commission's review guidance documents.<sup>207</sup> Although not a specific NEPA evaluation criterion, the Board finds that the proposed ACP will provide an additional supply of reliable, economical EU that will be available to domestic utilities to meet their current needs. In addition, the ACP will also have the flexibility to provide enrichment up to 10% U-235 if technology improvements allow for more efficient fuel utilization at these levels in the future.<sup>208</sup>

## **HTE-2. IMPACTS OF DU DISPOSAL<sup>209</sup>**

In its independent analysis of conflicting factors, the Board questioned the NRC Staff on its evaluation of the environmental impacts associated with the

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<sup>204</sup> See Tr. at 678, 680.

<sup>205</sup> Tr. at 700.

<sup>206</sup> See Tr. at 681-82.

<sup>207</sup> See NUREG-1748 at 5-5.

<sup>208</sup> See Tr. at 699-700.

<sup>209</sup> To address the Board's questions relating to the impacts of DU disposal, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented five witnesses: (1) Mr. Matthew D. Blevins; (2) Mr. Donald T. Hammer; (3) Mr. Timothy C. Johnson; (4) Dr. Michael Tokar, Retired from NRC; and (5) Dr. Raymond P. Wood. The professional qualifications of Mr. Blevins, Mr. Hammer, Mr. Johnson, and Dr. Wood are set out in NRC Staff Exhibit 54. Dr. Tokar's professional qualifications are set out in NRC Staff Exhibit 54A. Mr. Hammer and Dr. Tokar did not submit written direct testimony for Hearing Topic HTE-2. See NRC Staff [Written Direct] Testimony Related to HTE-2: Impacts of DU Disposal (Mar. 5, 2007) [hereinafter NRC Staff WDT/HTE-2]. USEC presented two witnesses: (1) Mr. Greg E. Fout; and (2) Mr. Peter J. Miner. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1.

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disposal of DU from the ACP.<sup>210</sup> USEC's current plan is to transfer DU from the proposed ACP to DOE for dispositioning (i.e., deconversion and disposal), as allowed by the USEC Privatization Act<sup>211</sup> for an NRC-licensed enrichment licensee. In its estimate of decommissioning costs, the Staff represented that DOE submitted cost estimates to USEC using quotes for near-surface burial from EnergySolutions.<sup>212</sup>

In the Board's view, at issue here was: (1) whether the near-surface disposal method of the large quantities of DU to be generated at the ACP meets the performance requirements of 10 C.F.R. Part 61; (2) whether the NRC Staff's conclusion in the FEIS that DU disposal impacts will be SMALL<sup>213</sup> is reasonable for the quantities to be generated at the ACP, thereby meeting its NEPA obligation for this activity; and (3) whether the decommissioning cost estimates reflect realistic funding for this disposal.<sup>214</sup>

Two separate determinations are needed to address whether the NRC Staff's NEPA review for DU disposition, at the large quantities to be generated at the ACP, is adequate. First, is whether EnergySolutions is properly licensed to accept the ACP's large quantities of DU, i.e., whether the impacts of near-surface disposal of such large quantities of DU were assessed by Utah (as an Agreement State) for the EnergySolutions site at the time it was licensed and were found to meet Utah's equivalent of NRC's 10 C.F.R. Part 61 performance objectives. Second is whether the Staff has independently reviewed the determination made by Utah and exercised independent judgment in determining the radiological impacts of near-surface disposal of the large quantities of ACP DU at the Utah site.

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*See also* [USEC's Written Direct] Testimony Concerning Hearing Issue HTE-2 (Impacts of DU Disposal) (Mar. 12, 2007) [hereinafter USEC WDT/HTE-2].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the impacts of DU disposal relative to USEC's License Application.

<sup>210</sup>The Commission has determined that DU is classified as a low-level waste (LLW), (*Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-5, 61 NRC 22, 34-35 (2005)), and pursuant to 10 C.F.R. § 61.55(a), is a Class A LLW.

<sup>211</sup>USEC Privatization Act § 3113, 42 U.S.C. § 2297h-11.

<sup>212</sup>*See* NRC Staff WDT/HTS-7 at 13.

<sup>213</sup>As used by the NRC Staff in its NEPA assessment, 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 provides the following definitions of significance levels: SMALL — "environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource"; MODERATE — "environmental effects are sufficient to alter noticeably, but not to destabilize important attributes of the resource"; LARGE — "environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource."

<sup>214</sup>*See* February 6 Order at 33-34.

As part of USEC's License Application, the NRC Staff received a confirmation letter from the State of Utah stating that EnergySolutions can accept DU for near-surface burial without any restrictions on the quantity of DU.<sup>215</sup> The issuance of the license by the State of Utah was based on a site-specific analysis of the potential health effects of shallow land disposal at the EnergySolutions site. The results of this analysis demonstrate that Utah's requirements (equivalent to 10 C.F.R. Part 61, Subpart C performance objectives) are met, and the State of Utah found that EnergySolutions can accept large quantities of DU up to its total disposal capacity.<sup>216</sup>

The NRC Staff then independently reviewed the basis for EnergySolutions' license and the results of pathway evaluations to ensure compliance with the low-level radioactive waste performance objectives in 10 C.F.R. Part 61, Subpart C.<sup>217</sup> Following this independent review, the Staff concluded that disposal of large quantities of DU at the EnergySolutions site is consistent with the performance objectives in the NRC regulations, and that the environmental impacts will be SMALL.<sup>218</sup> The Staff's conclusions are consistent with the findings made in a similar case dealing with the recently licensed enrichment facility being constructed by LES in New Mexico.<sup>219</sup>

In regard to the next question, the realism in the decommissioning cost estimate hinges on whether EnergySolutions will have sufficient capacity when it will be needed for disposal of ACP-generated DU waste. The NRC Staff testified at the oral hearing that all the DU tailings from DOE facilities, LES, and the ACP combined will account for only 20% of EnergySolutions' current capacity. Although the timing for the arrival of ACP tails is speculative (depending upon the sequence of deconversion that DOE performs at the Portsmouth facility), in the Staff's judgment, there will be sufficient capacity for DU tailings from the ACP plant at the existing, or potentially expanded, EnergySolutions site. Likewise, the Board was advised by the Staff that as an alternative, DOE could place this material at the Nevada Test Site, which has an extremely large capacity.<sup>220</sup>

As discussed in more detail under HTS-7 (Decommissioning Funding),<sup>221</sup> the NRC Staff testified that USEC will be under a continuing obligation to update its

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<sup>215</sup> See NRC Staff WDT/HTS-7 at 14.

<sup>216</sup> See *id.* at 16; see also Staff Exh. 17 (Evaluation of the Potential Public Health Impacts Associated with Radioactive Waste Disposal at a Site Near Clive, Utah (June 1990)); NRC Staff WDT/HTE-2 at 5.

<sup>217</sup> See NRC Staff WDT/HTE-2 at 4-13; Tr. at 610-15.

<sup>218</sup> See NRC Staff WDT/HTE-2 at 6.

<sup>219</sup> *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-06-8, 63 NRC 241, *aff'd*, CLI-06-15, 63 NRC 687 (2006).

<sup>220</sup> Tr. at 595-600.

<sup>221</sup> See *supra* pp. 449-54.

cost estimate to fully fund its financial assurances so that decommissioning can be performed in a manner that is protective of public health and safety regardless of changes in regulatory requirements, changes in the cost estimate, or changes in USEC's financial condition.<sup>222</sup> This procedure provides assurance that any change in disposal costs will be addressed in the decommissioning funding. While the costs for the disposition of DU tails differed between the SER and the FEIS, the number in the SER is the most recent estimate.<sup>223</sup> The small difference in the unit costs does not affect the conclusions presented in the FEIS.<sup>224</sup>

In its independent assessment, the Board finds that: (1) USEC's License Application relating to DU disposal is based on its plan to transfer its DU to DOE for disposition; (2) this plan is a plausible strategy authorized for LLW from uranium enrichment facilities by the USEC Privatization Act; (3) DOE based its disposal plans for USEC's DU on near-surface burial at EnergySolutions' facility; (4) Utah found that near-surface disposal of large quantities of DU at EnergySolutions' facility meets its requirements; (5) Utah's requirements are equivalent to 10 C.F.R. Part 61, Subpart C performance objectives; and (6) EnergySolutions can accept large quantities of DU up to its disposal capacity. Based on this, the Board finds that the NRC Staff's conclusion that the environmental impacts for the disposal of DU will be SMALL is reasonable and adequately supported by the facts in the record of this proceeding. The Board further finds that the Staff has taken the requisite hard look under NEPA and has performed an independent assessment as necessary.

### **HTE-3. ENVIRONMENTAL MONITORING**

The NRC Staff testimony and Board findings related to environmental monitoring, including the need for and extent of groundwater monitoring and the availability of baseline data to assure releases from the ACP could be separated from historic impacts, were discussed in conjunction with HTS-9, and need not be repeated here.<sup>225</sup>

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<sup>222</sup> See NRC Staff WDT/HTS-7 at 17.

<sup>223</sup> See *id.* at 13.

<sup>224</sup> See Tr. at 618.

<sup>225</sup> See *supra* pp. 458-60.

#### HTE-4. FINAL BALANCE AMONG CONFLICTING FACTORS<sup>226</sup>

As mandated in the Notice of Hearing,<sup>227</sup> the Board is tasked with independently considering the final balance among conflicting factors in the record, which, in the Board's judgment includes: (1) environmental impacts of the proposed action as compared to alternatives; (2) unavoidable adverse environmental impacts and proposed mitigative actions; (3) potential cumulative impacts; (4) irreversible and irretrievable commitment of resources; and (5) the relationship between short-term uses and long-term productivity of the human environment. The Board's balancing of these conflicting factors is discussed below in our NEPA findings.

In response to our initial questions,<sup>228</sup> the NRC Staff referenced six places in the FEIS where the conflicting factors were discussed, and further elaborated on the comparison of the benefits and costs of the project.<sup>229</sup> At the oral hearing, the Staff clarified the following issues: (1) justification for the difference in impacts between the proposed action and the no-action alternative for Waste Management and for Public and Occupational Health, and potential changes in the FEIS conclusions with changes to the impact level for each of these affected environments; (2) verification of the type of socioeconomic impact and reasons for a higher impact from a gas centrifuge enrichment plant at DOE's Paducah, Kentucky site (Paducah) (which has a currently operating GDP) than for the ACP at Portsmouth; and (3) discussion of the impact of handling hydrofluoric acid at locations other than the ACP.<sup>230</sup>

With respect to the Board's first issue, the NRC Staff testified that it was not likely that the impact level from the no-action alternative (which includes continued operation of the GDP at Paducah) would be greater than impacts from the proposed action (construction and operation of the ACP) for the affected environment categories of Public and Occupational Health and Waste Management, as shown on Table 2-8 of the FEIS.<sup>231</sup> The Staff explained that Table 2-8 is a

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<sup>226</sup> To address the Board's questions relating to the final balance among conflicting factors, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented two witnesses: (1) Mr. Matthew D. Blevins; and (2) Mr. Stephen D. Wyingarden. The professional qualifications of both of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. The NRC Staff did not submit any written direct testimony for Hearing Topic HTE-4. USEC presented two witnesses: (1) Mr. Peter J. Miner; and (2) Mr. Philip G. Sewell. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1. *See also* USEC WDT/HTE-1, 4, and 6].

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding the final balance among conflicting factors relative to USEC's License Application.

<sup>227</sup> 69 Fed. Reg. 61,411.

<sup>228</sup> *See* February 6 Order at 17.

<sup>229</sup> *See* NRC Staff February 20 Response at 55-59.

<sup>230</sup> Tr. at 701-06.

<sup>231</sup> FEIS at 2-60 to 2-61.

summary of the detailed discussion in Chapter 4 of the FEIS, which discusses the SMALL impacts of both the proposed action and the no-action alternative on Public and Occupational Health and on Waste Management. The Staff explained that the SMALL to MODERATE listed in Table 2-8 under the no-action alternative for these two affected environments are misprints, i.e., the impact should be SMALL in the table to be consistent with stated impacts in Chapter 4. The discussion in Chapter 4 was the basis for the Staff's conclusions in the FEIS, and, as such, the Staff testified that the misprints in Table 2-8 had no bearing on its recommendations therein.<sup>232</sup>

Next, the NRC Staff testified that socioeconomic costs associated with the proposed action evaluated by the Staff include: (1) indirect costs to the local economy around Piketon, including impacts to area housing resources, community and social services, and public utilities; (2) economic impacts including direct and indirect job creation during construction and operation, and increased tax revenues; and (3) impacts associated with ceasing operations at Paducah including reduction in the number of full-time workers (mitigated somewhat by the hiring of decommissioning workers), and small impacts to local tax revenues, population size, area housing resources, community and social services, and public utilities.<sup>233</sup> For the no-action alternative, the reduction of full-time workers at Paducah would not occur, but economic impacts with the proposed action would occur with additional domestic enrichment facilities in the future. The net result for socioeconomic impacts would be an increase in jobs for both the proposed action and the no-action alternative, although the Staff does not apply subjective qualifiers like "positive" or "negative" in its summary and comparison of alternatives.<sup>234</sup>

Lastly, the NRC Staff clarified that the challenges of managing and disposing of hydrofluoric acid when deconverting DU at fuel fabrication plants also applies to the Portsmouth and Paducah deconversion facilities. Therefore, the discussion in the FEIS applies to deconversion at Portsmouth as proposed for the ACP, as well as any other potential deconversion facility.<sup>235</sup>

The Staff addressed the Board's concerns relating to the final balancing of conflicting factors performed in the FEIS. The Board's independent balancing is included below under our NEPA determinations.<sup>236</sup>

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<sup>232</sup> Tr. at 702-04; *see also* FEIS at 4-118 to 4-119.

<sup>233</sup> *See* FEIS at 4-29 to 4-37.

<sup>234</sup> *See* Tr. at 704-05.

<sup>235</sup> *See* Tr. at 705-06; *see also* FEIS at 2-49.

<sup>236</sup> *See infra* pp. 490-95.



#### HTE-5. LIQUID EFFLUENT CONTROL SYSTEM<sup>237</sup>

The Board questioned the NRC Staff on the details of the MCW and LEC systems to understand whether they are a potential source of inadvertent radionuclide releases to the environment. Specifically, the Board sought to understand better the extent to which there will be buried tanks and pipelines associated with the ACP, USEC's proposed monitoring program, and the ability of that program to detect inadvertent radiological releases to the environment.<sup>238</sup> These questions were explored further as part of this hearing topic regarding the operation of the MCW system and the LEC system.

As part of the facility description presented at the start of the oral hearing, the NRC Staff clarified that the proposed MCW system will use a closed loop to cool components, including evacuation and purge vacuum pumps used to remove residual material from the centrifuges; the motor that spins the rotor; and centrifuge diffuser pumps.<sup>239</sup> Heat will be rejected from the closed cooling loop through a heat exchanger to the cross-flow mechanical cooling tower.<sup>240</sup> The current design does not require any direct cooling of the centrifuge rotors. The MCW cooling water will pass around the pumps and motors, but will not come into contact with any pump fluid, or the motor-driven units.<sup>241</sup> USEC explained that this system will cool components exterior to the centrifuge machines, using operating pressures higher than the components it cools. Process gases that will be handled by pumps cooled with this system will be under large vacuum pressures. Any unanticipated leakage between the cooling water jacket surrounding the pump and the contents in the pump will result in the inflow of cooling water into the process gas system for control and removal. Based on these factors, USEC testified that there is no realistic potential for radionuclides to be in the cooling liquid of the MCW system.<sup>242</sup>

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<sup>237</sup> To address the Board's questions relating to the liquid effluent control system, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented six witnesses: (1) Mr. Matthew D. Blevins; (2) Dr. Stan Echols; (3) Mr. Donald T. Hammer; (4) Mr. Michael A. Lamastra; (5) Mr. Todd E. Stribley; and (6) Dr. Raymond P. Wood. The professional qualifications of each of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. The NRC Staff did not submit any written direct testimony for Hearing Topic HTE-5. USEC presented two witnesses: (1) Mr. Greg E. Fout; and (2) Mr. Peter J. Miner. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1. *See* USEC WDT/Environmental Monitoring.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding liquid effluent control system relative to USEC's License Application.

<sup>238</sup> *See* February 6 Order at 18; March 2 Order at 4-5.

<sup>239</sup> *See* Tr. at 156-59.

<sup>240</sup> *See* NRC Staff Exh. 3A at 32-33.

<sup>241</sup> *See* Tr. at 452.

<sup>242</sup> Tr. at 625, 636.

The LEC system is a floor drain system used to collect any spills or releases from within the process buildings, particularly leaks from the MCW system or a fire sprinkler activation.<sup>243</sup> There is a drain under each individual centrifuge that is connected by solvent-welded plastic piping to four 550-gallon fiberglass collection tanks located at the cardinal points of each building. Exclusive of the sewer and storm water lines, USEC testified that there are no other buried pipelines or tanks at the ACP besides the LEC system components that could potentially contain radioactivity.<sup>244</sup>

The tanks in the LEC system are designed for use as contingent or holdup capacity in the event of liquid spills or releases in the process buildings. Any fluid that accumulates in the collection tanks will be sampled and analyzed prior to disposal.<sup>245</sup> If contents meet the concentration limits and other requirements of 10 C.F.R. § 20.2003, the fluid can be pumped to the sanitary sewer system.<sup>246</sup> Otherwise, USEC advised that the contents will be containerized for disposal at facilities that will take the liquid waste.<sup>247</sup> USEC stated that the potential for leakage from the LEC tanks will be monitored by two daily inspections of level gauges attached to the tanks. Because of the frequency of monitoring and the accuracy of the level gauges (i.e., a change of 1-inch in the gauge level is equivalent to 3 gallons of liquid), USEC concluded that it will be able to detect small seeps from the system.<sup>248</sup>

The Board finds reasonably supported the NRC Staff's conclusion that the likelihood of a radiological release to the environment from these systems is minimal, and that liquids potentially containing radioactivity from the process buildings will be collected by the LEC system, sampled, and discharged in a manner appropriate to its quality. Based on the testimony describing the design and operation of the MCW and LEC systems, the Board finds that it is unlikely that there will be release of radioactivity to the groundwater from the MCW and LEC systems that will compromise the public health and safety or the environment.

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<sup>243</sup> See NRC Staff WDT/HTE-3/HTS-9 at 9; Tr. at 627-28.

<sup>244</sup> Tr. at 627, 661.

<sup>245</sup> See *id.* at 627-28.

<sup>246</sup> See NRC Staff WDT/HTE-3 at 10.

<sup>247</sup> See Tr. at 645.

<sup>248</sup> See Tr. at 662-63.

## HTE-6. COST-BENEFIT ANALYSIS<sup>249</sup>

In accordance with 10 C.F.R. § 51.71 and recommendations in NUREG-1748, the NRC Staff performed a cost-benefit analysis of construction and operation of the ACP, and compared the incremental costs of the proposed action to the increase in benefits over the no-action alternative. The results were then summarized in Chapter 7 of the FEIS, and: (1) provide a rationale for deciding the likelihood of a net positive economic impact resulting from the project; (2) compare alternatives for achieving the stated purpose and needs of the proposed action; and (3) provide an objective rationale for choosing between competing alternatives.<sup>250</sup>

In its analysis, the NRC Staff compared the costs of the ACP to the projected economic and energy benefits, and qualitatively concluded that the benefits of the ACP outweigh its costs. The Staff stated that the analytical method applied to the proposed action consisted of quantifying life-cycle costs of the facility, and identifying qualitative costs and benefits to the economy and environment in accordance with NUREG/BR-0184, “Regulatory Analysis Technical Evaluation Handbook.”<sup>251</sup> The Staff also performed a comparative cost-benefit analysis between the ACP and alternatives to the project. As discussed below under our NEPA review, all the site, location, source, and technology alternatives were appropriately eliminated from further consideration in the FEIS prior to the comparison analyses.<sup>252</sup> The no-action alternative, which includes continued operation of the Paducah GDP and downblending of highly enriched uranium under the Megatons-to-Megawatts program, was then left for comparison with the proposed action.<sup>253</sup>

In its independent review, the Board asked the NRC Staff, *inter alia*, to: (1) explain the basis for the numbers presented in Tables 7-1 and 7-2 of the FEIS;<sup>254</sup> (2) verify that the basis for the Staff’s cost-benefit analysis is consistent with

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<sup>249</sup> To address the Board’s questions relating to the cost-benefit analysis, the NRC Staff and USEC proffered expert witnesses who provided both written and oral testimony. The NRC Staff presented three witnesses: (1) Mr. Matthew D. Blevins; and (2) Mr. Donald T. Hammer; and Mr. Stephen D. Wyngarden. The professional qualifications of each of the NRC Staff witnesses are set out in NRC Staff Exhibit 54. The NRC Staff did not submit any written direct testimony for Hearing Topic HTE-6. USEC presented two witnesses: (1) Mr. Peter J. Miner; and (2) Mr. Philip G. Sewell. The professional qualifications of both of the USEC witnesses are set out in USEC Exhibit 1. *See* USEC WDT/Environmental Monitoring.

Based on the respective qualifications and experience of the proffered witnesses, the Board found that each of these individuals was qualified to testify as an expert witness regarding cost-benefit analysis relative to USEC’s License Application.

<sup>250</sup> *See* NRC Staff Exh. 63 at 3 (Hearing Presentation for HTE-6).

<sup>251</sup> NRC Staff Exh. 63 at 7; *see also* Tr. at 714-15.

<sup>252</sup> *See* FEIS at 2-36 to 2-49; *see also infra* pp. 491-93.

<sup>253</sup> *See* FEIS at 2-35 to 2-36.

<sup>254</sup> FEIS at 7-2, 7-5.

USEC's estimate of its product market (i.e., 53% market share of North America utilities demand and 27% market share of world market demand); and (3) discuss the rationale for including, as one of the benefits, the ACP fulfilling the need for domestic electricity requirements given that there are no statutory, regulatory, or binding legal requirements that prohibit the sale of EU for peaceful use in foreign countries.<sup>255</sup>

In response, the NRC Staff submitted written answers to the Board's initial questions.<sup>256</sup> In addition, at the oral hearing, the Staff provided a presentation and answered questions relating to this hearing topic.<sup>257</sup> The Staff's presentation described the purpose of the cost-benefit analysis, the analytical methodology used, a summary of results, the limitations of the analysis, and its overall conclusions. The Staff testified that sources of raw data for the analytical method used to prepare the cost-benefit analysis included numerous topical areas in the description of site impacts from the ACP presented in Chapter 4 of the FEIS, USEC's Environmental Report (ER), and USEC's response to Staff Requests for Additional Information.<sup>258</sup> In addition, the Staff stated that the cost-benefit analysis was consistent with the distribution share presented by USEC, and that its conclusions would not change if all of the ACP product was shipped to foreign markets, because the Staff did not include a benefit factor accounting for increased domestic source of EU.<sup>259</sup>

In comparison with the no-action alternative, benefits were calculated for two scenarios for the ACP operating at 7 million SWU per year. These scenarios included the proposed action replacing two levels of capacity (4.6 million SWU and 7 million SWU) at Paducah. In the comparison analyses, the benefits were calculated using the reduction in unit operating costs with the energy-efficient ACP in place of the resource-intensive GDP at Paducah. This unit cost reduction was then multiplied by the level of SWU that is replaced in a given year as the ACP capacity is increased and GDP output at Paducah is reduced. In this analysis, it was assumed that the ACP will reach 1 million SWU per year by 2010, 3.5 million SWU per year by 2011, and 7 million SWU per year by 2015.<sup>260</sup>

In its independent review of the cost-benefit analysis, the Board found that quantitative costs associated with each life-cycle phase of the proposed action and the qualitative costs to the economy and environment will be SMALL in comparison with economic and national energy benefits of the ACP. During the presentation of comparative benefits at the oral hearing, it was apparent to the

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<sup>255</sup> See February 6 Order at 20; March 2 Order at 5-6.

<sup>256</sup> See NRC Staff February 20 Response at 69-71.

<sup>257</sup> Tr. at 710-49; *see also* NRC Staff Exh. 63.

<sup>258</sup> See NRC Staff Exh. 63 at 6.

<sup>259</sup> See Tr. at 747.

<sup>260</sup> See Tr. at 732-36.

Board that the expectation that the ACP will increase to 7 million SWU per year provides a more favorable cost-benefit analysis for the proposed action when compared to the no-action alternative than if the plant remained at 3.5 million SWU capacity. The NRC Staff concurred with this assessment since the impact costs will be similar for the two capacity levels.<sup>261</sup> Based on additional Staff testimony, the Board finds that there are still large resource savings at 3.5 million SWU when changing from the diffusion technology in use at Paducah to the centrifuge technology that will be used at the ACP. Although not as favorable as the results for a 7 million SWU capacity, the overall conclusions of the cost-benefit analysis for a 3.5 million SWU per year capacity plant, when compared to the no-action alternative, will not change in any meaningful way.<sup>262</sup>

Based on its independent weighing of the factors associated with the cost-benefit analysis, the Board finds that there are economic and national energy benefits to be derived from the licensing of the ACP. While there will be indirect costs resulting from impacts on various resource areas, the impacts will be small in magnitude when compared to the resulting benefits. As a result, the Board finds that construction and operation of the ACP on its own, or in comparison with the no-action alternative, yields significant net positive benefits.

## V. NEPA FINDINGS

The Board now addresses the NEPA findings we must make. The Board's review and conclusions are summarized herein.

### A. Regulations and Guidelines Relating to NEPA

In accordance with NEPA and the NRC's implementing regulations — contained in 10 C.F.R. Part 51 — the NRC Staff was required to prepare an FEIS as part of its review of USEC's License Application. Pursuant to the applicable regulations, the FEIS must discuss the potential environmental impacts of the proposed ACP, including an evaluation of alternatives to determine whether there are any obviously superior options to the proposed action. In addition, the FEIS analysis must compare the environmental costs of the facility to the Staff's assessment of the benefits derived from the additional domestic supply of EU and the presence of upgraded enrichment technology in the United States.<sup>263</sup>

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<sup>261</sup> See Tr. at 735-36.

<sup>262</sup> See Tr. at 736; see also NRC Exh. 63 at 16.

<sup>263</sup> See Notice of Intent To Prepare an [EIS] for the Proposed USEC [ACP], 69 Fed. Reg. 61,268 (Oct. 15, 2004).

The NRC Staff reviewed USEC's ER in preparing the FEIS. In accordance with 10 C.F.R. §§ 51.45 and 51.50, USEC's ER considered, *inter alia*: (1) impacts of the proposed action on the environment, discussed in proportion to their significance; (2) unavoidable adverse environmental effects; (3) alternatives to the proposed action, presented in a comparative form to the extent practicable; (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitments of resources.<sup>264</sup>

Based on the information in USEC's ER, the NRC Staff prepared its FEIS in accordance with 10 C.F.R. § 51.71 and the review guidance provided in NUREG-1748. The Staff's evaluation included, *inter alia*, an analysis that considered and weighed the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects.<sup>265</sup> The Staff's analysis of alternatives included: (1) a discussion of alternatives to the recommended course of action, because the ACP proposal involves unresolved conflicts concerning alternative uses of available resources;<sup>266</sup> (2) a discussion of the no-action alternative; and (3) a comparison of alternatives.

Following the standards established by the Commission, environmental issues were evaluated using three levels of significance — SMALL, MODERATE, LARGE — a framework developed by the NRC Staff based on guidelines contained in CEQ regulations.<sup>267</sup> Following guidance provided in NUREG-1748, the impacts have been presented in the FEIS in comparative form for the proposed action and the no-action alternative.<sup>268</sup>

As noted above, the Board must determine, *inter alia*, if the record of this proceeding contains sufficient information to conclude that the NEPA review conducted by the NRC Staff has been adequate, and we must reach an independent determination on the three NEPA issues.<sup>269</sup> The Commission provided guidance to the Board regarding the depth of review necessary to address these NEPA issues.<sup>270</sup> First, the Board shall not conduct a *de novo* evaluation of the application. Second, in reaching its independent determination, the Board should not second-guess or look behind the underlying technical or factual findings of the NRC Staff, except when it finds that the Staff's review is incomplete, or that the Staff

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<sup>264</sup> See 10 C.F.R. § 51.45(b)(1)-(5).

<sup>265</sup> See 10 C.F.R. § 51.71(d).

<sup>266</sup> See 42 U.S.C. § 4332(2)(E); 10 C.F.R. § 51.45(b)(3).

<sup>267</sup> See NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants."

<sup>268</sup> FEIS at 2-49 to 2-61 (Table 2-8).

<sup>269</sup> See *supra* pp. 437-48.

<sup>270</sup> See CLI-05-17, 62 NRC at 45.

findings lack sufficient explanation, or are not supported by fact and logic.<sup>271</sup> The Board's findings on these NEPA issues follow in the next three sections.

## **B. Adequacy of the NRC Staff's NEPA Review**

Pursuant to NEPA and the NRC's regulations set forth in 10 C.F.R. Part 51, the NRC Staff prepared its FEIS to assess the potential environmental impacts of constructing, operating, and decommissioning a uranium enrichment facility at the Portsmouth facility.<sup>272</sup> The Staff examined and evaluated the data and analyses contained in USEC's ER, following the procedural requirements of 10 C.F.R. Part 51 for conducting a scoping process to help identify issues that are relevant, issues that are beyond the scope of the FEIS and do not warrant additional detailed discussion, and issues that are not directly related to its impact assessment. To initiate its procedural requirements, the Staff published a Notice of Intent To Prepare an EIS in late 2004.<sup>273</sup> The Staff then toured the proposed ACP, held a public scoping meeting in Piketon, Ohio, and issued the Environmental Scoping Summary Report in 2005.<sup>274</sup> In preparing the FEIS, the Staff summarized the applicable federal, statutory, and regulatory requirements, and complied with the consultation requirements of the Endangered Species Act of 1973, the National Historic Preservation Act of 1966, Fish and Wildlife Coordination Act of 1934, and the Farmland Protection Policy Act of 1981.<sup>275</sup>

In its analysis, the NRC Staff examined both the proposed action and the purpose and need for the proposed action, as explained by USEC in its ER. As discussed in detail with respect to HTE-1 (Purpose and Need for the Facility),<sup>276</sup> the Staff found that the proposed ACP will fulfill the needs outlined by USEC. The FEIS evaluated several potential alternatives to the proposed action, including the no-action alternative, which the Staff determined will result in EU needs continuing to be met with existing foreign and domestic enrichment suppliers, including continued operation of the GDP at Paducah, and downblending of highly enriched uranium under the Megatons-to-Megawatts program.<sup>277</sup> As will be discussed in more detail below, these alternatives were eliminated from further consideration in the FEIS because they fail, for various reasons, to satisfy the goals of USEC and the need for this facility.

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<sup>271</sup> *See id.*

<sup>272</sup> FEIS at 1-1 to 1-3.

<sup>273</sup> 69 Fed. Reg. at 61,268.

<sup>274</sup> *See* FEIS at 1-8.

<sup>275</sup> *See id.* at 1-11, 1-29 to 1-33, 9-1 to 9-2.

<sup>276</sup> *See supra* pp. 471-73.

<sup>277</sup> FEIS at 2-35 to 2-36.

The NRC Staff evaluated the potential mitigation measures proposed by USEC and identified additional potential mitigation measures relating to the impact of construction on air quality.<sup>278</sup> The Staff also reviewed the proposed environmental measurement and monitoring programs.<sup>279</sup> After evaluating the potential environmental impacts from the proposed action, the Staff determined that, overall, the environmental impact will be SMALL, although they could be as high as MODERATE for impacts on air quality, socioeconomics, and transportation.<sup>280</sup>

As discussed in HTE-6 (Cost-Benefit Analysis),<sup>281</sup> the NRC Staff reviewed the costs and benefits of the proposed action, including direct and indirect costs. The Staff estimated that the environmental costs will be small in magnitude and in comparison to the benefits of the proposed action, and when compared to the no-action alternative, found that the proposed action outranks on all substantive impact areas, and that there will be a net benefit to the proposed action.<sup>282</sup>

Based on these facts, the Board has determined that the NRC Staff's review of USEC's License Application pursuant to 10 C.F.R. Part 51 has been adequate, and that the record of this proceeding contains sufficient information to support the Staff's conclusions.

### **C. Compliance with NEPA §§ 102(2)(A), (C), (E), and 10 C.F.R. Part 51**

This Board is required to independently determine whether the requirements of NEPA §§ 102(2)(A), (C), and (E) and the regulations in 10 C.F.R. Part 51 have been met.

#### ***1. Section 102(2)(A) Compliance***

Section 102(2)(A) of NEPA requires the agency to use a “systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment.”<sup>283</sup> Environmental impacts of construction, operation, and decommissioning of the ACP and from centrifuge manufacturing, were presented in Chapter 4 of the FEIS. In addition to the more natural environmental impacts, the NRC Staff also considered socioeco-

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<sup>278</sup> See *id.* at 5-1 to 5-4.

<sup>279</sup> See *id.* at 6-1 to 6-12.

<sup>280</sup> See *id.* at 2-61 to 2-62.

<sup>281</sup> See *supra* pp. 481-83.

<sup>282</sup> See FEIS at 7-1 to 7-2, 7-5, 7-10.

<sup>283</sup> 42 U.S.C. § 4332(2)(A).



conomic, historic and cultural resources, as well as environmental justice impacts. Socioeconomic impacts include physical impacts, social and economic issues, demography, infrastructure, and community services. Cumulative impacts and impacts of the no-action alternative were also addressed in FEIS Chapter 4.

The Board finds that the NRC Staff's description of these impacts, based on USEC's ER, was prepared in accordance with NUREG-1748 and 10 C.F.R. §§ 51.71 thru 51.93. Finally, the Staff demonstrated that it used a systematic, interdisciplinary approach as the basis for its decisions in the FEIS. Based on these facts, the Board finds that section 102(2)(A) of NEPA has been complied with in this proceeding.

## **2. Section 102(2)(C) Compliance**

Section 102(2)(C) of NEPA requires the agency to include in the FEIS a detailed statement on: (1) "the environmental impact of the proposed action"; (2) "any [unavoidable] adverse environmental effects"; (3) "alternatives to the proposed action"; (4) "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity"; and (5) "any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."<sup>284</sup> In accordance with 10 C.F.R. § 51.71(d), the comparison analysis must include the economic, technical, and other benefits of the proposed action and alternatives to those comparative costs.

First, Chapter 4 of the FEIS comprises over 100 pages of text presenting a detailed description of the environmental impacts of the proposed construction, operation, and decommissioning of the ACP. As summarized in Chapter 8 of the FEIS, the unavoidable impacts from the proposed action will be SMALL for land use, historic and cultural resources, visual and scenic resources, geology and soils, water resources, ecological resources, environmental justice, noise, public and occupational health, and waste management. Air quality, socioeconomic, and transportation impacts will be SMALL to MODERATE.<sup>285</sup>

Second, as described in Chapter 5 of the FEIS, USEC has proposed mitigation methods for impacts to geology and soils, water resources, ecological resources, public and occupational health, air quality, and waste management. USEC did not propose any mitigation methods for the impacts related to land use, transportation, noise, historic and cultural resources, visual and scenic resources, socioeconomics, and environmental justice.<sup>286</sup> The NRC Staff represented that it will incorporate

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<sup>284</sup> 42 U.S.C. § 4332(2)(C)(i)-(v).

<sup>285</sup> FEIS at 8-1 to 8-3.

<sup>286</sup> *Id.* at 5-2 to 5-3.

license application documents (which include mitigation methods presented in USEC's ER) directly into the license by tie-down references.<sup>287</sup> The Staff reviewed the proposed mitigation methods and identified additional construction measures for air quality that will be sufficiently beneficial to warrant implementation. These measures include the use of Tier-2 construction-related vehicles and the use of ultra-low sulfur diesel fuel to reduce emissions of particulate matter.<sup>288</sup> The Staff did not include these construction measures as a license condition, however, because the percent reduction in particulate matter emissions is expected to be small, and the site is located in an area that is exempt from restrictions on emissions from fugitive dust.<sup>289</sup>

Third, in Chapter 2 of the FEIS, alternatives to the proposed action were developed and analyzed by the NRC Staff including, the no-action alternative, alternative locations for the ACP, alternative sources of EU, and alternative enrichment technologies. For reasons discussed below,<sup>290</sup> all alternatives, except the no-action alternative, were eliminated prior to the comparison analyses.

In regard to the fourth required element of an FEIS, the NRC Staff found that the construction and operation of the proposed ACP will involve the short-term commitment of resources including land, water, electricity, fuel, and other construction raw materials. These short-term resource commitments will be, in the judgment of the Staff, offset by the long-term socioeconomic benefits to the local area and the region through increased and continued employment and expenditures, which, in turn, will have the potential to further facilitate long-term productivity in the local area and region through investments in local businesses.<sup>291</sup>

The NRC Staff found that the impacts from the irretrievable commitment of resources for the proposed ACP, including the commitment of land, water, energy, raw materials, and other construction and operational resources, will be SMALL.<sup>292</sup> In regard to the use of water resources, the Staff clarified that the ACP will increase the daily water use from the three existing well fields from 5.5 million gallons to 6.15 million gallons, and that this rate will be only 46% of the 13 million gallons per day used by the Portsmouth GDP prior to cold shutdown in 2001.<sup>293</sup>

Section 102(2)(C) also requires the agency to consult with and obtain comments from other federal, state, and local agencies and from the public prior to making the detailed statements discussed above. A list of the agencies and persons

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<sup>287</sup> See NRC Staff February 20 Response at 65; NRC Staff WDT/HTS-3 at 5-7.

<sup>288</sup> See FEIS at 5-4.

<sup>289</sup> See *id.*

<sup>290</sup> See *infra* pp. 491-93.

<sup>291</sup> See FEIS at 8-3 to 8-4.

<sup>292</sup> See *id.* at 8-4.

<sup>293</sup> See NRC Staff February 20 Response at 60.

consulted, public comments, and key consultation correspondence is documented in Chapter 9 of the FEIS. Consultation letters and public comments are included in Appendices B, J, and K of the FEIS.

Based on the facts discussed above, the Board finds that the NRC Staff has provided a detailed statement on: (1) “the environmental impact of the proposed action”; (2) “any [unavoidable] adverse environmental effects”; (3) “alternatives to the proposed action”; (4) “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity”; and (5) “any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.”<sup>294</sup> The analysis included a comparison of the economic, technical, and other benefits of the proposed action and no-action alternative to the accompanying costs. As a result, the Board finds that section 102(2)(C) of NEPA has been complied with in this proceeding.

### **3. Section 102(2)(E) Compliance**

Section 102(2)(E) of NEPA requires the agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”<sup>295</sup> The FEIS evaluated several potential alternatives to the construction and operation of the proposed ACP, including the no-action alternative, which the NRC Staff determined will result in EU needs continuing to be met with foreign and existing domestic enrichment suppliers, including continued operation of the Paducah GDP and downblending of highly enriched uranium under the Megatons-to-Megawatts program.<sup>296</sup> As described in more detail in below,<sup>297</sup> the Staff considered several site and uranium source alternatives to fulfill domestic enrichment needs, and compared these alternatives to the proposed activity at the ACP.<sup>298</sup>

Based on the statements provided by the NRC Staff in the FEIS, the Board finds that section 102(2)(E) of NEPA has been complied with in this proceeding.

### **4. Compliance with 10 C.F.R. Part 51**

Part 51 contains the regulations that have been implemented by the Com-

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<sup>294</sup> 42 U.S.C. § 4332(2)(C)(i)-(v).

<sup>295</sup> 42 U.S.C. § 4332(2)(E).

<sup>296</sup> FEIS at 2-35 to 2-36.

<sup>297</sup> See *infra* pp. 491-93.

<sup>298</sup> See FEIS at 2-36 to 2-49.

mission to ensure compliance with NEPA. Compliance with this Part has been demonstrated in the Board's finding that NRC Staff's review has been adequate in meeting the requirements of sections 102(2)(A), (C), and (E) as discussed above.

#### **D. Independent Consideration of the Final Balance Among Conflicting Factors**

The Commission has directed that the Board independently consider the final balance among conflicting factors in the record (10 C.F.R. §§ 2.104(b)(3)(ii), 70.23(a)(7)).<sup>299</sup> As previously mentioned, in the Board's view, the conflicting factors to be considered include: (1) the relative magnitude of the environmental impacts of the ACP as compared to other site locations, enrichment technologies, and DU conversion and disposal alternatives; (2) unavoidable adverse environmental impacts during construction and operation of the ACP and the mitigative actions proposed to minimize their effects; (3) potential cumulative impacts in the context of past, present, and future actions for both local (place-based) and national activities; (4) the magnitude of the irreversible and irretrievable commitments of resources; and (5) the relationship between short-term uses and long-term productivity of the human environment.

In its review of NEPA issues with respect to USEC's License Application, the Board reassessed the qualitative analysis prepared by the NRC Staff as the Board independently reviewed the Staff's categorization of the level of impact to each resource for both the proposed action and the no-action alternative. The NRC Staff's qualitative assessment is at the core of the items that the Board considered in our balancing among the conflicting factors and final determination of its final selection. As a result of our review, the Board finds that the Staff's assessment is well founded and reasonable, based on the discussion in the FEIS, as supplemented in those areas where the Board questioned the Staff's approach, assessment, or conclusions.

Summaries follow on the Board's independent assessment as applied to the NRC Staff's alternative analyses (including cost-benefit analysis), unavoidable adverse environmental impacts and their mitigative actions, potential cumulative impacts, irreversible and irretrievable commitment of resources, and the

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<sup>299</sup> From its inception in 1962 — pursuant to AEA § 191 — each Atomic Safety and Licensing Board has been an “independent” decisionmaker relative to the issues placed before it. Congress authorized the Commission to establish one or more licensing boards, largely, because it was believed that “with decisions being made by a semi-independent and technically qualified body, public confidence in the . . . regulatory process will be further enhanced.” See S. Rep. No. 87-1677 (1962), as reprinted in 1962 U.S.C.C.A.N. 2207, 2214. Given the Panel's history, the members of each Licensing Board perform “independent” assessments of every record before them, and thus, the decisions of the Board are necessarily “independent” as well.

relationship between short-term uses and long-term productivity of the human environment.

### *1. Alternatives Comparison*

The Board independently reviewed the NRC Staff's comparisons of site location and technology alternatives with the relative magnitude of the environmental impacts from the construction and operation of the ACP at the Portsmouth facility. In so doing, the Board considered the following specific alternatives generated by the Staff: (1) no-action alternative as described above; (2) constructing and operating the ACP at Paducah; (3) constructing and operating the ACP at alternative locations on the Portsmouth site; (4) downblending highly enriched uranium instead of constructing a domestic uranium enrichment plant; (5) using alternative sources of low-enriched uranium, including reactivating the GDP at the Portsmouth facility and purchasing additional low-enriched uranium from foreign sources; and (6) considering alternative technologies that are available for uranium enrichment (including the electromagnetic isotope separation process, liquid thermal diffusion, gaseous diffusion, atomic vapor laser isotope separation, and the separation of isotopes by laser excitation).<sup>300</sup> Alternative conversion and disposal methods for DU were discussed in HTE-2 (Impacts of DU Disposal).<sup>301</sup>

The Board's independent consideration of the alternatives analysis in the FEIS enabled us to conclude that the NRC Staff's assessment was reasonable and clearly based on a sound foundation for most of the factors. However, the Board questioned whether correct assessments had been assigned by the Staff in regards to the following factors: (1) whether locating operations at Paducah has a higher positive socioeconomic impact than at the Portsmouth facility; (2) why the management and handling of hydrofluoric acid is an extra burden if deconversion is performed at Paducah or at a fuel fabrication facility rather than at Portsmouth; (3) why the potential for additional domestic enrichment facilities being constructed in the future should be included in the no-action alternative; and (4) why the potential for additional domestic enrichment facilities had more impact on the no-action alternative than it did for the ACP with respect to the environment categories of Public and Occupational Health and of Waste Management.<sup>302</sup>

First, in regard to site alternatives, the NRC Staff testified that Paducah would have a higher socioeconomic impact relating to increased employment, because

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<sup>300</sup> See FEIS at 2-36 to 2-49.

<sup>301</sup> See *supra* pp. 473-76.

<sup>302</sup> See February 6 Order at 20-21.

Paducah requires more construction activity than the Portsmouth facility.<sup>303</sup> Based on this explanation, the Board finds that the Paducah site does not offer any environmental advantage, and can properly be excluded from further consideration.

Second, the NRC Staff also testified that the management and handling of hydrofluoric acid will be required regardless of whether the DUF<sub>6</sub> deconversion occurs at the Portsmouth facility, at Paducah, or at an existing fuel fabrication facility.<sup>304</sup> As a result, the Staff's analysis performed for the FEIS appropriately did not consider the management and handling of hydrofluoric acid as an extra burden for the other facilities.<sup>305</sup> The Board finds that the impacts from the management and handling of DU were applied consistently for all alternatives in the FEIS.

Third, the NRC Staff testified that notwithstanding construction of the ACP, the need for a domestic source of low-enriched uranium will still exist and could be satisfied by licensing other domestic enrichment facilities in the future.<sup>306</sup> The Board finds that it was reasonable and appropriate for the Staff to consider future domestic licensing facilities for the no-action alternative since the need for domestic supplies will be reduced, or possibly eliminated, with the licensing of the ACP.

Fourth, as explained in HTE-4 (Final Balance Among Conflicting Factors),<sup>307</sup> the Board finds that the noted misprint on Table 2-8 did not affect the NRC Staff's conclusions in the FEIS (which were based on the correct impact assessment described in Chapter 4) and, as a result, had no bearing on the Staff's recommendation that the proposed license for the ACP be issued to USEC.

As to whether there will be an improvement of national security with the supplemental domestic supply of EU provided by the ACP, the NRC Staff testified that the conclusions in the FEIS would not likely change if all of the ACP product was sold to foreign markets.<sup>308</sup> Even though the majority of the capacity is replacing existing EU output at Paducah and there is no guarantee that any of the EU produced by the ACP will be used to fulfill domestic needs, the Board finds that it is reasonable for the Staff to conclude that national energy security is inherently improved by the increased domestic supplies of economically viable EU provided by the ACP.

As part of the alternatives analysis, the NRC Staff estimated and evaluated the costs and benefits of the proposed action in Chapter 7 of the FEIS. Direct costs

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<sup>303</sup> See NRC Staff February 20 Response at 71; Tr. at 705.

<sup>304</sup> See NRC Staff February 20 Response at 72.

<sup>305</sup> See Tr. at 706.

<sup>306</sup> See NRC Staff February 20 Response at 73.

<sup>307</sup> See *supra* pp. 477-78.

<sup>308</sup> See Tr. at 696, 747.

will result from the life-cycle stages of the facility, which include: site preparation and construction, centrifuge manufacturing and assembly, operations, disposal of tails, and decontamination and decommissioning. Indirect costs identified and reviewed included environmental impacts expected to be caused by the proposed action, which, as stated above, were found to be generally SMALL but occasionally MODERATE.<sup>309</sup> The primary benefit of the proposed action is the annual production of 3.5 million to 7 million SWU of EU over the operational life of the ACP, at approximately 20% of the operating costs per SWU of a GDP. This production will augment the domestic supply of EU and will meet the purpose and need of the facility as discussed above. The Staff also determined that the proposed action will result in a socioeconomic impact on the region around the facility.<sup>310</sup> Overall, the Staff estimated that the costs of the proposed action will be SMALL in comparison to the benefits for the proposed action.<sup>311</sup>

As presented herein and discussed further in HTE-6 (Cost-Benefit Analysis),<sup>312</sup> the Board concluded, as a result of its independent assessment, that the construction and operation of the ACP yields significant net positive benefits.

## ***2. Unavoidable Adverse Environmental Impacts***

Unavoidable adverse environmental impacts during construction and operation of the ACP, as presented in Chapter 4 of the FEIS and discussed further in Chapter 8, generally will be SMALL and will, in most cases, be mitigated by methods described in Chapter 5 of the FEIS. In its independent assessment, the Board questioned how the mitigation measures proposed by USEC and the one measure proposed by the NRC Staff, as summarized in Chapter 5 of the FEIS, will be incorporated into the license and how they will be implemented, monitored, and evaluated during construction and operations.<sup>313</sup> The Staff testified that license application documents, including the ER, will be directly incorporated into the license by tie-down references.<sup>314</sup> Monitoring and evaluation will be performed through Staff inspections.<sup>315</sup> The Staff verified that this tie-down procedure will include the options to mitigate adverse environmental impacts as presented in Tables 5-1, 5-2, and 5-3 of the FEIS.<sup>316</sup>

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<sup>309</sup> See FEIS at 7-1 to 7-2.

<sup>310</sup> See *id.* at 7-5.

<sup>311</sup> See *id.*

<sup>312</sup> See *supra* pp. 481-83.

<sup>313</sup> See February 6 Order at 22.

<sup>314</sup> See NRC Staff WDT/HTS-3 at 5-7.

<sup>315</sup> See NRC Staff February 20 Response at 69.

<sup>316</sup> See *id.*; see also FEIS at 5-2 to 5-4.

The Board finds that the unavoidable adverse environmental impacts have been adequately documented in the FEIS, the NRC Staff has a sound basis to state that the majority of these impacts will be SMALL and that the remainder will be SMALL to MODERATE, and the measures proposed by USEC and the Staff will help mitigate these impacts. Based upon the Staff's testimony, the Board also finds that the mitigation measures presented in the ER are appropriate and adequate, and will be incorporated into the License by tie-down references and monitored through Staff inspections.

### **3. Cumulative Impacts**

In section 4.3 of the FEIS, the NRC Staff evaluated the potential cumulative impacts resulting from the construction, operation, and decommissioning of the ACP in context of past, present, and foreseeable future actions at the Portsmouth facility that can result from individually minor but collectively significant actions taking place over a period of time. The affected environment presented in the Chapter 3 of the FEIS presents the baseline conditions against which the cumulative impacts were reviewed.

The past actions on the various resources and the identified trends in development and farming, for instance, that could influence various resources, were considered in evaluating cumulative impacts. Other federal and nonfederal activities were reviewed on a place-based perspective, and several activities occurring at the Portsmouth facility, as well as national activities, were identified and considered in the cumulative impact analysis. The cumulative impacts by resource for the proposed ACP are documented in Table 4-24 of the FEIS and discussed by resource in the subsequent sections.<sup>317</sup> The cumulative impacts of the no-action alternative would be less than the proposed action except for socioeconomic impacts, as there would be fewer jobs created under the no-action alternative.<sup>318</sup>

The Board finds that the cumulative impacts for the ACP have been well defined in the FEIS and based on reasonable and appropriate analyses. In its independent review of the record of this proceeding, the Board finds that there is nothing illogical about the NRC Staff's assessment of cumulative impacts, that the facts in the record support the NRC Staff's conclusions, and we concur with the Staff's conclusions.

### **4. Irreversible and Irretrievable Commitment of Resources**

The irreversible and irretrievable commitment of resources associated with

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<sup>317</sup> FEIS at 4-100 to 4-101, 4-103 to 4-114.

<sup>318</sup> See *id.* at 4-114 to 4-119.



the proposed ACP, as documented in section 8.3 of the FEIS, includes the commitment of land, water, energy, raw materials, and other resources for the construction and operation of the facility. Many of the ACP buildings will be refurbished existing structures at the Portsmouth facility on land already committed to industrial purposes. Land adjacent to these structures will be used to build two additional process buildings and associated support structures including new roads and parking lots and several new cylinder storage yards. Other environmental resource usage is summarized in FEIS § 8.3, including water use, energy use, waste generation, and material use for construction and operations.

In its independent assessment, the Board finds that the NRC Staff's analysis of irreversible and irretrievable commitment of resources is reasonable and appropriate for meeting the requirements of 10 C.F.R. Part 51, and we concur with the Staff's conclusions.

#### ***5. Short-Term Uses and Long-Term Productivity***

As documented by the NRC Staff in section 8.2 of the FEIS, the construction and operation of the proposed ACP will involve the short-term commitment of resources, including the permanent commitment of land, water, electricity, fuel, and other raw materials for construction. The short-term uses are offset by the long-term socioeconomic benefits to the local area and the region through continued and increased employment and expenditures. The Staff pointed out that investments in dependent businesses in the local area and region will provide further socioeconomic benefits.<sup>319</sup>

In its independent assessment, the Board finds that the NRC Staff has defined the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. The Board finds that the description in the record of the short-term uses and resulting long-term socioeconomic benefits to the local area and region address the NEPA requirements as promulgated in NRC regulations.

#### **E. Determination of Actions on the ACP Application To Protect Environmental Values**

As discussed above, the Board is tasked with determining whether the requirements of NEPA and 10 C.F.R. Part 51 have been met, and independently considering the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken.

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<sup>319</sup> See *id.* at 8-4.

Based on the discussion herein and in hearing topics HTE-1 through HTE-6,<sup>320</sup> the Board finds, as a result of its independent assessment, that the NRC Staff's review pursuant to 10 C.F.R. Part 51 has been adequate. The Board also finds that: (1) the requirements of NEPA §§ 102(2)(A), (C), (E), and 10 C.F.R. Part 51 have been complied with in this proceeding; (2) its independent consideration of the final balance among the conflicting factors contained in the record of this proceeding supports the issuance of the ACP License; and (3) after considering reasonable alternatives, protection of the environment does not require denial or further conditioning of the ACP License. The Board concludes that these factors support the granting of the ACP License.

## VI. CONCLUSION

The Board has reviewed the record in this proceeding, including the final SER, the FEIS, NRC Staff and USEC answers to questions propounded by the Board, the written direct testimony and documentary evidence submitted by the Staff and USEC with respect to the topics on which the Board requested additional information, and the testimony of the Staff and USEC witnesses given during the oral evidentiary hearing.

In our findings, consistent with Commission guidance,<sup>321</sup> we have relied upon, without independent verification, the accuracy and veracity of: (1) the content of the NRC Staff's documents, including the FEIS and the SER, and those of USEC as placed into the record of this proceeding; and (2) the Staff's and USEC's responses to the Board's inquiries and their written direct and in-person testimony at the oral portion of this proceeding. We have also, pursuant to Commission direction, relied upon the Staff's NEPA-related examination of the matters related to USEC's License Application, including its consideration of alternatives.

Subject to the commitments and assumptions specified in the 13 proposed License Conditions, 6 exemption requests, and over 200 commitments, we have reached the following determinations.

With respect to matters involving safety, i.e., issues pursuant to the AEA, the Board has determined that: (1) the License Application and the record of this proceeding, as supplemented by the information provided to the Board during the course of its review, contain sufficient information to support the NRC Staff's conclusions; (2) the review of the Application by the NRC Staff has been adequate; (3) the issuance of the ACP License will not be inimical to the common defense and security or to the health and safety of the public; and (4) the proposed

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<sup>320</sup> See *supra* pp. 471-83.

<sup>321</sup> See CLI-05-17, 62 NRC 5.

ACP can be constructed and operated without undue risk to the health and safety of the public.<sup>322</sup>

With respect to matters involving the environment, i.e., issues arising under NEPA, the Board has determined that the review conducted by the NRC Staff has been adequate. In addition, the Board finds that: (1) the requirements of sections 102(2)(A), (C), and (E) of NEPA and 10 C.F.R. Part 51 have been complied with in this proceeding; (2) having conducted its own independent balancing of the conflicting environmental and other factors, including examination of the costs and benefits of the proposed facility, the overall balance supports issuance of the ACP License; and (3) after considering reasonable alternatives, protection of the environment does not require denial or further conditioning of the license.<sup>323</sup> Therefore, the Board concludes that these items support issuance of the requested License.

For the foregoing reasons, it is ORDERED that the Director, Office of Nuclear Material Safety and Safeguards is authorized to issue to USEC a 30-year License to construct and operate the ACP, consistent with the Atomic Energy Act of 1954, Commission regulations, and this Initial Decision.<sup>324</sup>

It is so ORDERED.

THE ATOMIC SAFETY AND  
LICENSING BOARD<sup>325</sup>

Lawrence G. McDade, Chairman  
ADMINISTRATIVE JUDGE

Dr. Peter S. Lam  
ADMINISTRATIVE JUDGE

Dr. Richard E. Wardwell  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
April 13, 2007

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<sup>322</sup> See 10 C.F.R. § 2.104(b)(2)(i); 69 Fed. Reg. at 61,411.

<sup>323</sup> See 10 C.F.R. § 2.104(b)(2)(ii), (3); 69 Fed. Reg. at 61,411.

<sup>324</sup> See 10 C.F.R. § 2.340.

<sup>325</sup> Copies of this Initial Decision were sent this date to (1) Counsel for the NRC Staff and (2) Counsel for USEC.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 40-7102-MLA**

**SHIELDALLOY METALLURGICAL  
CORPORATION**  
**(License Amendment Request for  
Decommissioning of the Newfield,  
New Jersey Facility)**

**May 30, 2007**

**CONTENTION ADMISSIBILITY, SCHEDULE FOR DECISION**

The Commission's regulations, in 10 C.F.R. § 2.309(i), require the presiding officer "within forty-five (45) days after the filing of answers and replies . . . [to] issue a decision on each request for hearing/petition to intervene, absent an extension from the Commission." In general, we do not endorse deferring the consideration of proposed contentions because, in our view, prompt consideration of contentions promotes the efficient and complete development of the record while conserving resources. Prompt identification of all of the contentions also allows the parties to concentrate on matters truly at issue in a proceeding. Prompt identification maintains the proceeding's primary focus on adequacy of the application at issue, and may induce — or enhance the prospects for — early settlement. But deferral may be appropriate in some very limited and exceptional circumstances.

## **CONTENTION ADMISSIBILITY, APPEALS**

The Commission's regulations allow unsuccessful petitioners to appeal the denial of their intervention petitions. But appellants must make some argument that an appeal is justified. Pointing out errors in the Board's decision is a basic requirement for an appeal. Supporting information is to be provided at the time the contention is filed, not at a later date on appeal. Moreover, "[t]he purpose of an appeal to the Commission is to point out errors made in the Board's decision, not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the Board."

## **CONTENTIONS, LATE-FILED**

The Commission does "not look with favor on 'amended or new contentions filed after the initial filing.'"

## **MEMORANDUM AND ORDER**

Loretta Williams appeals<sup>1</sup> the Atomic Safety and Licensing Board's denial<sup>2</sup> of her petition to intervene in this proceeding to amend Shieldalloy Metallurgical Corporation's (Shieldalloy's) source material license. The proposed license amendment would authorize the decommissioning of Shieldalloy's Newfield, New Jersey, smelting and alloy production facility where pyrochlore, regulated as a source material, was processed until 1998.<sup>3</sup> The NRC Staff filed a response opposing Ms. Williams' appeal.<sup>4</sup> Shieldalloy also filed in opposition to her appeal.<sup>5</sup> We find that Ms. Williams' appeal does not conform to our requirements for a valid appeal and deny her appeal on that basis.

### **I. PRELIMINARY MATTER**

Our regulations, in section 2.309(i), require the presiding officer — here the Licensing Board — "within forty-five (45) days after the filing of answers and replies . . . [to] issue a decision on each request for hearing/petition to intervene,

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<sup>1</sup> Letter from Loretta Williams to Annette Vie[tt]i-Cook, Office of the Secretary (Apr. 5, 2007) (Appeal).

<sup>2</sup> LBP-07-5, 65 NRC 341 (2007).

<sup>3</sup> See 71 Fed. Reg. 66,986 (Nov. 17, 2006); LBP-07-5, 65 NRC at 343-44.

<sup>4</sup> NRC Staff's Response to Appeal of Loretta Williams (Apr. 16, 2007) (Staff Response).

<sup>5</sup> Shieldalloy's Response to Appeal of Loretta Williams (Apr. 13, 2007) (Shieldalloy Response).

absent an extension from the Commission.’’<sup>6</sup> The Board, while admitting one of the contentions filed by the New Jersey State Department of Environmental Protection (New Jersey), deferred consideration of the balance of New Jersey’s contentions “to await the Staff’s completion of its safety and environmental review.’’<sup>7</sup>

In general, we do not endorse deferring the consideration of proposed contentions because, in our view, prompt consideration of contentions promotes the efficient and complete development of the record while conserving resources. Prompt identification of all of the contentions also allows the parties to concentrate on matters truly at issue in a proceeding. Prompt identification maintains the proceeding’s primary focus on adequacy of the application at issue (rather than shifting the focus and the burden, as the Board has done here, to the Staff’s analysis of the application), and may induce — or enhance the prospects for — early settlement. Additionally, our regulations contemplate that many hearing activities, such as document disclosure, motion practice, and the submission of late-filed contentions based on new information, will take place concurrently with the Staff review.<sup>8</sup>

But deferral may be appropriate in some very limited and exceptional circumstances. In this instance — a complex decommissioning case — the Board expressed its view that “there is at least a considerable measure of current uncertainty as to whether, at the end of the day, the decommissioning of the Licensee’s site will take the form that is contemplated by the [decommissioning plan] now in hand.’’<sup>9</sup>

No party filed for reconsideration of the deferral of the contentions, despite the Board’s invitation to the parties for such a motion<sup>10</sup> — so we will not disturb the

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<sup>6</sup> 10 C.F.R. § 2.309(i). We added paragraph (i) when we amended Part 2 in 2004. At that time, we agreed that “the presiding officer [should be required] to issue a decision on standing and admissibility of contentions within forty-five (45) days of the completion of the parties’ filings” and stated our belief “that this is an appropriate and reasonable time period for a presiding officer to issue a decision on standing and admissibility of contentions. . . . Additional time beyond the 45 days may be provided if circumstances warrant.” Final Rule: “Changes to Adjudicatory Process,” 69 Fed. Reg. 2182, 2204 (Jan. 14, 2004). In short, normal practice is to rule on all of the proposed contentions within the mandated 45-day period.

<sup>7</sup> LBP-07-5, 65 NRC at 361.

<sup>8</sup> In addition, the Staff has several decisions to make regarding an adjudicatory proceeding under Subpart L that are informed by the identification of the issues. In a Subpart L proceeding, the Staff elects whether or not to be a party to some or all contentions. *See* 10 C.F.R. § 2.1202(b)(2). Moreover, our regulations allow the Staff, in this type of proceeding, to issue the license amendment despite the pendency of a hearing. *See* 10 C.F.R. § 2.1202(a). Prior to such issuance the Staff is required to notify the parties and include in that notice the Staff’s position on the issues in controversy, whether or not it is a party.

<sup>9</sup> LBP-07-5, 65 NRC at 361.

<sup>10</sup> *See id.* at 362.

Board's view for now. Our acquiescence in the Board's approach is conditional, however. We note that the Board has already directed the NRC Staff to file a status report on June 8, 2007.<sup>11</sup> To augment the record, we direct Shieldalloy to advise the Board, also on June 8, 2007, of the status of its decommissioning plan, and any relevant developments such as fundamental shifts in Shieldalloy's approach to decommissioning the site. We ask the parties and the NRC Staff to weigh in on the Board's approach by June 8, 2007,<sup>12</sup> in a filing before the Board; the parties and the NRC Staff should also advise the Board as soon as practicable whenever changing circumstances indicate that the proposed contentions should be taken up to have their admissibility assessed.

## II. BACKGROUND

In her petition to intervene,<sup>13</sup> Ms. Williams stated that she lives within blocks of the facility. She alleged problems with Shieldalloy's decommissioning plan including: environmental, health and safety, and security risks; unaccounted-for costs; inadequate financial assurance; economic and financial burdens on surrounding communities due to lost tax revenue and devalued property; inadequate analysis of solubility testing results; inconsistent application of dose criteria; and failure to properly consider alternative offsite disposal options. Ms. Williams did not attach any documentation to support her allegations.

The Licensing Board found that "[t]he proximity of Ms. Williams' residence to the Licensee's facility satisfies the standing requirement."<sup>14</sup> Ms. Williams did not, however, satisfy the NRC's contention pleading requirements<sup>15</sup> — particularly, in the Board's view, 10 C.F.R. § 2.309(f)(1)(i), (v) — because she did not "provide a 'specific statement of the issue of law or fact to be raised or controverted,' [and] a concise statement of the alleged facts or expert opinion supporting the contention

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<sup>11</sup> Unpublished Memorandum and Order (Directing the Filing of Status Reports) (May 8, 2007).

<sup>12</sup> In this connection, *see also U.S. Army* (Jefferson Proving Ground Site), LBP-06-27, 64 NRC 438 (2006), where the Board decided the admissibility of proposed contentions after the Staff issued the materials license amendment.

<sup>13</sup> Letter from Loretta Williams to Annette Vie[t]i-Cook, Office of the Secretary (Jan. 3, 2007) (Petition).

<sup>14</sup> LBP-07-5, 65 NRC at 351.

<sup>15</sup> Ms. Williams appeared *pro se*, but, as the Board noted, LBP-07-5, 65 NRC at 352, *pro se* litigants are not exempt from our contention pleading requirements. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 456-57 (2006); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 15 (2001).

and specific sources and documents on which [she] intends to rely to support [her] position on the issue.’’<sup>16</sup> Consequently, the Board denied her petition.<sup>17</sup>

### III. ANALYSIS

Our regulations allow unsuccessful petitioners to appeal the denial of their intervention petitions.<sup>18</sup> But appellants must make some argument that an appeal is justified. Ms. Williams appears to intend her letter to be an appeal, since she calls it an “appeal” in the caption to her letter.<sup>19</sup> However, her letter points to no error of law or abuse of discretion on the part of the Board — in fact, she does not address the Board’s decision at all. Pointing out errors in the Board’s decision is a basic requirement for an appeal.<sup>20</sup> Ms. Williams’ letter simply reformulates the same contention she presented to the Board, this time using 10 C.F.R. § 2.309(f)(1) as a template for organizing her letter, and this time with an appendix.<sup>21</sup>

In the caption to her letter, Ms. Williams also states that she is “submitting

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<sup>16</sup> LBP-07-5, 65 NRC at 352.

<sup>17</sup> *Id.*

<sup>18</sup> Section 2.311(b) provides:

An order denying a petition to intervene and/or request for hearing is appealable by the requestor/petitioner on the question as to whether the request and/or petition should have been granted.

<sup>19</sup> The caption reads (Appeal at 1 (emphasis added)):

Loretta Williams files this *appeal* to the Board’s denial for a hearing in accordance with 10 CFR S2.315 ©[sic], respectfully submitting additional information to support her original hearing request.

Ms. Williams’ letter contains no explanation for her reference, in the caption to her letter, to 10 C.F.R. § 2.315(c), which directs the presiding officer to afford a reasonable opportunity for participation to “an interested State, local government body (county, municipality or other subdivision), and affected, Federally-recognized Indian Tribe, which has not been admitted as a party under § 2.309.” Ms. Williams does not appear to fit within any of these categories.

<sup>20</sup> “We regularly affirm Board decisions on the admissibility of contentions where the appellant points to no error of law or abuse of discretion.” *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 121 (2006) (internal quotation marks omitted), *citing USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 439 n.32 (2006). *See also Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 637 (2004). *Accord Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-21, 52 NRC 261, 265 (2000).

<sup>21</sup> Ms. Williams complains, as she did in her original filing, that Shieldalloy’s decommissioning plan: creates financial and economic burdens for residents, businesses, and the local government; poses environmental, health and safety, and security risks; provides inadequate financial assurance; contains unaccounted-for costs; includes inadequate analysis of solubility testing results; applies dose criteria inconsistently; and fails to properly consider alternative offsite disposal options. Ms. Williams continues to provide no support for these allegations.



additional information to support her original hearing request.’’<sup>22</sup> Supporting information is to be provided at the time the contention is filed, not at a later date or on appeal.<sup>23</sup> Moreover, “[t]he purpose of an appeal to the Commission is to point out errors made in the Board’s decision, not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the Board.’’<sup>24</sup>

Her appeal (and the “supporting information” in the appendix) includes some additional tax payment details, but the information she belatedly attempts to supply does not go to the adequacy of the proposed decommissioning plan and would not have helped her even if she had included it in her original petition. In particular, based on tax assessment relief granted to Shieldalloy in 1998 and 1999 and comparisons to the tax payments received from several other local businesses, Ms. Williams asserts that a concern of Shieldalloy’s size ought to be paying higher taxes. This is not relevant — there is no causal relationship between this information and the proposed decommissioning plan. Ms. Williams’ own explanation makes this clear: “due to foreign competition [Shieldalloy’s] business was not doing well,” and the company “went from two hundred employees to currently three employees, and from paying taxes of over \$200,000 a year to \$67,027.83 in 2006.’’<sup>25</sup> The reduction in tax receipts from Shieldalloy is an actual change that has already occurred, not a future change that will occur only if the proposed decommissioning plan is approved.

And even if we were to construe her “appeal” to be the filing of an amended or new contention — a stretch — she does not satisfy the requirements for that:

[C]ontentions may be amended or new contentions filed after the initial filing only with leave of the presiding officer upon a showing that —

- (i) The information upon which the amended or new contention is based was not previously available;
- (ii) The information upon which the amended or new contention is based is materially different than information previously available; and
- (iii) The amended or new contention has been submitted in a timely fashion based on the availability of the subsequent information.<sup>26</sup>

We do “not look with favor on ‘amended or new contentions filed after the initial filing.’”<sup>27</sup> In her letter, Ms. Williams does not ask leave to submit an amended or new contention, does not assert that the information relied on for the

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<sup>22</sup> Appeal at 1.

<sup>23</sup> See 10 C.F.R. § 2.309(f)(1); *American Centrifuge Plant*, CLI-06-10, 63 NRC at 455-56.

<sup>24</sup> *American Centrifuge Plant*, CLI-06-10, 63 NRC at 458.

<sup>25</sup> Appeal at 1.

<sup>26</sup> 10 C.F.R. § 2.309(f)(2).

<sup>27</sup> *Millstone Nuclear Power Station*, CLI-04-36, 60 NRC at 636.

amended or new contention was previously unavailable and is materially different from previously available information, and does not show that the amended or new contention is timely filed in response to new information.

In sum, Ms. Williams' letter does not satisfy our requirements for a valid appeal, and we deny it on that basis. We note that her letter provides no alternative basis for review, as our rules do not permit information supporting a contention to be filed at some date after the contention is filed — or on appeal — and her letter does not satisfy the requirements for the filing of an amended or new contention. The Board decision denying Ms. Williams' petition to intervene is *affirmed*.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 30th day of May 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:**

**Alan S. Rosenthal**, Chairman  
**Dr. Paul B. Abramson**  
**Dr. Richard F. Cole**

**In the Matter of**

**Docket No. 40-8838-MLA**  
**(ASLBP No. 00-776-04-MLA)**

**U.S. ARMY**  
**(Jefferson Proving Ground Site)**

**May 1, 2007**

**MEMORANDUM AND ORDER**  
**(Denying Motion of Save the Valley, Inc. To Admit**  
**Additional Contention and Supporting Bases)**

On February 2, 2006, this Board granted the petition to intervene and request for hearing of Save the Valley, Inc. (Intervenor) regarding an application submitted by the Department of the Army (Licensee) for an amendment to its NRC materials license (License No. SUB-1435). LBP-06-6, 63 NRC 167 (2006). Between 1983 and 1994, under the auspices of that license, the Licensee conducted accuracy testing of depleted uranium (DU) tank penetration rounds at its Jefferson Proving Ground (JPG) site located in Madison, Indiana. It now seeks a license amendment that would provide an alternate schedule (i.e., a 5-year additional period) for the submittal of a decommissioning plan for that site. Such a plan is required because there is currently amassed on the JPG site approximately 70,000 kilograms of DU munitions.

Before this Board is a motion by Intervenor to admit for hearing an additional contention. For the reasons set forth below, we find Intervenor's proposed new contention inadmissible.

## I. BACKGROUND

The extended history of this proceeding is adequately summarized in LBP-06-6, and need not be rehearsed here. For present purposes, the starting point is the Board's February 2, 2006 memorandum and order granting Intervenor's request for hearing and unopposed motion to defer a hearing until completion of the NRC Staff's technical review of the alternate schedule proposal. On the former score, we found that, as supported by at least one of the bases assigned for it, Contention B-1 satisfied the admissibility requirements imposed by 10 C.F.R. § 2.309(f)(1). LBP-06-6, 63 NRC at 183-85. That contention asserted (*id.* at 183):

As filed, the [Field Sampling Plan (FSP)] is not properly designed to obtain all the verifiable data required for reliable dose modeling and accurate assessment of the effects on exposure pathways of meteorological, geological, hydrological, animal, and human features specific to the JPG site and its surrounding area.

The specific basis to which the Board pointed in admitting Contention B-1 — basis (a) — stated (*ibid.*):

The [Electrical Imaging (EI)] geophysical study which will follow the fracture analysis study, as described in section 6.1 of the FSP, is supposed to find all significant karst features and location of the water table. From these studies, 10 to 20 pairs of monitoring wells are proposed to attempt to tie into "conduits" of ground water flow. This study may help to site monitoring wells, but stream gauging studies should be an early and integral part of the search for likely conduits. The stream reaches of strong gain would be a very strong direct indicator of the discharge points of ground water "conduits." EI is an indirect technique and can miss conduits or identify features that are not conduits. The FSP alludes to doing stream gauging in its discussion of well location criteria, but the time table shown indicates stream studies will follow the ground water studies by a year.

Having found acceptable one of Intervenor's contentions along with a supporting basis, the Board deemed it unnecessary to pass at that time upon the adequacy of either the other bases assigned for Contention B-1 or the five additional contentions and their assigned bases.<sup>1</sup> Rather, given our decision to grant Intervenor's motion to defer the hearing, it seemed that resolving the disagreement among the parties on the remaining contentions could readily abide the event of the NRC Staff's completion of its technical review of the alternate decommissioning schedule proposal. In that connection, we indicated that Intervenor would then be given a reasonable opportunity to review the documents associated with the

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<sup>1</sup> As noted *infra* p. 510, Intervenor's five additional contentions subsequently were rejected.

technical review and to make changes, if so advised, in what it had presented in the hearing request. *Id.* at 185-86.

On March 15, 2006, the NRC Staff published in the *Federal Register* notice of its completion of the Environmental Assessment (EA) prepared in support of the Licensee's proposed license amendment. 71 Fed. Reg. 13,435 (Mar. 15, 2006). The EA concluded that a "Finding of No Significant Impact" was appropriate, with the result that an Environmental Impact Statement would not be prepared. *Ibid.* On April 27, 2006, the NRC Staff notified the Board that it had issued the following materials license amendment (License Amendment Number 13) which, pursuant to 10 C.F.R. § 2.1202(a), was to be immediately effective:<sup>2</sup>

The Army shall submit a decommissioning plan for NRC review and approval under an alternate schedule identified in its May 25, 2005, Field Sampling Plan, its responses to action items from a September 8, 2005, public meeting by letter dated October 26, 2005, its Field Sampling Plan addendum dated November 2005, and its responses to NRC's request for additional information by letter dated February 9, 2006, by the end of 2011 or earlier. The Army will also submit an Environmental Report using the guidance in NUREG-1748 for NRC to use in preparing an Environmental Impact Statement.<sup>3</sup>

The amendment was accompanied by issuance of the Staff's Safety Evaluation Report (SER),<sup>4</sup> which concluded that the proposed site characterization activities satisfied the criteria of 10 C.F.R. § 40.42(g)(2), because they are "necessary for an acceptable [decommissioning plan] and will lead to effective decommissioning operations[, and] . . . will be done without undue risk from radiation to the public health and safety." SER at 4.

In light of the NRC Staff's completion of its technical review and issuance of the requested license amendment, on May 1, 2006, the Board issued an order establishing a schedule allowing Intervenor to amend, to withdraw, and/or to supplement its original petition to intervene.<sup>5</sup> After receipt of all the parties' pleadings, the Board convened a prehearing conference on July 19 in Madison, Indiana. Its purpose was to address those matters pertaining to the scope of

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<sup>2</sup>NRC Staff Notification of License Amendment Issuance (Apr. 27, 2006).

<sup>3</sup>Materials License No. SUB-1435 Amendment No. 13, at 2, Encl. 1 to Letter from Daniel M. Gillen, Office of Nuclear Material Safety and Safeguards, to Alan G. Wilson, Department of the Army (Apr. 26, 2006).

<sup>4</sup>Safety Evaluation for Issuance of Amendment No. 13 to Materials License No. SUB-1435, Department of the Army, Jefferson Proving Ground [hereinafter SER], Encl. 2 to Letter from Daniel M. Gillen, Office of Nuclear Material Safety and Safeguards, to Alan G. Wilson, Department of the Army (Apr. 26, 2006).

<sup>5</sup>Licensing Board Memorandum and Order (Scheduling Further Proceedings) (May 1, 2006) (unpublished).

the forthcoming evidentiary hearing that were left open in LBP-06-6. In the course of the conference, it became evident that the details of the Licensee's site characterization plans — as set forth in its May 2005 FSP and subsequent addenda — remained in a state of flux and, thus, it might be fruitful for the Licensee and Intervenor to consult regarding the issues of concern to Intervenor. Unfortunately, after a number of meetings between the parties, the Licensee and Intervenor were unable to reach agreement on any issues and indicated they had no plans for future meetings regarding development of the site characterization.<sup>6</sup>

Given this apparent impasse in negotiations, we deemed it necessary to move forward with the evidentiary hearing in this proceeding. To that end, on December 20, we issued a memorandum and order determining the scope of the evidentiary hearing. LBP-06-27, 64 NRC 438 (2006). In that decision, we concluded that, given the Licensee is here seeking simply a 5-year period in which to characterize the JPG site — with the expectation that at the end of such time it would submit to the NRC Staff a viable decommissioning plan — the scope of this proceeding is limited to passing upon the acceptability of the Licensee's proposal for characterizing the JPG site as set forth in its FSP and subsequent addenda. For that reason, we rejected Intervenor's remaining contentions — five of which were submitted with its initial petition to intervene and two of which were newly proposed — because none of them was similarly addressed, like Contention B-1, to the adequacy of the Licensee's site characterization activities. *Id.* at 448-58.

Were the Board to determine that the Licensee's FSP was not acceptable, it perforce would follow that at least one of the requirements for the grant of an alternate schedule for the submission of a decommissioning plan have not been met. Among other things, 10 C.F.R. § 40.42(g)(2) specifies that the alternate schedule must be "necessary to the effective conduct of decommissioning operations." As applied to this case, the clear contemplation of this very specific regulatory criterion is that, at the end of the day, the proposed FSP — central to the granted alternative schedule — will bring about a satisfactory decommissioning plan. Any doubt that the NRC Staff viewed the FSP in this light in approving the alternate schedule would appear to be dispelled by the observation in its SER:

In summary, the activities described by the Army in its FSP and addendum as supplemented in its follow-up responses, should provide adequate site characterization information such that the Army could submit an acceptable [decommissioning plan] within 5 years and are therefore necessary for the effective conduct of decommissioning operations.

SER at 8.

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<sup>6</sup> Second Joint Status Report on Settlement Negotiations (Nov. 9, 2006).

Subsequent to issuing LBP-06-27, on January 19, 2007, Intervenor submitted a motion to admit for hearing an additional contention, denominated Contention B-2.<sup>7</sup> According to Intervenor, the impetus for the new contention was the Licensee's submission to the NRC Staff of addenda to the FSP, and the disclosure of several documents that contain data collected thus far in its implementation of the FSP. None of these items, Intervenor asserts, was available at the time it submitted its post-NRC Staff technical review contentions. Shortly thereafter, on January 24, the Board convened a telephonic prehearing conference with the parties to discuss matters pertaining to scheduling future milestones in this proceeding.<sup>8</sup> As a result of discussions during that prehearing conference,<sup>9</sup> on February 23, Intervenor submitted an amended motion, setting forth its proposed new Contention B-2.<sup>10</sup> On March 15, the Licensee and the NRC Staff each timely submitted answers to Intervenor's amended motion.<sup>11</sup>

It is within the framework set forth in LBP-06-27 that we consider Intervenor's Contention B-2.

## II. ANALYSIS

### A. Legal Standards Governing the Admissibility of Intervenor's Contention

As provided in 10 C.F.R. § 2.309(f)(1), in order to be admitted for evidentiary consideration, a contention must:

- (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
- (ii) Provide a brief explanation of the basis for the contention;
- (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;

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<sup>7</sup> Motion of Save the Valley, Inc. To Admit for Hearing Additional Contention and Supporting Bases (Jan. 19, 2007).

<sup>8</sup> See Licensing Board Order (Scheduling Conference Call To Discuss Matters Relating to Case Scheduling and Management) (Jan. 4, 2007) (unpublished).

<sup>9</sup> See Licensing Board Order (Scheduling Further Proceedings) (Jan. 29, 2007) (unpublished).

<sup>10</sup> Amended Motion of Save the Valley, Inc. To Admit for Hearing Additional Contention B-2 and Supporting Bases A Through G (Feb. 23, 2007) [hereinafter STV Amended Motion]; see also Reply in Support of Amended Motion of Save the Valley, Inc. To Admit for Hearing Additional Contention B-2 and Supporting Bases A Through G (Mar. 26, 2007).

<sup>11</sup> Army Response to Amended Motion of Save the Valley, Inc. To Admit for Hearing Additional Contention B-2 and Supporting Bases A Through G (Mar. 15, 2007) [hereinafter Army Response]; NRC Staff Response to Amended Motion of Save the Valley, Inc., To Admit for Hearing Additional Contention B-2 (Mar. 15, 2007) [hereinafter NRC Staff Response].

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

(v) Provide a concise statement of the alleged facts or expert opinions which support the . . . petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the . . . petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the . . . licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

A contention that fails to comply with any of these requirements must be rejected. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2201-02 (Jan. 14, 2004).<sup>12</sup>

## **B. Intervenor's Proposed New Contention B-2**

Intervenor's Contention B-2 asserts that "[t]he Army's implementation of the [FSP] is inadequate to achieve its objective of appropriate characterization of the [JPG DU] Site." STV Amended Motion at 1. According to Intervenor, "[t]hus far, FSP implementation has been inadequate . . . in crucial respects," for achieving its objective "of appropriately characterizing the JPG DU site for decommissioning." *Id.* at 2. More specifically, based upon the Licensee's addenda to its FSP and its release of data collected in the course of site characterization, Intervenor maintains that the Licensee's implementation of each of the following aspects of the FSP is "inadequate to serve [their] intended purpose": (a) fracture trace analysis; (b) electrical imaging survey; (c) soil verification survey; (d) well location selection methodology for ground water conduit and overburden characterization; (e) stream and cave gauging program; (f) field collection and analytical methods to document and evaluate data yielded by FSP implementation; and (g) initial deer tissue sampling study. *Id.* at 2-46.

Each of these seven bases would appear to raise a challenge to either (1) the manner in which the Licensee is implementing its FSP such that the Licensee is not complying with the terms of its granted license amendment or (2) the

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<sup>12</sup>Because we find that Intervenor's Contention B-2 is inadmissible for failure to satisfy the admissibility requirements under 10 C.F.R. § 2.309(f)(1), we need not consider either whether Contention B-2 is timely under section 2.309(f)(2) or whether it nonetheless satisfies the eight-factor balancing for nontimely filings prescribed in section 2.309(c)(1).



adequacy of the Licensee's proposed site characterization activities for achieving its intended objective, i.e., submission of a suitable decommissioning plan to the NRC in 2011. The Licensee and the NRC Staff insist, *inter alia*, that because it is singularly addressed to implementation of the FSP rather than the adequacy of the FSP as approved by the Staff in April 2006, Contention B-2 is beyond the scope of this proceeding (10 C.F.R. § 2.309(f)(1)(iii)). *See* NRC Staff Response at 9-27; Army Response at 6-24. As discussed in greater detail below, to the extent Intervenor's Contention B-2 is addressed to the Licensee's conduct in implementing its FSP, it is inadmissible. To the extent it is, instead, a challenge to the adequacy of the FSP as submitted in May 2005, approved by the NRC Staff in April 2006, and subsequently supplemented, the challenge is deemed subsumed within the context of admitted Contention B-1.

As we endeavored to make clear in LBP-06-27, the sole matter at issue in this adjudicatory proceeding is whether the site characterization activities proposed by the Licensee in its FSP and approved by the NRC Staff will enable the Licensee to submit to the NRC an effective decommissioning plan no later than 2011. Given that munitions testing at the JPG site ceased in 1994, the Licensee is long overdue for its submission and implementation of a decommissioning plan for the site.<sup>13</sup> Thus, it is in the interest of all of the parties to this proceeding (to say nothing of the public interest) that the manner in which the Licensee characterizes the site during the course of the 5-year period is adequate for the development of a viable decommissioning plan.

This Board has admitted Intervenor's fundamental challenge as to whether what the Licensee informed the NRC Staff it proposed to do by way of site characterization is, in fact, adequate to accomplish the granted amendment's objective, or whether it must be otherwise modified or conditioned by the Board. *See* 10 C.F.R. § 40.42(g)(2). It is thus open to Intervenor to assert and to attempt to demonstrate through expert testimony at the evidentiary hearing that what the FSP currently calls for is not sufficient to achieve that objective and that additional sampling procedures should be required by the Board. Intervenor's Contention B-1 alleges precisely that, which is the reason the Board deemed it admissible. LBP-06-27, 64 NRC at 447-48.

What cannot be entertained by the Board in this proceeding are claims that the Licensee is not carrying out the express terms of the license amendment that was approved by the NRC Staff. The failure of a licensee to fulfill responsibilities associated with a license amendment issued by the Staff gives rise to an enforcement issue that does not come within the purview of a license amendment adjudication. Rather, in such circumstances, the available remedy is the filing of a petition with the appropriate division director, calling attention to the asserted failure of the

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<sup>13</sup> *See* 10 C.F.R. § 40.42(d).

licensee to meet its license obligations and requesting the taking of appropriate remedial action. *See* NRC Staff Response at 10 (citing 10 C.F.R. § 2.206). To the extent that Intervenor's Contention B-2 seeks to allege that the Licensee's current activities are in violation of the terms of granted License Amendment 13 or applicable NRC regulations, it should file a request for action under 10 C.F.R. § 2.206 with the Director, Office of Nuclear Material Safety and Safeguards; it should not seek to admit new contentions in this adjudication.<sup>14</sup>

To the extent, however, that Intervenor's Contention B-2 seeks to assert that the Licensee's implementation of the FSP demonstrates that the FSP — as proposed — is inadequate to achieve its stated purpose of developing a decommissioning plan, such a challenge is subsumed in previously admitted Contention B-1. That being so, the information (including data) cited in support of inadmissible Contention B-2 may be relied upon by Intervenor in the evidentiary hearing to be held on already-admitted Contention B-1 — which, once again, challenges the adequacy of the FSP to accomplish its intended site characterization purpose.

To be sure, the NRC Staff's findings undergirding its approval of the alternate schedule proposal (and thus the underlying FSP) were, as they had to be, based solely upon the information regarding the proposal that was then available. That consideration does not, however, appear to be of any relevance on the matter of Intervenor's entitlement to rely upon subsequently developed information. We do not read the Commission's regulations as requiring that, in entertaining a challenge to particular Staff action, we are confined to allowing the evidentiary introduction of only such matter as might have been available to the Staff, and thus taken into consideration by it, when reaching its decision. Rather, in the context of the present case, we interpret the regulatory scheme as permitting the inclusion in the written presentations of any information at a party's disposal (no matter when or where obtained) that might provide support for that party's position on the matters in contention. Indeed, in our view, any other reading of those Rules would make little sense. Put in the simplest terms, what conceivable justification might there be for precluding the presentation in an evidentiary proceeding of existing information having a direct bearing on the issue being litigated — here, the adequacy of the FSP to accomplish its site characterization purpose within the allotted time period?

A word of caution nonetheless seems advisable. Obviously, over the next several years additional data and other information inevitably will continue to be accumulated as the implementation of the FSP moves forward. That can be expected to bring about, in turn, significant changes in what procedures and activities are adopted and pursued by the Licensee, which might or might not have

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<sup>14</sup>We need not, and do not, decide here whether it would be appropriate for an enforcement proceeding to be instituted on a license or license amendment during such period as the license or amendment is under review in an adjudicatory proceeding.

Intervenor's endorsement. It is this Board's intent to hear the available evidence regarding whether the FSP accepted by the NRC Staff is sufficient ultimately to provide the data necessary for development of a satisfactory decommissioning plan. The Board does not intend, however, to keep this proceeding open for the entire 5-year period to allow the submission of additional assertions of FSP inadequacy based upon new developments or newly acquired information. Once the evidentiary hearing on Contention B-1 has been concluded and a decision reached by the Board on the basis of the evidence then in the record, the likelihood is that this adjudicatory proceeding will be at an end. Should subsequent developments in the course of FSP implementation provide Intervenor with fresh concerns, those concerns will have to be presented in the first instance to the appropriate Staff office for its consideration and possible action, whether pursuant to 10 C.F.R. § 2.206 or by some other administrative means.

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In sum, under the regulatory scheme governing these matters, it is not our province to pass upon whether the Licensee is properly implementing the FSP that it formulated and the NRC Staff approved. If Intervenor has reason for concern on that score, in the first instance it must bring that concern to the attention of the Staff office responsible for ensuring that this Licensee will fulfill the obligations that undergirded the grant of its application for an alternate schedule.

What will be open for consideration at the evidentiary hearing, under the aegis of previously admitted Contention B-1, is whether the approved FSP is adequate to accomplish its intended objective. In this regard, Intervenor will be entitled to put forth in its written presentations any then-existing data or information that it might deem to demonstrate a need for undertakings above and beyond those required (or reasonably contemplated) by the approved FSP. It can scarcely be gainsaid that, pursuant to the granted license amendment, the Licensee must submit a decommissioning plan by 2011 that will be found satisfactory by the NRC. Because this, in turn, will hinge upon the completion of an adequate site characterization, as Intervenor's admitted contention reflects there must be assurance that there are not activities required to obtain such a site characterization beyond those called for in the approved FSP (or which can reasonably be expected to become part of the FSP as it evolves).

### III. CONCLUSION

For the foregoing reasons, Intervenor's motion to admit new Contention B-2 is *denied*. The evidentiary proceeding will be limited in scope as delineated herein.

It is so ORDERED.

THE ATOMIC SAFETY AND  
LICENSING BOARD<sup>15</sup>

Alan S. Rosenthal, Chairman  
ADMINISTRATIVE JUDGE

Dr. Paul B. Abramson\*  
ADMINISTRATIVE JUDGE

Dr. Richard F. Cole  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
May 1, 2007

**Concurring Opinion of Judge Abramson**

I concur with my colleagues in the result of this ruling, although I disagree with some of the rationale they employ.

*First*, the subject license amendment sets out a broad-brush workscope establishing the framework for an evolving site characterization effort to be carried out over 5 years. That this is “necessary to the effective conduct of decommissioning operations” is obvious, since one cannot decommission without knowing the distribution of the DU causing the problem or the hydrogeologic (and other) properties of the site itself via which radioactivity would be carried offsite. There can be no question whether or not the Staff’s grant of the extension was legitimately rooted in 10 C.F.R. § 40.42(g)(2), but I disagree with my colleagues’ view that this regulation “contemplates . . . that the proposed FSP . . . will bring about a satisfactory decommissioning plan.” Such an interpretation reads into the regulation the requirement that the activity not only be “necessary” but also that it be “sufficient” to result in effective decommissioning, and this regulation does no such thing. It simply provides a mechanism for a Licensee to obtain an alternate schedule for submission of a decommissioning plan when the licensee cannot meet its then-current schedule — nothing in this regulation

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<sup>15</sup> Copies of this Memorandum and Order were sent this date by Internet electronic mail transmission to counsel for (1) the Licensee, (2) the NRC Staff, and (3) Intervenor.

\*Judge Abramson’s concurring opinion follows.

prohibits the possibility (which would be prohibited by my colleagues' overbroad interpretation) that if further developments require further alternate schedules, the Commission could grant, under this provision, a further alternate schedule.

*Second*, the admitted contention in essence challenges the effectiveness, flexibility, and responsiveness of that imprecise workscope to evolve to encompass all the testing and examination which STV believes will ultimately be necessary. Thus we must focus upon the underlying precept (clearly agreed by ALL Parties to this proceeding) that this is to be an *evolving* workscope — as new information regarding the site characteristics is generated, future work will be adapted to respond to the then-perceived needs. The workscope is expected, indeed planned, to evolve over the 5 years of the license extension granted by the subject amendment. Absent from my colleagues' analyses is any discussion of how the adequacy of this plan to develop a plan will or should be litigated. How, for example, if this plan remains imprecise, does this tribunal address potential conflicts arising out of further "new" information? In my view, all of this imprecision highlights the necessity for the Parties to address two principal aspects: (a) given the nature of the Field Sampling Plan as submitted and approved, how does a Party demonstrate that this "plan to develop a plan" will or will not evolve to produce adequate site characterization; and (b) what legal standard should this Board use to make such a determination? Naturally, in formulating their approach to these tasks, Intervenors may, as my colleagues have found, use any relevant "new" information to support their position on the admitted contention, including relevant new information referenced by Intervenors in their proposed new contention.

*Finally*, I disagree with my colleagues' finding, based upon arguments of the Staff and Licensee, that the proposed new amendment raises any issue of enforcement. It simply raises new information which goes toward the substance of the previously admitted contention. Therefore, I would not have addressed, at all, the issues of enforcement raised by the Staff and the Applicant.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein**, Chairman  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket Nos. 50-155-LT  
72-043-LT**

**CONSUMERS ENERGY COMPANY  
(Big Rock Point Independent  
Spent Fuel Storage Installation)**

**June 28, 2007**

**RULES OF PRACTICE: PETITION FOR RECONSIDERATION**

To succeed, a “petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid.” 10 C.F.R. § 2.345(b). *See also Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006).

A petitioner cannot satisfy our standing requirement by offering a vague claim of 50-mile “proximity” in an initial petition and later using a petition for reconsideration to fill in gaps with more specific information that was available all along. *See generally* 10 C.F.R. § 2.345(b) (“A petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, *which could not have been reasonably anticipated*, which renders the decision invalid” (emphasis added)).

**RULES OF PRACTICE: STANDING (PROXIMITY)**

In license transfer decisions issued subsequent to the *Vogtle* decision in

1993, the Commission's grants of standing based on a facility's proximity to a petitioner's residence have not approached the 40-42 miles at issue here. Indeed, the longest specific distance for which the Commission has granted proximity-based standing in a post-*Vogtle* license transfer case is 6-6½ miles. By contrast, we have denied proximity-based standing in license transfer proceedings to petitioners within 5-10 miles, 12 miles, and 40 miles from licensed facilities. All these proceedings involved active, operating reactors. The Commission therefore denies the requested proximity-based standing claim in this case resting on a residence within 42 miles of an ISFSI or on occasional sailing trips within 15 miles.

NRC licensing boards and the Commission itself have recognized proximity standing at such close distances where a petitioner "*frequently engages in substantial business and related activities in the vicinity of the facility,*" engages in "normal, *everyday activities*" in the vicinity, has "*regular*" and "*frequent contacts*" in an area near a licensed facility, or otherwise has visits of a "length" and "nature" showing "an ongoing connection and presence." Conversely, the agency has denied proximity-based standing where contact has been limited to "*mere occasional trips to areas located close to reactors.*"

## MEMORANDUM AND ORDER

On April 26, 2007, we issued a Memorandum and Order (CLI-07-19, 65 NRC 423) finding that the three petitioners to intervene (Mr. Victor McManemy, Nuclear Information and Resource Service, and Don't Waste Michigan, collectively "Petitioners") had failed to demonstrate individual or representative standing based on Mr. McManemy's proximity to the Big Rock Point Independent Spent Fuel Storage Installation ("ISFSI").<sup>1</sup> Based on that finding, we denied their joint Petition To Intervene and terminated this adjudicatory proceeding regarding an application to transfer the NRC license for the ISFSI. On May 7, 2007, Petitioners submitted a Petition for Reconsideration of CLI-07-19, rearguing (in greater detail) that they have standing based on Mr. McManemy's proximity to the ISFSI.<sup>2</sup>

To succeed, a "petition for reconsideration must demonstrate a compelling

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<sup>1</sup> Petitioners based their claims of standing solely on this ground. See Request for Hearing and Petition To Intervene at 1-2 (Feb. 20, 2007).

<sup>2</sup> In their Petition for Reconsideration, Petitioners also seek to explain their failure to file a Reply Brief earlier in this proceeding and complain of our silence on the merits of their contentions. Petition for Reconsideration at 2, 6-7. We base today's decision solely on Petitioners' failure to demonstrate standing and therefore need not reach these other unrelated matters.

circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid.”<sup>3</sup> The Petition for Reconsideration does not satisfy this rigorous standard. We therefore deny it.

## I. BACKGROUND

In CLI-07-19, we found insufficient Mr. McManemy’s claim of residence within 50 miles of the Big Rock Point ISFSI. We pointed out that “[w]e have required far closer proximity in . . . license transfer cases” for reactor operating licenses, and that “[w]e determine on a case-by-case basis whether the proximity presumption should apply, considering the ‘obvious potential for offsite [radiological] consequences,’ or lack thereof, from the application at issue, and specifically ‘taking into account the nature of the proposed action and the significance of the radioactive source.’”<sup>4</sup> We then explained that, because an ISFSI is essentially a passive structure, the radiological risk from the transfer of its license is even lower than that from the transfer of a nuclear power plant’s operating license.<sup>5</sup> From this, we concluded that Mr. McManemy’s 50-mile “proximity” assertion did not qualify him for standing.

In their Petition for Reconsideration, Petitioners argue that, in license renewal adjudications, our agency has regularly granted standing to individuals residing, working, or engaging in recreation within 50 miles of the facility seeking license renewal,<sup>6</sup> and that in one license transfer proceeding, we granted standing to a petitioner living within 35 miles of the licensed facility.<sup>7</sup> Based on these precedents, they assert that we should have accorded standing to Mr. McManemy (and, through him, to Nuclear Information and Resource Service, and Don’t Waste Michigan), because he lives “about 40 to 42 miles . . . from Big Rock [Point],”<sup>8</sup> sails within 15 miles of it “several times per year” and within 1 mile of it “every few years,” and stops at a park within 1 mile of it several times

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<sup>3</sup> 10 C.F.R. § 2.345(b). See also *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006).

<sup>4</sup> CLI-07-19, 65 NRC at 426, quoting *Exelon Generation Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580-81 (2005).

<sup>5</sup> CLI-07-19, 65 NRC at 426.

<sup>6</sup> Petition for Reconsideration at 3.

<sup>7</sup> *Id.*, citing *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), LBP-93-5, 37 NRC 96, *aff’d*, CLI-93-16, 38 NRC 25 (1993).

<sup>8</sup> Petition for Reconsideration at 4. Petitioners also assert that any breach of the ISFSI’s dry storage casks could release radioactive cesium which either wind or water could carry 42 miles. *Id.* at 5.



a year to (among other things) collect water from an artesian well.<sup>9</sup> In support, Petitioners submit a Supplemental Declaration from Mr. McManemy, largely to the above effect.<sup>10</sup>

## II. DISCUSSION

Petitioners seeking reconsideration of a Commission order must satisfy a high standard: the Commission's alleged error must be "clear," petitioners' argument must be new, and petitioners must not previously have been able to make that argument.

Petitioners here originally claimed only that their member, Mr. McManemy, lived within 50 miles of the Big Rock Point site. In CLI-07-19, we explained why this bare allegation did not suffice for standing to challenge transferring the license for the Big Rock Point ISFSI — which as we explained in CLI-07-19 is a passive structure whose potential to harm Mr. McManemy 50 miles away is hardly self-evident.<sup>11</sup> On reconsideration, Petitioners have submitted a fresh declaration that, for the first time, specifies the distance from the ISFSI that Mr. McManemy resides (42 miles) and points to closer distances (1–15 miles) that he occasionally traverses. This information comes too late. A petitioner cannot satisfy our standing requirement by offering a vague claim of 50-mile "proximity" in an initial petition and later using a petition for reconsideration to fill in gaps with more specific information that was available all along.<sup>12</sup>

Even were we to entertain Petitioners' belated effort to substantiate their standing, we would not find their new information persuasive. Petitioners cite our 1993 *Vogtle* license transfer decision, where we allowed petitioners living within 35 miles of a reactor to challenge a license transfer. But *Vogtle*, like the various license renewal decisions Petitioners cite, involved an operating reactor,

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<sup>9</sup> *Id.* at 4; Supplemental Declaration of Victor McManemy (May 7, 2007), appended to Petition for Reconsideration.

<sup>10</sup> Supplemental Declaration of Victor McManemy.

<sup>11</sup> CLI-07-19, 65 NRC at 426. *Cf. Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 and 2)*, CLI-99-4, 49 NRC 185, 191 (1999) (citations omitted), *petition for review denied*, *Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000):

[G]iven the shutdown and defueled status of the units, the license amendments do not on their face present any "obvious" potential of offsite radiological consequences. . . . Because neither reactor will ever operate again, the scope of activities at the plant has been greatly reduced. . . . Accordingly "the spectrum of accidents and events that remain credible is significantly reduced."

<sup>12</sup> *See generally* 10 C.F.R. § 2.345(b) ("A petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, *which could not have been reasonably anticipated*, which renders the decision invalid" (emphasis added)).

not simply an ISFSI. The difference in potential risk between a reactor and an ISFSI justifies treating the present case differently.<sup>13</sup> We have, moreover, always treated *Vogtle* as an unusual, special case:

The petitioner in *Vogtle* alleged that he could suffer harm from the transfer of operating authority to a company that, according to him, lacked the “character, competence, and integrity to safely operate the Vogtle plant, and lacks the candor, truthfulness, and willingness to abide by the regulatory requirements necessary to operate a nuclear facility.” CLI-93-16, 38 NRC at 33. The petitioner also alleged that management had submitted material false statements to the Commission in order to obstruct an NRC investigation. *Id.* *Those unusual circumstances are not present here.*<sup>14</sup>

The current case contains no allegations similar to those in *Vogtle*. Post-*Vogtle*, our grants of standing based on a facility’s proximity to a petitioner’s residence have not approached the 40-42 miles separating Mr. McManemy’s house from the Big Rock Point ISFSI. Indeed, the longest specific distance for which we have granted proximity-based standing in a post-*Vogtle* license transfer case is 6-6½ miles.<sup>15</sup> By contrast, we have denied proximity-based standing in license transfer proceedings to petitioners within 5-10 miles,<sup>16</sup> 12 miles,<sup>17</sup> and 40 miles from licensed facilities.<sup>18</sup> All these proceedings involved active, operating reactors. Thus, we deny the requested proximity-based standing claim in this case resting on a residence within 42 miles of an ISFSI or on occasional sailing trips within 15 miles.

This leaves only the question whether Mr. McManemy’s sporadic visits (sailing every few years and walking several times a year) to within about a mile of the ISFSI might qualify him for proximity-based standing. NRC licensing boards and the Commission itself have recognized proximity standing at such close distances where a petitioner “*frequently engages in substantial business*

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<sup>13</sup> See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 265 (2001) (ISFSI “failure would not pose nearly the same radioactive consequences as a reactor failure”).

<sup>14</sup> *Peach Bottom*, CLI-05-26, 62 NRC at 583 n.27 (emphasis added).

<sup>15</sup> *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163-64 (2000).

<sup>16</sup> *Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Units 1, 2, and 3), CLI-00-18, 52 NRC 129, 132-33 (2000).

<sup>17</sup> *AmerGen Energy Co., LLC* (Three Mile Island Nuclear Station, Unit 1), CLI-05-25, 62 NRC 572, 576 (2005).

<sup>18</sup> *Peach Bottom*, CLI-05-26, 62 NRC at 582.

and related activities in the vicinity of the facility,”<sup>19</sup> engages in “normal, *everyday* activities” in the vicinity,<sup>20</sup> has “*regular*”<sup>21</sup> and “*frequent* contacts”<sup>22</sup> in an area near a licensed facility, or otherwise has visits of a “length” and “nature” showing “an ongoing connection and presence.”<sup>23</sup> Conversely, the agency has denied proximity-based standing where contact has been limited to “*mere occasional trips* to areas located close to reactors.”<sup>24</sup> Mr. McManemy’s trips (sailing and walking) fall within this latter category of contacts.

### III. CONCLUSION

For the reasons above, we *deny* Petitioners’ Petition for Reconsideration.  
IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 28th day of June 2007.

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<sup>19</sup> *Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), LBP-82-4, 15 NRC 199, 204 n.7 (1982) (emphases added).

<sup>20</sup> *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 226 (1974) (emphasis added). *See also Maine Yankee*, LBP-82-4, 15 NRC at 204.

<sup>21</sup> *Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1), LBP-02-14, 56 NRC 15, 26 (2002) (emphasis added) (frequency must reflect “regular interaction” with the zone of harm, not merely “occasional contact”).

<sup>22</sup> *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 & n.22 (1994) (emphasis added). *See also Sequoyah Nuclear Plant*, LBP-02-14, 56 NRC at 26; *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 146, 148 (2001), *aff’d on other grounds*, CLI-01-17, 54 NRC 3 (2001).

<sup>23</sup> *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-98-13, 48 NRC 26, 32 (1998), *petition for review docketed*, No. 05-1419 (D.C. Cir. Nov. 7, 2005). *See also Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 324 (1999).

<sup>24</sup> *Sequoyah Nuclear Plant*, LBP-02-14, 56 NRC at 26 (emphasis added). *See also Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), LBP-79-7, 9 NRC 330, 338 (1979).

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**COMMISSIONERS:**

**Dale E. Klein, Chairman**  
**Edward McGaffigan, Jr.**  
**Jeffrey S. Merrifield**  
**Gregory B. Jaczko**  
**Peter B. Lyons**

**In the Matter of**

**Docket No. 50-255-LT**

**CONSUMERS ENERGY COMPANY,  
NUCLEAR MANAGEMENT  
COMPANY, LLC, ENTERGY  
NUCLEAR PALISADES, LLC,  
and ENTERGY NUCLEAR  
OPERATIONS, INC.**

**(Palisades Nuclear Plant)**

**June 28, 2007**

**RULES OF PRACTICE: PETITION FOR RECONSIDERATION**

A petition for reconsideration exceeds the 10-page limit specified in our regulations. 10 C.F.R. § 2.323(e), incorporated by reference into 10 C.F.R. § 2.341(d), incorporated by reference into 10 C.F.R. § 2.345(a)(2). The last of these regulations governs petitions for reconsideration of final Commission orders.

A petition for reconsideration “must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid.” 10 C.F.R. § 2.345(b). *See also Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006). Petitioners seeking reconsideration of a Commission order must demonstrate that the Commission has committed “clear” error, must do so by raising new arguments, and must not previously have been able to make those

arguments. *Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-21, 65 NRC 519 (2007).

#### **RULES OF PRACTICE: STANDING (PROXIMITY)**

The Commission does not consider granting organizations proximity-based standing merely because their members' domiciles lie within the same zip code as the facility. This is far too imprecise a basis for standing. A "same zip code" test for standing is inappropriate, given that the sizes of zip-code areas vary greatly throughout the country.

#### **RULES OF PRACTICE: STANDING (INJURY)**

In a license transfer case, a petition cannot, for purposes of standing, successfully claim injury based on the financial qualifications and assurances of the transferor.

### **MEMORANDUM AND ORDER**

On May 7, 2007, Michigan Environmental Council and the Public Interest Research Group in Michigan ("Petitioners") filed a Petition for Reconsideration of CLI-07-18, a decision denying their joint petition to intervene in this license transfer proceeding. We based the denial in CLI-07-18 on our findings that Petitioners lacked both representational and organizational standing.

Regarding representational standing, we concluded that Petitioners had submitted no evidence that any of their members had requested representation by either organization. We also concluded that their general references to members' proximity to the Palisades facility were too imprecise to meet our requirements for proximity-based standing.<sup>1</sup>

Regarding organizational standing, we ruled that Petitioners inappropriately sought to play the role of "private attorney general" — a role not contemplated under section 189a of the Atomic Energy Act — which grants a hearing right to only those petitioners with an "interest" in the proceeding.<sup>2</sup> We also concluded that neither Petitioner had shown any risk of "discrete institutional injury *to itself*, other than the general environmental and policy interests of the sort we repeatedly have found insufficient for organizational standing."<sup>3</sup>

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<sup>1</sup> CLI-07-18, 65 NRC at 399, 409-10 (2007).

<sup>2</sup> 42 U.S.C. § 2239(a).

<sup>3</sup> CLI-07-18, 65 NRC at 411-12.

At the outset, we note that the Petition for Reconsideration exceeds the 10-page limit specified in our regulations.<sup>4</sup> But rather than forcing Petitioners to refile their petition, or denying it, we reject the petition on its merits. The reconsideration petition does not satisfy our rigorous regulatory standard that “[a] petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid.”<sup>5</sup> Petitioners seeking reconsideration of a Commission order must demonstrate that the Commission has committed “clear” error, must do so by raising new arguments, and must not previously have been able to make those arguments.<sup>6</sup>

### A. Representational Standing

In an effort to establish representational standing based on the proximity of their members to the Palisades facility, Petitioners have attached to their Petition for Reconsideration two affidavits from their top administrators asserting that some of their members live “within the service territories of Consumers Energy,”<sup>7</sup> or “in close proximity” to the Palisades facility,<sup>8</sup> or “within the same zip code as the location of the Palisades nuclear plant facilities.”<sup>9</sup> These general assertions of proximity are, in several respects, insufficient to establish proximity-based standing.

In making these assertions, Petitioners do not allege any error in CLI-07-18 that “could not have been reasonably anticipated” (as required under 10 C.F.R. § 2.345(b)). Nor do they claim that CLI-07-18 is “invalid” (also required under that same section), given the record on which it was based. Instead, they seek to supplement the record to correct the deficiencies of their Petition To Intervene. This eleventh-hour attempt is improper because it violates “our prohibition against raising new arguments in a motion for reconsideration.”<sup>10</sup> It is not acceptable in NRC practice for a petitioner to claim standing based on vague

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<sup>4</sup> 10 C.F.R. § 2.323(e), incorporated by reference into 10 C.F.R. § 2.341(d), incorporated by reference into 10 C.F.R. § 2.345(a)(2). The last of these regulations governs petitions for reconsideration of final orders such as CLI-07-18.

<sup>5</sup> 10 C.F.R. § 2.345(b). *See also Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006).

<sup>6</sup> *Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-21, 65 NRC 519 (2007).

<sup>7</sup> Affidavit of Dr. Michael P. Shriberg at 3 (May 7, 2007) (regarding Public Interest Research Group in Michigan), attached as Exhibit C to Petition for Reconsideration.

<sup>8</sup> Affidavit of Linda Pollack at 3 (May 7, 2007) (regarding Michigan Environmental Council), attached as Exhibit B to Petition for Reconsideration.

<sup>9</sup> Shriberg Affidavit at 3. *See also* Pollack Affidavit at 3.

<sup>10</sup> *Diablo Canyon*, CLI-06-27, 64 NRC at 402.

assertions, and when that fails, to attempt to repair the defective pleading with fresh details offered for the first time in a petition for reconsideration.

Also, Petitioners' latest assertions here are not supported by affidavits or other forms of authorization by the members who purportedly live close to Palisades, empowering either Petitioner to represent their interests. We have explained this "authorization" requirement in our case law — most recently in CLI-07-18 itself.<sup>11</sup> This longstanding requirement precludes Petitioners from persuasively claiming either that they "could not have . . . reasonably anticipated"<sup>12</sup> the need to submit evidence of authorization, or that CLI-07-18 erred in citing this omission as a reason why Petitioners had not shown proximity-based standing.

Further, Petitioners' new assertions of proximity are still too general, and Petitioners ignore CLI-07-18's discussion about the need to *specify* the distance between a licensed facility and a petitioner's (or its member's) home, work, or activities. In CLI-07-18, we *expressly* indicated that the first two proffered justifications for proximity-based standing described above (concerning "service territory" and "in close proximity") were too vague to pass muster. Specifically, we rejected as insufficient Petitioners' assertion that some of their members "liv[ed] within Consumers' service territory"<sup>13</sup> and their claim that members "live, work, or engage in recreation adjacent and near the . . . facilities."<sup>14</sup> And regarding the latter, we also cited two NRC decisions rejecting proximity-based standing arguments based on claims of domiciles "close" to transportation routes for nuclear materials, and activities in "close proximity" to a regulated facility.<sup>15</sup> So again, our precedent on this issue and our discussion in CLI-07-18 preclude Petitioners from meeting the reconsideration standard that their argument address an error in CLI-07-18 that "could not have been reasonably anticipated."<sup>16</sup>

Likewise, we reject Petitioners' third "standing" claim based on their members' domiciles lying within the same zip code as the Palisades facility. This is far too imprecise a basis on which to grant proximity-based standing. We would be unwise to establish a "same zip code" test for standing, given that the sizes of zip-code areas vary greatly throughout the country.

## **B. Organizational Standing**

We indicated in CLI-07-18 that a petitioner's claim of standing (including

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<sup>11</sup> CLI-07-18, 65 NRC at 409, and cited authority.

<sup>12</sup> 10 C.F.R. § 2.345(b).

<sup>13</sup> CLI-07-18, 65 NRC at 410.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.* at 410 n.27.

<sup>16</sup> 10 C.F.R. § 2.345(b).

organizational standing) must include a demonstration of actual or threatened injury.<sup>17</sup> Petitioners have still not made this demonstration.

Petitioners claim injury stemming from Consumers Energy's alleged failure to contribute to the federal government's Nuclear Waste Fund, the Palisades decommissioning fund, and the Big Rock Point decommissioning fund several hundred million dollars that Consumers Energy had collected from Michigan ratepayers. They also assert that they are injured by the fact that those "funds were unsecured on [Consumers Energy's] books."<sup>18</sup>

We see three problems with these claims of injury. Initially, as we explained in CLI-07-18, issues involving the Big Rock Point ISFSI license transfer fall outside the scope of this proceeding.<sup>19</sup> The Big Rock Point ISFSI proceeding was the subject of a separate notice in the *Federal Register*<sup>20</sup> and has been addressed in a separate, now-closed adjudication.<sup>21</sup>

Further, Petitioners' claims of injury stem from the purported financial transgressions of the *current* owner, Consumers Energy. Yet, the relevant fiscal issues in a license transfer case concern the financial qualifications and assurances of the *future* owner, Entergy. Consequently, this license transfer proceeding is simply the wrong forum in which to proffer Petitioners' arguments. To the extent they believe Consumers Energy has violated any of our financial-qualification or financial-assurance regulations, they may file an enforcement petition under 10 C.F.R. § 2.206.

Finally, Petitioners have given us no reason to question our prior ruling that they:

seek to play the role of a "private attorney general" — a role that AEA § 189 — which grants a hearing right to those with an "interest" in the proceeding — does not contemplate. Neither . . . [p]etitioner has shown any risk of "discrete institutional injury *to itself*," other than the general environmental and policy interests of the sort we repeatedly have found insufficient for organizational standing."<sup>22</sup>

In sum, we see no reason to change our ruling in CLI-07-18 that Petitioners have failed to demonstrate either representational or organizational standing to intervene in this proceeding. We therefore *deny* their Petition for Reconsideration.

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<sup>17</sup> CLI-07-18, 65 NRC at 408-09.

<sup>18</sup> Petition for Reconsideration at 7-9.

<sup>19</sup> CLI-07-18, 65 NRC at 408.

<sup>20</sup> 72 Fed. Reg. 4302 (Jan. 30, 2007).

<sup>21</sup> See *Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-19, 65 NRC 423 (2007), *reconsid'n denied*, CLI-07-21, 65 NRC 519 (2007). Petitioners in the present proceeding did not file a Petition To Intervene in the *Big Rock Point ISFSI* adjudication.

<sup>22</sup> CLI-07-18, 65 NRC at 411-12 (footnotes omitted; emphasis in original).



Separately, on May 22, 2007, we received Van Buren County's and Covert Township's Notice of Withdrawal. Their withdrawal, when combined with today's denial of the Petition for Reconsideration, removes the last actual or potential intervenors from this adjudication. Given this development, we *dismiss* this adjudicatory proceeding.

IT IS SO ORDERED.

For the Commission

ANNETTE L. VIETTI-COOK  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 28th day of June 2007.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:**

**Alan S. Rosenthal**, Chairman  
**Dr. Richard E. Wardwell**  
**Dr. William H. Reed**

In the Matter of

Docket No. 40-7102-MLA  
(ASLBP No. 07-852-01-MLA-BD01)

**SHIELDALLOY METALLURGICAL  
CORPORATION**  
(License Amendment Request for  
Decommissioning of the Newfield,  
New Jersey Facility)

June 18, 2007

**MEMORANDUM AND ORDER**

(Addressing Filings of the Parties Directed by Commission in CLI-07-20)

**I. BACKGROUND**

1. This proceeding involves an application by the ShieldAlloy Metallurgical Corporation (Licensee) for an amendment to its Source Material License No. SMB-743. If granted, the amendment will authorize, in accordance with a submitted plan, the decommissioning of the Licensee's New Jersey facility where the Licensee's activities had been conducted. These activities produced on the Newfield site a large pile of slag and baghouse dust that is contaminated with uranium and thorium.

In LBP-07-5, 65 NRC 341 (2007), this Board passed upon a number of requests that had been filed seeking a hearing on one aspect or another of the submitted decommissioning plan (DP). For the reasons set forth in that decision,

all but one of those requests were denied as not satisfying the requirements of the Commission's Rules of Practice. The one exception was that filed by the New Jersey Department of Environmental Protection (New Jersey). That request was granted on a determination that the requestor both had standing and had submitted at least one contention that satisfied the Rules' requirements.<sup>1</sup>

After reaching that determination, the Board examined whether it should consider at this juncture the viability of the other New Jersey contentions, the admissibility of all of which had been challenged by at least the Licensee. After giving the matter full consideration, and for reasons that will be discussed in greater detail later in this Order, the Board reached two conclusions: (1) that all further proceedings on the New Jersey hearing request should be deferred to await the completion of the NRC Staff review of the DP and the issuance of its Safety Evaluation Report (SER) and Environmental Impact Statement (EIS); and (2) that there was neither need nor cause to consider the remainder of the New Jersey contentions pending the outcome of the technical review.<sup>2</sup> At this point, it suffices to note that there appeared to the Board a substantial possibility, if not probability, that, as a result of the technical review, the DP would undergo significant alterations that might render many, if not most, of New Jersey's current contentions either academic or in need of major revision.

Although perceiving no possible reason why such deferral might impact the effectiveness of the hearing process or, more importantly, prejudice the legitimate interests of any of the parties, the Board explicitly invited the filing of motions for reconsideration of the deferral.<sup>3</sup> No motion seeking that relief was filed within the prescribed period by the Licensee, New Jersey, or the NRC Staff. The Board accordingly assumed that each of those parties concurred in its judgment that the deferral of all further proceedings, including a determination on the admissibility of the remaining New Jersey contentions, was fully warranted.

On May 8, as a followup to the deferral determination, the Board issued an order directing the NRC Staff to file bimonthly status reports, with the first due on June 8, 2007. The reports were to contain both "(1) a brief statement regarding the then status of the technical review; and (2) the Staff's then best estimate as to the completion date of the review and the release of the documents associated with it."<sup>4</sup>

2. One of the Petitioners whose hearing request had been denied in LBP-07-5 elected to appeal the denial to the Commission. In CLI-07-20, the appeal was rejected. Before taking that action, however, the Commission addressed, as a "PRELIMINARY MATTER," the Board's decision to defer the consideration of

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<sup>1</sup> See LBP-07-5, 65 NRC at 353-58.

<sup>2</sup> *Id.* at 358-62.

<sup>3</sup> See *id.* at 362-63.

<sup>4</sup> Licensing Board Order (Directing the Filing of Status Reports) (May 8, 2007) at 2 (unpublished).

New Jersey's remaining contentions pending completion of the Staff's technical and environmental review.<sup>5</sup>

At the inception of its discussion of that matter, the Commission observed that "[i]n general, we do not endorse deferring the consideration of proposed contentions because, in our view, prompt consideration of contentions promotes the efficient and complete development of the record while conserving resources."<sup>6</sup> It then went on to acknowledge, however, that "deferral may be appropriate in some very limited and exceptional circumstances."<sup>7</sup> In that connection, it took note of this Board's belief "that 'there is at least a considerable measure of current uncertainty as to whether, at the end of the day, the decommissioning of the Licensee's site will take the form that is contemplated by the [DP] now in hand.'"<sup>8</sup> The Commission then noted that none of the parties had accepted this Board's invitation to seek reconsideration of its deferral and announced that it would not "disturb the Board's view for now."<sup>9</sup> Nonetheless, stating that its "acquiescence in the Board's approach is conditional" and pointing to the Board-imposed requirement that the Staff file a status report by June 8, 2007, the Commission directed that certain other filings be made with the Board by the same date.<sup>10</sup> Specifically, the Licensee was instructed to disclose the status of its DP, as well as "any relevant developments such as fundamental shifts in [its] approach to decommissioning the site."<sup>11</sup> Further, all parties were to "weigh in on the Board's approach."<sup>12</sup>

3. On June 7, the Board received the filings of both the Licensee and New Jersey in compliance with the Commission's directive. With regard to the status of its DP, the Licensee noted that it was currently under NRC Staff review and that certain Staff requests for information in connection with the environmental review had been, or were in the process of being, answered.<sup>13</sup> On that score, the report disclosed that the Licensee had agreed to a reperformance of its dose analysis to include consideration of the groundwater pathway.<sup>14</sup> Subject to the results of the Staff review, however, the Licensee contemplated "making no changes to its proposed approach to the decommissioning of Newfield."<sup>15</sup> Then turning to the

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<sup>5</sup> CLI-07-20, 65 NRC 499 (2007).

<sup>6</sup> *Id.* at 501.

<sup>7</sup> *Ibid.*

<sup>8</sup> *Ibid.* (quoting LBP-07-5, 65 NRC at 361).

<sup>9</sup> *Id.* at 501-02.

<sup>10</sup> *Id.* at 502.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

<sup>13</sup> ShieldAlloy's Report to the Board Pursuant to CLI-07-20 (June 7, 2007) at 1.

<sup>14</sup> *See id.* at 2.

<sup>15</sup> *Ibid.*

matter of deferring consideration of New Jersey's other contentions, the Licensee opined that the Board had not abused its discretion in taking that action given that the "NRC Staff's review of the proposed decommissioning plan [might] result in the mooting, withdrawal or dismissal of some of the pending contentions."<sup>16</sup> As the Licensee saw it, in the "current circumstances" the course adopted by the Board posed "no significant schedule impact at this time."<sup>17</sup>

In its report, which took the form of a letter from its lawyers to the Board Chairman, New Jersey reached precisely the same conclusion as had the Licensee regarding the appropriateness of the Board's deferral. In that connection, New Jersey pointed to the fact that the additional information that the Staff had sought of the Licensee covered a wide range of issues and portended revisions to the DP that might well "obviate existing contentions" and give rise to new ones.<sup>18</sup>

Thus, the two parties with the principal interest in the proceeding — the Licensee, which wishes to have its DP approved, and New Jersey, which seeks its rejection in favor of a different approach to the decommissioning of the pile — were in agreement that, in the particular circumstances of this case, the Board's determination on contention deferral made good sense. Given that it had not taken advantage of the invitation to seek reconsideration of that determination, one might have thought that agreement would have extended to the NRC Staff as well. Such, however, is not the case.

On June 8, the Staff filed separately the status report directed by the Board's May 8 Order and the submission called for by CLI-07-20. In the former document, the Staff reported that it had commenced in October 2006 its technical review of both the environmental and safety-related aspects of the DP and that Environmental and Safety Review teams had been assembled.<sup>19</sup> The Report went on to note the March issuance by the Environmental Review team of a Request for Additional Information (RAI) and the Licensee's response to it.<sup>20</sup> The Safety Review team is expected to issue its own RAI later this month that will encompass certain issues that New Jersey had raised in comments that it had supplied to the Staff in March.<sup>21</sup> On the matter of when the technical review might be completed and the associated documents issued, the Staff provided as its best current

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<sup>16</sup> *Ibid.*

<sup>17</sup> *Ibid.*

<sup>18</sup> State of New Jersey Letter Response (June 7, 2007) at 3.

<sup>19</sup> NRC Staff's First Status Report (June 8, 2007) at 1-2 [hereinafter Staff's Status Report].

<sup>20</sup> *See ibid.*; "Request for Additional Information for Environmental Review of Proposed Decommissioning Plan for Shieldalloy Metallurgical Corporation, Newfield, New Jersey" (Mar. 19, 2007) (ADAMS Accession No. ML070780139) [hereinafter Environmental RAI].

<sup>21</sup> *See* Staff's Status Report at 2.

estimates the following: issuance of final SER in January 2008; publication of draft EIS in March 2008; and issuance of final EIS in October 2008.<sup>22</sup>

In its separate Response to the Commission's May 30, 2007 Order and Request for Ruling on Proposed Contentions, filed on June 8, the Staff stated its current belief that the Board should now pass upon the admissibility of the remaining New Jersey contentions, a belief based largely on the proposition that deferral "prevents the parties from promptly ascertaining the matters truly at issue in a proceeding."<sup>23</sup> More particularly, we are now told that "[w]ithout rulings on the remaining proposed contentions, the parties will also have to ensure that key witnesses are available to support the party's positions on each issue in litigation."<sup>24</sup> Proceeding further, the Staff is concerned that "the schedules of certain individuals will have to be kept open to accommodate prehearing preparations, as well as the hearing itself."<sup>25</sup> Accordingly, the Board is asked either to pass upon the remaining contentions now or to certify to the Commission the question of whether "deferring a ruling on [those] contentions is consistent with Commission policy."<sup>26</sup>

## II. ANALYSIS

1. Although it might not have specifically employed the term "exceptional circumstances" in concluding that there was warrant for a deferral of consideration of New Jersey's remaining contentions to abide the completion of the technical review, it is apparent from the discussion in LBP-07-5 that the Board deemed such circumstances to exist. Specifically, the Board pointed to the several reasons why a substantial possibility existed that, at the end of the day, what would be before the Board for adjudication would be a DP that bore little or no resemblance to that which is now at hand — and to which all of New Jersey's current contentions are addressed. Among other things, the Board took particular note of the fact that it had been suggested to the Licensee by a Commissioner of this agency, both orally

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<sup>22</sup> *Ibid.*

<sup>23</sup> NRC Staff's Response to Commission's May 30, 2007 Order and Request for Ruling on Proposed Contentions (June 8, 2007) at 5 [hereinafter Staff's Response].

<sup>24</sup> *Id.* at 6.

<sup>25</sup> *Ibid.*

<sup>26</sup> *Id.* at 8. Curiously, although insistent that the Board move forward with the consideration of the remaining New Jersey contentions, the Staff entertained no difficulty in endorsing the Board's further determination in LBP-07-5 that the Staff's obligation to submit the hearing file be deferred pending the outcome of the technical review. *Ibid.* One might have thought that the same trial preparation concerns that prompted the Staff's change of position on the contention deferral matter would have produced a conclusion that the hearing file should be made available at this time. Indeed, it would appear that the availability of that file is an important element of trial preparation.

at the time of a site visit to the Newfield facility and in a letter sent thereafter, that consideration be given to moving the pile off of the Newfield site.<sup>27</sup> As the Board saw it, even in the absence of such a suggestion the Staff would be duty-bound to consider that alternative, among many others, in the course of the environmental review.<sup>28</sup> Were it to be adopted, New Jersey's contentions, all of which assume the pile remaining where it now is located, would become irrelevant. Likewise, were the Staff to conclude that there must be a decided alteration in the covering now proposed for the pile, the existing New Jersey contentions would almost certainly require substantial alteration at a minimum.

The short of the matter is that, insofar as concerns the issue under present consideration, there is an enormous difference between, on the one hand, this decommissioning case and, on the other, the cases that are concerned with (for example) facility construction or operation. In the latter, there is considerably less likelihood that, as a consequence of the Staff review of the application on the table, the contentions advanced by a hearing requestor will have been rendered wholly or substantially academic. It is thus not surprising that licensing boards have deferred contention admissibility consideration in but two cases — the other one being *U.S. Army* (Jefferson Proving Ground Site), LBP-06-6, 63 NRC 167 (2006). That proceeding also involved the decommissioning of a site on which radioactive material had accumulated. As in the present one, the Board found reason to believe that the contentions initially submitted by the hearing requestor likely would require substantial alteration as a result of the outcome of the technical review, with the consequence that a deferral of consideration of them was called for in the interest of the most economical use of Board resources.<sup>29</sup> As it turned out, that forecast proved to be on target. *See U.S. Army* (Jefferson Proving Ground Site), LBP-06-27, 64 NRC 438 (2006).

2. As we see it, the question now before us is whether anything contained in the recent submissions of the parties might counter the foregoing analysis and thus impact the conditional approval of contention deferral conferred in CLI-07-20. We conclude not. To the contrary, it is clear to us that the additional information supplied in those submissions fully supports the explicit endorsement of the deferral that has been provided by the two parties with the principal stake in the outcome of the proceeding — the Licensee and New Jersey. Of perhaps still greater significance, that information lays bare the crucial flaws in the Staff's insistence that the parties would be benefitted by a ruling on the remaining New Jersey contentions at this time.

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<sup>27</sup> *See* LBP-07-5, 65 NRC at 360.

<sup>28</sup> Even were the Staff to conclude that the pile need not be transferred to a different location, it might well take issue with the Licensee's proposal to cap the pile with native soil and rock — one of the aspects of the DP of particular concern to New Jersey.

<sup>29</sup> *U.S. Army*, LBP-06-6, 63 NRC at 185-86.

To begin with, we are now told by the Staff that its technical review will not be completed until the issuance of its Final EIS at a date no earlier than some time in October 2008. That being the case, it perforce will be at least 2009 before this case will be ready for an evidentiary hearing on whatever contentions might be viable in light of what is concluded in that document and the previously issued SER. In that circumstance, we are totally unable to understand how, particularly given the existing uncertainty regarding the final form site decommissioning will take, the Staff can seriously maintain that the parties need to be in a position to determine at this juncture what expert witnesses might be required (or not required) to address the contentions that ultimately will be litigated. To us, at least, it seems hardly likely that the Staff — or either of the other parties for that matter — is formulating witness lists, preparing its litigating positions, and reserving times on its schedules some 18 months in advance of the earliest time that a hearing might take place. And, once again, neither of the other parties has expressed any such concern.

There is, however, a more fundamental difficulty with the Staff's thesis. The Staff necessarily assumes that, contrary to the belief of the Board that undergirded the deferral decision, it can now be determined with relative certainty what issues will be open for litigation once the technical review is concluded. Nothing is offered, however, in support of that premise — indeed, the Staff simply ignores the Board's justification in LBP-07-5 for the deferral determination. Moreover, the unsupported premise is plainly undercut by the RAI that the Staff issued to the Licensee in March as part of its environmental review.<sup>30</sup> We need not detail here the content of the inquiry on the fourteen distinct topics covered in the RAI. Suffice it to note that the broad range of information sought by the Staff (some of it seemingly paralleling concerns that had been voiced by New Jersey) buttresses the real possibility — if not probability — that, at the end of the review process, the decommissioning plan will be altered to an extent that renders many, if not all, of the current New Jersey contentions academic in whole or significant part.

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In sum, the Board remains persuaded that, for the reasons developed in LBP-07-5, considerations of efficiency in the employment of its resources fully justifies the contention deferral now belatedly challenged by the NRC Staff but endorsed by the other parties. Although mindful of the concerns expressed in CLI-07-20, we feel entirely justified in looking at the unique facts in this case as providing the “exceptional circumstances” that the Commission indicated might support such a course.

The undeniable fact is that there is no practical limit to the options that must be considered by the Staff in passing judgment on the acceptability of a submitted

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<sup>30</sup> See Environmental RAI, *supra* note 20.



decommissioning plan — in this instance, requiring the movement of the pile to another location or insisting upon a different covering are but two of them. It is that consideration that sets apart this proceeding from the bulk of NRC adjudications where it can be determined at the outset with reasonable certainty what the proposal under attack will look like when it reaches the hearing stage. In the vast majority of cases coming before licensing boards, it therefore might make eminent sense to have the admissibility of all contentions determined at the threshold. By the same token, however, little is gained by expending time and effort in the evaluation of contentions in cases, such as that at bar, that are concerned with decommissioning plans that are so readily susceptible of major revision as the proceeding moves forward.

Accordingly, we *reject* the Staff's request that we now proceed to determine the admissibility of New Jersey's remaining contentions. We also *deny* the Staff's alternative request that the matter be certified to the Commission. Given its earlier *sua sponte* interest in this matter, should it determine that further action on its part is warranted the Commission will not require a certification from us to give effect to that determination.

It is so ORDERED.

THE ATOMIC SAFETY AND  
LICENSING BOARD\*

Alan S. Rosenthal, Chairman  
ADMINISTRATIVE JUDGE

Dr. Richard E. Wardwell  
ADMINISTRATIVE JUDGE

Dr. William H. Reed  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
June 18, 2007

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\*Copies of this Memorandum and Order were sent this date by Internet electronic mail transmission to counsel or other representative for (1) the Licensee, (2) the NRC Staff, and (3) the State of New Jersey.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:**

**Alex S. Karlin**, Chairman  
**Dr. Richard F. Cole**  
**Dr. Thomas S. Elleman**

**In the Matter of**

**Docket No. 52-008-ESP**  
**(ASLBP No. 04-822-02-ESP)**

**DOMINION NUCLEAR NORTH**  
**ANNA, LLC**  
**(Early Site Permit for North Anna**  
**ESP Site)**

**June 29, 2007**

**MANDATORY HEARINGS: SCOPE OF REVIEW**

The role of the Board in complying with the mandate of the Atomic Energy Act § 189 is to independently evaluate the record and the adequacy of the Staff's review and then to decide six fundamental issues that are specified by the law and regulations.

**MANDATORY HEARINGS: SCOPE OF REVIEW (SAFETY ISSUES AND OVERRIDING NEPA ISSUE)**

For three issues (two under AEA and one under the NEPA) the Board must review the *sufficiency of the record* and the *sufficiency of the NRC Staff's review*, and decide if they are *adequate to support the Staff's proposed findings*. See 10 C.F.R. § 2,104(b)(2). For these issues, the Board's role is analogous to that of an appellate court applying the "substantial evidence" test. *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005) (*Clinton I*).

**MANDATORY HEARING: SCOPE OF REVIEW (NEPA BASELINE ISSUES)**

For the “NEPA Baseline Issues,” the Board has a “special responsibility” and the scope of the Board’s review is significantly different. *Clinton I*, 62 NRC at 30. For these issues the Board is not merely reviewing the sufficiency of the record and the adequacy of the Staff’s review and findings, but instead “must reach [its] own independent determination of uncontested NEPA ‘baseline’ questions.” *Id.* at 45.

**MANDATORY HEARINGS: SCOPE OF REVIEW (UNCONTESTED MATTERS)**

For all six fundamental issues the Board is to make its decisions without conducting a “*de novo*” review. This means that “the NRC Staff’s underlying *technical and factual findings* are not open to board reconsideration unless, after a review of the record, the board finds the NRC Staff review inadequate or its findings insufficient.” *Clinton I*, 62 NRC at 39-40 (emphasis added). The “no *de novo* review” approach, however, does not change the Board’s responsibility to independently interpret and apply the *law* and to decide the six ultimate issues in an uncontested ESP case such as this.

**MANDATORY HEARINGS: SCOPE OF REVIEW (BASELINE NEPA ISSUES)**

While generally accepting the technical and factual findings of the Staff, the Board must independently decide (a) whether NEPA §§ 102(2)(A), (C), and (E) have been complied with, (b) the final balance among conflicting factors, and (c) whether the ESP should be issued, denied, or appropriately conditioned.

**MANDATORY HEARINGS: AEA SAFETY ISSUE 1**

The first of the six fundamental decisions that a board must make in a mandatory hearing is whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of the ESP will be inimical to the common defense and security or to the health and safety of the public. *Clinton I*, 62 NRC at 33 n.32. A decision on this issue, referred to as “AEA Safety Issue 1,” is mandated by section 103d of the AEA and 10 C.F.R. § 50.40(c).

#### **MANDATORY HEARINGS: AEA SAFETY ISSUE 2**

The second of the six fundamental decisions that a board must make in a mandatory hearing is whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a positive finding that, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors having the characteristics that fall within the parameters of the site, can be constructed without undue risk to the health and safety of the public. *Clinton I*, 62 NRC at 33 n.32. A decision on this issue, referred to as “AEA Safety Issue 2,” is mandated by 10 C.F.R. § 52.21.

#### **MANDATORY HEARINGS: OVERRIDING NEPA ISSUE**

The third of the six fundamental decisions that a board must make in a mandatory hearing is whether the review conducted by the Commission pursuant to NEPA, has been adequate. *Clinton I*, 62 NRC at 33 n.34. A decision on this issue, referred to as the “Overriding NEPA Issue,” is required by *Calvert Cliffs’ Coordinating Committee, Inc. v. AEC*, 449 F.2d 1109 (D.C. Cir. 1971) and 10 C.F.R. § 51.105(a)(4).

#### **MANDATORY HEARINGS: NEPA BASELINE ISSUE 1**

The fourth of the six fundamental decisions that a board must make in a mandatory hearing is whether the requirements of section 102(2)(A), (C), and (E) of NEPA and the regulations in 10 C.F.R. Part 51 have been met. A decision on this issue, referred to as the “NEPA Baseline Issue 1,” is required by *Calvert Cliffs’ Coordinating Committee, Inc. v. AEC*, 449 F.2d 1109 (D.C. Cir. 1971) and 10 C.F.R. § 51.105(a)(1).

#### **MANDATORY HEARINGS: NEPA BASELINE ISSUE 2**

The fifth of the six fundamental decisions that a board must make in a mandatory hearing is to independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken. A decision on this issue, referred to as the “NEPA Baseline Issue 2,” is required by *Calvert Cliffs*, 449 F.2d 1109 and 10 C.F.R. § 51.105(a)(2).

#### **MANDATORY HEARINGS: NEPA BASELINE ISSUE 3**

The sixth of the six fundamental decisions that a board must make in a mandatory hearing is to determine whether the construction permit should be

issued, denied, or appropriately conditioned to protect environmental values. A decision on this issue, referred to as the “NEPA Baseline Issue 3,” is required by *Calvert Cliffs*, 449 F.2d 1109 and 10 C.F.R. § 51.105(a)(3).

#### **EARLY SITE PERMITS: SCOPE OF PERMIT**

The fact that an ESP holder cannot commence construction of the proposed nuclear reactors without obtaining an additional license from the NRC does not mean that an ESP is not an important permit. Once the ESP is issued, the proposed site for the nuclear reactors is “banked” or approved and the regulations applicable to the site are frozen as of the date that the ESP is issued. Once the ESP is issued, “the Commission may not impose new requirements . . . on . . . the site,” 10 C.F.R. § 52.39(a)(1), unless they are “necessary . . . to assure adequate protection of the public health and safety or the common defense and security.” *Id.*

#### **MANDATORY HEARING: DECISION ON SAFETY ISSUE 1**

Although unresolved issues exist and may be addressed if and when Dominion actually applies to construct Unit 3 and/or 4, the Board concludes that the application and the record contain information that is sufficient, and the review by the NRC Staff has been adequate, to support a finding that the issuance of the ESP would not be inimical to the common defense and security or to the health and safety of the public, subject to the permit conditions, COL Action Items, site characteristics and bounding parameters contained in Appendix A to the FSER, and the conditions specified in the Draft Permit.

#### **MANDATORY HEARING: DECISION ON SAFETY ISSUE 2**

After studying the site criteria that the issue specifically refers to, i.e., 10 C.F.R. Part 100, which establishes numerous factors to consider when evaluating a proposed site, the Board concludes, with reference to AEA Safety Issue 2, that Dominion’s application and the record of this proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a positive finding.

#### **MANDATORY HEARING: DECISION ON NEPA BASELINE ISSUE 1 (NEPA § 102(2)(A))**

NEPA § 102(2)(A) requires that the NRC use a “systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and

the environmental design arts in planning and in decisionmaking which may have an impact on man's environment." The Board has no difficulty in concluding that NEPA § 102(2)(A) has been satisfied.

**MANDATORY HEARING: DECISION ON NEPA BASELINE  
ISSUE 1 (NEPA § 102(2)(C))**

The majority of this Board concludes that the FEIS satisfies the requirements of NEPA § 102(2)(C). NEPA § 102(2)(C) requires that, for every major Federal action significantly affecting the quality of the human environment, the NRC must issue a detailed statement by the responsible official on (i) the environmental impact of the proposed action, (ii) any unavoidable adverse environmental effects, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. NEPA § 102(2)(C)(i)-(v), 42 U.S.C. § 4332(2)(C)(i)-(v).

**NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL  
IMPACTS**

While the FEIS did not address one possible environmental impact, i.e., groundwater contamination (and resulting lake impacts) from proposed Units 3 and 4, proposed Permit Condition 4 requires measures to preclude such impacts and, in any event, it is clear that the issue of groundwater impacts must be addressed at the COL stage. In addition, although we have raised the question as to whether the Staff's investigation and discussion of the impacts on minority and low-income populations satisfies the Commission's policy on environmental justice, we believe, on balance, that the FEIS discussion on this matter did not violate NEPA § 102(2)(i).

**NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL  
IMPACTS**

The FEIS provides a sufficient statement of "any adverse environmental impacts which cannot be avoided." 42 U.S.C. § 4332(2)(C)(ii). The issuance of the ESP alone would not authorize construction of Units 3 and 4, but would instead only authorize site preparation and preliminary preparatory work under a 10 C.F.R. § 50.10(e) limited work authorization. If a COL or CP is never issued or ultimately denied, Dominion would be required to redress even such limited site preparation activities and restore the site. 10 C.F.R. § 50.17(c).

**NATIONAL ENVIRONMENTAL POLICY ACT: RANGE OF ALTERNATIVES**

While requiring that “all reasonable alternatives will be identified” and considered by the agency, *see* 10 C.F.R. Part 51, App. A, § 5; 40 C.F.R. § 1502.14, federal courts and the NRC use a “rule of reason” in identifying alternatives and do not require that unreasonable alternatives be examined.

**NATIONAL ENVIRONMENTAL POLICY ACT: RANGE OF ALTERNATIVES**

A project’s goals will determine which alternatives are considered reasonable. *City of New York v. U.S. Department of Transportation*, 715 F.2d 732, 742 (2d Cir. 1983). The agency’s alternatives analysis should be based around the applicant’s goals, including the applicant’s economic goals. *City of Grapevine v. U.S. Department of Transportation*, 17 F.3d 1502, 1506 (D.C. Cir.), *cert. denied*, 513 U.S. 1043 (1994).

**NATIONAL ENVIRONMENTAL POLICY ACT: ALTERNATIVES ANALYSIS**

Based on the record in this proceeding, the majority of the Board concludes that the NRC Staff’s alternative sites description and analysis satisfies NEPA § 102(2)(C)(iii), providing a “detailed statement” of “the alternatives to the proposed action.” 42 U.S.C. § 4332(2)(C)(iii). Having excluded unreasonable alternatives not in keeping with Dominion’s economic goals, the ER and the EIS presented an adequate survey of the reasonable or feasible alternatives, as required. *See Westlands Water District v. U.S. Department of Interior*, 376 F.3d 853, 868 (9th Cir. 2004).

**NATIONAL ENVIRONMENTAL POLICY ACT: ALTERNATIVES ANALYSIS**

It was not reasonable or necessary to consider, as a system design alternative to the application for an ESP for Units 3 and 4, the imposition of water conservation measures on preexisting Units 1 and 2.

**NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL IMPACTS**

We agree with the Staff that discussion of the “relationship between local short-term uses of man’s environment and the maintenance and enhancement

of long-term productivity,” NEPA § 102(2)(C)(iv), should be performed if and when the ESP holder applies for a construction permit or combined operating license.

#### **NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL IMPACTS**

Because the granting of the ESP would not, in itself, authorize any activity that would have any such irreversible or irretrievable commitments, NEPA § 102(2)(C)’s required description of “any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented” has been met.

#### **MANDATORY HEARING: DECISION ON NEPA BASELINE ISSUE 2**

NEPA Baseline Issue 2 requires the Board to “independently consider [and decide] the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken.” 10 C.F.R. § 51.105(a)(2). While we cannot do a NEPA *cost-benefit* analysis, or final *balance* among conflicting factors at this time, this Board has considered, probed, and independently balanced such factors as are covered within the limited ambit of the ESP FEIS, and determines that the appropriate action to be taken is to issue the proposed ESP with the proposed permit conditions contained in Staff Exhibit 17.

#### **MANDATORY HEARING: DECISION ON NEPA BASELINE ISSUE 3**

NEPA Baseline Issue 3 requires the Board to “determine . . . whether the construction permit . . . should be issued, denied, or appropriately conditioned to protect environmental values. We believe that our answer to NEPA Baseline Issues 1 and 2 suffices here and that the ESP should be issued, with the conditions that we have specified.

#### **MANDATORY HEARING: DECISION ON OVERRIDING NEPA ISSUE**

Within the limitations of the ESP environmental analysis, e.g., no assessment of benefits or cost-benefit analysis, and recognizing that there are various unresolved



issues under 10 C.F.R. § 52.39 that must be addressed if and when a COL or CP is sought, we conclude that the NEPA review by the NRC Staff was adequate.

#### **NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL JUSTICE (NRC)**

The paucity of Environmental Justice analysis, investigation, and information in the FEIS raises doubts as to whether the Staff has complied with the NRC EJ Policy that requires that the Staff provide an EJ analysis “in greater detail” when the low-income or minority population thresholds are met. Under these circumstances, and given that the Commission will necessarily review any initial ESP decision such as this one, the Board suggests that the Commission consider addressing the somewhat novel question as to what it expects the Staff to do when, under the NRC EJ Policy, an EJ analysis “in greater detail” is required.

#### **EARLY SITE PERMITS: REGULATORY STANDARDS**

When an applicant is proposing to locate additional reactors on a site where a different licensee already operates two nuclear reactors that already exist, it is important to understand how the various regulatory limits apply to each reactor, licensee, and site, and how these limits are allocated as between the existing and new reactors and licenses.

#### **EARLY SITE PERMITS: REGULATORY STANDARDS**

Regulatory gaps arise from the multiplicity of reactor designs included within Dominion’s PPE. It is unclear how we should assess whether the applicant’s gas-cooled reactor designs (i.e., the Pebble Bed Modular Reactor design and the Gas Turbine–Modular Helium Reactor design) satisfy AEA safety standards, when the main safety standards issued by NRC deal only with a fundamentally different design — light-water-cooled reactors.

#### **EARLY SITE PERMITS: REGULATORY STANDARDS**

NRC regulations are unclear as to how the 25-mrem limit in 40 C.F.R. § 190.10 and 10 C.F.R. § 20.1301(e) is to be allocated between an existing licensee on a site (VEPCO/ODEC) and an applicant considering the construction of additional nuclear reactors on the same site (Dominion). It is also unclear what rational principle and legal standard the NRC Staff will use in allocating legal liability if the 25-mrem standard is exceeded. As a matter of regulatory clarity for the licensees and the public, it might be prudent for NRC to articulate this rational

principle and/or allocate the 25-mrem limit of 10 C.F.R. § 190.10 in a permit condition at the outset.

### **EARLY SITE PERMITS: ADEQUATE INFORMATION**

While an ESP applicant is not required to provide “detailed design” information concerning each of the types of reactor designs covered by the application and may provide a “plant parameter envelope” instead, problems may arise when the ESP application does not include significant PPE values. It is unclear how this would meet the requirement that an ESP applicant provide “adequate information” or NRC’s bar on “partial ESPs.” It is also unclear how many holes or “unresolved issues” there can be in a PPE before it runs afoul of the Commission’s policy and when the Staff should decline to issue an ESP and advise the applicant to instead consider an Early Partial Decision on Site Suitability pursuant to 10 C.F.R. Part 2, Subpart F.

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## INITIAL DECISION

This Initial Decision sets forth this Board's findings, conclusions, and decisions on six issues that law and regulation mandate must be decided on this uncontested application by Dominion Nuclear North Anna, LLC (Dominion) for an early site permit (ESP). As described below, the Board determines that the NRC Staff's review of the application has been adequate, and the record of this proceeding sufficient, to support the Atomic Energy Act (AEA) safety-related findings necessary for issuance of the ESP. Further, a majority of the Board has independently determined that the relevant requirements of the National Environmental Policy Act (NEPA) and NRC's NEPA regulations have been satisfied and has decided that the ESP should be issued, subject to the proposed permit conditions included in Staff Exhibit 17, and subject to the permit conditions, combined operating license (COL) action items, site characteristics, and plant parameter envelope values, representations, assumptions and unresolved issues specified in Appendices I and J to the Staff's Final Environmental Impact Statement, and Appendix A of the Final Safety Evaluation Report.

Pursuant to 10 C.F.R. § 2.340(f), this Initial Decision is not effective until the Commission completes its review and takes final agency action. *See Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203, 205 (2007) (*Clinton II*).

### I. INTRODUCTION

On September 25, 2003, Dominion filed an application with the Nuclear Regulatory Commission (NRC or Commission) for an ESP under 10 C.F.R. Part 52, Subpart A, seeking approval to locate additional nuclear power reactors, generating up to a total of 9000 megawatts thermal (MWt), at a site near the shore of Lake Anna in Louisa County, Virginia (the proposed ESP Site).<sup>1</sup> The defining characteristic of the proposed ESP Site is that it is located wholly within the "North Anna Power Station" site (NAPS Site) where two nuclear power reactors already exist and have operated since 1980.<sup>2</sup>

The NAPS Site and the ESP Site are jointly owned by Virginia Electric and Power Company (VEPCO) and the Old Dominion Electric Cooperative (ODEC).<sup>3</sup>

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<sup>1</sup> NUREG-1811, "Environmental Impact Statement for an Early Site Permit (ESP) at the North Anna ESP Site Final Report" (Dec. 2006) (Staff Exhibit 3) at 10-1 [FEIS].

<sup>2</sup> Rev. 9 to North Anna ESP Application at 1-1-1 (Sept. 2006) [Appl.].

<sup>3</sup> Dominion's Response to the Licensing Board's January 18, 2007 Order (Issuing Safety-Related Questions) (Feb. 8, 2007) at Question 2 [Dominion Answer to Safety Question]; *see* Dominion Exhibit

(Continued)

Dominion itself has no right, title, or ownership interest in the proposed ESP Site. *Id.* The two nuclear power plants currently located on the NAPS Site, denominated “Unit 1” and “Unit 2,” are also owned by VEPCO and ODEC. *Id.*; FEIS at 2-1. VEPCO and Dominion are both wholly owned subsidiaries of Dominion Resources Inc. (DRI). Appl. at 1-1-1. ODEC is not owned by Dominion, VEPCO, or DRI.

Depending on Dominion’s ultimate selection of reactor type (seven different reactor designs are being considered), the ESP application seeks approval to locate between two to sixteen additional reactors on the site, with Dominion dividing them into two “Units” (Units 3 and 4) of between one to eight reactors each.”<sup>4</sup> Each of the proposed new “units” would be authorized to generate up to 4500 MWt. Appl. at 2-1-3.

An ESP is a special type of NRC permit. An ESP is categorized as a “partial construction permit” under 10 C.F.R. § 52.21. However, its issuance does *not* authorize an applicant to construct nuclear power reactors.<sup>5</sup> Instead, an ESP focuses on the suitability of a proposed *site*, and is defined as a “Commission approval . . . for a site or sites for one or more nuclear power facilities.” 10 C.F.R.

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1 (same); North Anna ESP Safety Inquiries Staff Responses to Safety Questions (Feb. 8, 2007) at Question 2 [Staff Answer to Safety Question]; *see* Staff Exhibit 6 (same).

<sup>4</sup>For instance, if Dominion decides to use the International Reactor Innovative and Secure (IRIS) design, each Unit could have up to three reactors, for a total of six new reactors. If the Gas Turbine–Modular Helium Reactor (GT-MHR) is selected, each Unit could have up to four reactors for a total of eight new ones. If Dominion selects the Pebble Bed Modular Reactor (PBMR) design, then each Unit could have up to eight reactors, for a total of sixteen new reactors. Likewise, if the Advanced CANDU Reactor (ACR) 700 design is selected, each Unit could have up to two reactors, for a total of four new reactors. The other reactor designs covered by the ESP application would each involve only one reactor per Unit. None of these figures include the two existing reactors on the NAPS Site. *See* Exhibit B: North Anna ESP Environmental Questions (Mar. 1, 2007) at Question 6 [Staff Answer to Environmental Question]; *see* Staff Exhibit 10 (same); Dominion Response to Environmental Questions (Mar. 1, 2007) at Question 6 [Dominion Answer to Environmental Question]; *see* Dominion Exhibit 3 (same) at 9-10; FEIS at 6-40 and 6-17.

In this regard, we note that Dominion has recently contracted with GE to obtain long-lead components for the ESBWR, *see, e.g.,* Michael Blake, *Dominion Contracts GE for Long-Lead Components*, Nuclear News (June 2007) at 12, which implies that this is the likely reactor of choice if a commitment is made to a new plant. Dominion continues to emphasize that they have not yet made a decision on whether to build any new reactors at the North Anna site.

<sup>5</sup>An ESP holder may not actually commence construction of any reactors on the ESP site without having applied for and received a separate construction permit (CP) or combined operating license (COL) from the NRC. *See, e.g.,* 10 C.F.R. § 52.3. However, if the applicant includes a satisfactory site redress plan, an ESP holder may conduct certain site preparation activities under a “limited work authorization” granted under 10 C.F.R. § 50.10(e). *See* 10 C.F.R. § 52.25. Dominion’s ESP application includes a site redress plan and a request for a limited work authorization. *See* Appl. at 4-1-1.

§ 52.3(b). Even if the ESP is granted, an additional application must be submitted and approved before construction of any new reactors can commence.

## II. PROCEDURAL BACKGROUND

On November 25, 2003, the NRC published a notice of hearing and opportunity for petition for leave to intervene regarding Dominion's ESP application. 68 Fed. Reg. 67,489 (Dec. 2, 2003). It was a "notice of hearing" rather than a "notice of opportunity to request a hearing" because the Atomic Energy Act (AEA) § 189a, 42 U.S.C. § 2239(a), states that "[t]he Commission shall hold a hearing . . . on each application . . . for a construction permit for a facility," regardless of whether any person requests a hearing. In this case, the adjudicatory proceeding started as a contested proceeding, and later changed into an uncontested one.

### A. Contested Proceeding

In response to the notice of hearing, the Blue Ridge Environmental Defense League, the Nuclear Information and Resource Service, and Public Citizen (collectively, Intervenors), jointly filed a timely petition to intervene.<sup>6</sup> The Board, as originally constituted,<sup>7</sup> concluded that the Intervenors had standing and admitted two of their contentions. LBP-04-18, 60 NRC 253, 270-72, 276 (2004).

The two admitted contentions have now been resolved. Contention 3.3.4, "Failure To Provide Adequate Consideration of the No-Action Alternative," was settled and dismissed by mutual agreement of the parties in early 2005.<sup>8</sup> Contention 3.3.2, "Impacts on Striped Bass in Lake Anna," was resolved by summary disposition and dismissed because, subsequent to the admission of this contention, Dominion amended its application and substantially reduced the release of the heated water that, according to Contention 3.3.2, would have caused the problematic impacts on the striped bass. LBP-06-24, 64 NRC 360 (2006); *see infra* note 9. A full description of the resolution of the contested portion of this proceeding is found in our earlier decision, and need not be repeated here.

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<sup>6</sup> Hearing Request and Petition To Intervene by [Intervenors] (Jan. 2, 2004).

<sup>7</sup> As originally constituted, the Board consisted of Judges G. Paul Bollwerk, III, Anthony J. Baratta, and Paul B. Abramson, 69 Fed. Reg. 15,910 (Mar. 26, 2004). The Board was later reconstituted with its current members. 69 Fed. Reg. 49,916 (Aug. 12, 2004).

<sup>8</sup> Licensing Board Order (Approving Settlement and Dismissal of Contention EC 3.3.4) (Jan. 6, 2005) (unpublished).

## B. Uncontested Proceeding

With the Board's dismissal of Contention 3.3.2, the North Anna ESP adjudication became an uncontested proceeding subject to the mandatory hearing requirements of AEA § 189a(1)(A) and 10 C.F.R. § 52.21. However, even an uncontested, mandatory hearing cannot be held until after the NRC Staff completes its environmental and safety reviews of the application. *See* 10 C.F.R. § 2.332(d). In this case, Dominion caused a significant delay in this proceeding by substantially amending its ESP application after the adjudicatory proceeding had begun.<sup>9</sup> This, in turn, required the NRC Staff to redo a significant amount of its work. As a consequence, the NRC Staff did not issue its final supplemental Safety Evaluation Report on Dominion's ESP application until November 2006,<sup>10</sup> and did not issue its FEIS until December 2006.<sup>11</sup> At that point, the Board was able to move forward with the uncontested evidentiary hearing.

On December 14, 2006, the Board held a prehearing conference with the parties for the purpose of expediting the hearing and enabling it to address and resolve the six fundamental issues that must be decided in an uncontested ESP proceeding. Tr. at 484-85. A list of the six fundamental questions is attached hereto as Appendix A. On January 4, 2007, the Board issued its second revised scheduling order (SRSO), setting forth a schedule and certain instructions for the uncontested portion of the proceeding.<sup>12</sup>

Pursuant to the SRSO, the following actions took place: On January 18, 2007, after reviewing Dominion's application and the SER, the Board issued over 100 written questions relating primarily to safety matters.<sup>13</sup> Both parties filed answers to those questions on February 8, 2007.<sup>14</sup> On February 7, 2007, after reviewing the

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<sup>9</sup> Specifically, on January 13, 2006, Dominion submitted a supplement to its application, proposing to change the cooling system in Unit 3 to a closed-cycle cooling system (using a combined wet/dry cooling tower), and to increase the power level of each proposed unit (Units 3 and 4) from 4300 MWt to 4500 MWt. *See* Supplement 1, Safety Evaluation Report for an Early Site Permit (ESP) at the North Anna ESP Site Final Report (Sept. 2006) at 1-2.

<sup>10</sup> NUREG-1835, "Safety Evaluation Report for an Early Site Permit (ESP) at the North Anna ESP Site Final Report" (Nov. 2006) (Staff Exhibit 1) [FSER].

<sup>11</sup> Notice of Availability of [FEIS] for an [ESP] at the North Anna ESP Site, 71 Fed. Reg. 76,705 (Dec. 21, 2006).

<sup>12</sup> Licensing Board Order (Second Revised Scheduling Order) (Jan. 4, 2007) (unpublished).

<sup>13</sup> Licensing Board Order (Issuing Safety-Related Questions) (Jan. 18, 2007) (unpublished) [Board Safety Questions].

<sup>14</sup> Dominion Answer to Safety Question; NRC Staff Legal Brief in Response to Licensing Board's Safety-Related Questions (Feb. 8, 2007) [NRC Staff Legal Safety Brief]; Staff Answer to Safety Question; [Multiple Affidavits] Concerning NRC Staff Response to the Licensing Board's Safety-Related Questions (Feb. 8, 2007), ADAMS Accession No. ML070400293. Dominion filed its supporting affidavits at a later date. *See* Dominion's Declarations Supporting Response to the Licensing Board's January 18, 2007 Order (Issuing Safety-Related Questions) (Feb. 26, 2007).

application and the FEIS, the Board issued over 100 written questions primarily related to environmental matters.<sup>15</sup> On March 1, 2007, and March 7, 2007, each of the parties filed answers to those questions.<sup>16</sup>

After publishing a notice in the *Federal Register*, 72 Fed. Reg. 1344-46 (Jan. 11, 2007), the Board held a “limited appearance statement” session, pursuant to 10 C.F.R. § 2.315(a), in Mineral, Virginia. The session was held on February 8, 2007, during which the Board listened to public comments regarding the ESP application.<sup>17</sup> Written limited appearance statements have also been filed in this proceeding and have been read by the Board.

After reviewing the parties’ answers to the safety and environmental questions, and considering the limited appearance statements, the Board issued an order on March 20, 2007, that addressed certain preliminary matters concerning the evidentiary hearing scheduled to commence on April 24, 2007.<sup>18</sup> Specifically, the Board instructed the parties to file their (a) written statements of position, (b) written testimony, and (c) supporting exhibits on or before April 10, 2007. Hearing Order at 3. We stated that “[t]his is the time and opportunity for each party to present all of the evidence that it believes is necessary to carry its burden of proof with regard to the six fundamental questions set forth in Attachment A.” *Id.* The order also listed seven topics where the Board sought clarification at the evidentiary hearing, as follows: (1) site characterization (hydrology, soil, vadose zone, groundwater, and aquifers); (2) tritium; (3) zero release commitment (of radionuclides into any potential liquid pathways); (4) radiological releases and

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<sup>15</sup> Licensing Board Order (Issuing Environment-Related Questions) (Feb. 7, 2007) [Board Environmental Questions].

<sup>16</sup> Dominion’s Response to the Licensing Board’s February 7, 2007 Order (Issuing Environment-Related Questions) (Mar. 1, 2007) [Dominion Answer to Environmental Question]; *see* Dominion Exhibit 3 (same); NRC Staff Legal Brief in Response to Licensing Board’s Environment-Related Questions (Mar. 1, 2007) [NRC Staff Legal Environmental Brief]; Staff Exhibit B [NRC Staff Answers to Board Environmental-Related Questions] (Mar. 1, 2007) [Staff Answer to Environmental Question]; *see* Staff Exhibit 10 (same); NRC Staff Legal Memorandum Transmitting the Staff Response to Board Environment-Related Question 2 (Mar. 7, 2007); *see* Staff Exhibit 12 (same). The Staff asked the Board to revise Environmental Question #2 and withdraw Environmental Question #82. *See* NRC Staff Motion for Reconsideration (Feb. 20, 2007). The Board granted the motion and extended the deadline for answers to Question #2 until March 7, 2007. *See* Licensing Board Order (Reconsideration of Two Environmental Questions and Grant of Extension) (Feb. 27, 2007) (unpublished). Dominion later corrected one of its answers. *See* Dominion’s Correction to Its Response to the Licensing Board’s Safety-Related Question 48 (Apr. 17, 2007).

<sup>17</sup> *See* Dominion Nuclear North Anna ESP Limited Appearance Statements Session Tr. at 1-220 (Feb. 8, 2007).

<sup>18</sup> Licensing Board Order (Instructions for Submission of Written Materials and Setting of Topics and Procedures for Evidentiary Hearing) (Mar. 20, 2007) (unpublished) [Hearing Order].



doses from normal operations; (5) surface water impacts and possible mitigation measures; (6) seismic safety; and (7) NEPA alternatives.<sup>19</sup> *Id.* at 5-6.

In response to the Hearing Order, Dominion submitted its statement of position, prefiled testimony, witness list, answers to the Board's inquiries, and related affidavits and statements of appearance on April 10, 2007.<sup>20</sup> The NRC Staff also submitted its statement of position, exhibit list, prefiled testimony, and related affidavits.<sup>21</sup> The Board held a prehearing conference with the parties on April 18, 2007,<sup>22</sup> and held the evidentiary hearing for the North Anna ESP application from April 24 to April 26, 2007. In compliance with the Commission policy requiring that we hold evidentiary hearings "in the vicinity of the site of the proposed facility," the hearing was held in Louisa, Virginia. 10 C.F.R. Part 2, App. A, § I.a (2004).<sup>23</sup> On May 11, 2007, the parties filed proposed findings of fact and conclusions of law.<sup>24</sup> In addition, on May 7, 2007, we received "Dominion's Supplement to the Record on Alternative Sites" and on May 11, 2007, the NRC Staff filed its response to Dominion's Supplement.

### III. LEGAL STANDARDS

As previously stated, an ESP is a type of construction permit and therefore an ESP application requires a hearing, whether or not anyone challenges the proposed ESP. AEA § 189a. In an uncontested proceeding such as this one, the

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<sup>19</sup> Because of witness availability and time constraints, these topics were covered in a different sequence at the evidentiary hearing. *See* EH Tr. at 20. For logical reasons, we have grouped these topics in a different sequence in Section IV, *infra*.

<sup>20</sup> *See* Dominion's Pre-Hearing Statement (Apr. 10, 2007); Dominion's Pre-filed Testimony of Marvin K. Smith, Stephen D. Routh, Dr. William R. Lettis, Dr. Robin K. McGuire, and Dr. John R. Davie on Safety Matters (Apr. 10, 2007); *see also* Dominion Exhibit 9 (same); Dominion's Pre-filed Testimony of Marvin K. Smith, Karen K. Patterson, and John D. Cudworth on Environmental Matters; Dominion's Response to Questions in the License Board's March 20, 2007 Order (Apr. 10, 2007); *see also* Dominion Exhibit 10 (same); Dominion's Witness List on Topics in Section II.D of March 20, 2007 Order (Apr. 10, 2007); Dominion Exhibit List (Apr. 10, 2007).

<sup>21</sup> *See* NRC Staff's Written Statement of Position (Apr. 10, 2007); NRC Staff Exhibit List (Apr. 10, 2007); Prefiled Direct Testimony of George F. Wunder on Environmental Issues in the North Anna ESP Proceeding (Apr. 10, 2007); *see also* Staff Exhibit 15 (same); Prefiled Direct Testimony of John S. Cushing on Environmental Issues in the North Anna ESP Proceeding (Apr. 10, 2007); *see also* Staff Exhibit 16 (same); Staff Affidavits (Staff Exhibit 9).

<sup>22</sup> Tr. at 593-630 (Apr. 18, 2007).

<sup>23</sup> Although Appendix A was rescinded, *see* 69 Fed. Reg. 2182, 2274 (Jan. 14, 2004), we still rely on it as an authoritative expression of the Commission's policy. *See Exelon Generation Co.* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 35 n.40 (2005) (*Clinton I*).

<sup>24</sup> Dominion's Proposed Findings of Fact and Conclusions of Law (May 11, 2007); NRC Staff's Proposed Findings of Fact and Conclusions of Law in the Mandatory Hearing (May 11, 2007).

Board's role is significantly different from our usual role where we adjudicate and decide specific "contentions" that are raised and litigated by adverse parties who are strongly motivated to identify areas of concern, to marshal and present factual and technical evidence supporting their opposing positions, and to define and sharpen the issues that we must decide.

The role of the Board in complying with the mandate of the Atomic Energy Act § 189 is to independently evaluate the record and the adequacy of the Staff's review and then to decide six fundamental issues that are specified by the law and regulations.<sup>25</sup> The Commission has stated that, for three of these issues, the Board's role is analogous to that of an appellate court applying the "substantial evidence" test. *Exelon Generation Co.* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005) (*Clinton I*). For these three issues (two under AEA and one under NEPA) the Board must review the *sufficiency of the record* and the *sufficiency of the NRC Staff's review*, and decide if they are *adequate to support the Staff's proposed findings*. See 10 C.F.R. § 2.104(b)(2). The Commission has called this a "simple 'sufficiency' review." *Clinton I*, 62 NRC at 39. Such a review is not to be a "rubber stamp," but instead the Commission has called for boards to "carefully probe" NRC Staff findings "by asking appropriate questions and by requiring supplemental information." *Id.* at 40.

For the other three fundamental issues, which the Commission has denominated the "NEPA Baseline Issues," the Board has a "special responsibility" and the scope of the Board's review is significantly different. *Id.* at 30. For these issues the Board is not merely reviewing the sufficiency of the record and the adequacy of the Staff's review and findings, but instead "must reach [its] own independent determination of uncontested NEPA 'baseline' questions." *Id.* at 45.

For all six fundamental issues, however, the Board is to make its decisions without conducting a "*de novo*" review. This means that "the NRC Staff's underlying *technical and factual findings* are not open to board reconsideration unless, after a review of the record, the board finds the NRC Staff review inadequate or its findings insufficient." *Id.* at 39-40 (emphasis added). The "no *de novo* review" approach, however, does not change the Board's responsibility to independently interpret and apply the *law* and to decide the six ultimate issues in an uncontested ESP case such as this.

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<sup>25</sup>The Staff's knowledge that its work will be independently and carefully reviewed by a Board may, in itself, encourage the Staff to perform its reviews even more diligently than might otherwise be the case.

## A. Three Issues Subject to the Appellate Review—Substantial Evidence Test

In an uncontested hearing, the Board must make “appellate review” decisions, using the substantial evidence test, on three issues. Two are safety-related and one is NEPA-related.

### 1. AEA Safety Issue 1

The first “appellate review” decision that the Board must make is whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of the ESP will be inimical to the common defense and security or to the health and safety of the public. *Id.* at 33 n.32. The Commission has referred to this as “AEA Safety Issue 1.” *Id.*

AEA Safety Issue 1 is a determination that is mandated by section 103d of the AEA,<sup>26</sup> which states that “no license may be issued to any person within the United States if, in the opinion of the Commission, the issuance of a license to such person would be inimical to the common defense and security or to the health and safety of the public.” AEA § 103d, 42 U.S.C. § 2133(d). The NRC regulations reiterate this requirement, specifying that, before issuing a construction permit for a nuclear power reactor, the Commission must conclude that “[t]he issuance of a license to the applicant will not . . . be inimical to the common defense and security or to the health and safety of the public.” 10 C.F.R. § 50.40(c). NRC’s “Notice of Hearing” regulation, 10 C.F.R. § 2.104(b)(2)(i), while not the legal source of the Board’s duty to decide this fundamental issue,<sup>27</sup> provides that the notice shall specify that, even if a proceeding is uncontested, the Board must

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<sup>26</sup>The requirements for the notice of hearing in a construction permit proceeding are outlined in 10 C.F.R. § 2.104(b) and state, *inter alia*, that the notice must direct the presiding officer to consider “[w]hether the issuance of a permit for the construction of the facility will be inimical to the common defense and security or to the health and safety of the public.” 10 C.F.R. § 2.104(b)(1)(iv).

<sup>27</sup>Section 2.104 is titled “Notice of Hearing” and merely specifies the contents of the notice of hearing. As such, this regulation is not the source of the Board’s legal responsibilities. Thus, for example, 10 C.F.R. § 2.104(b)(3)(ii) specifies that the notice of hearing will state that the presiding officer will “independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken.” If the notice so specifies, this regulation is satisfied. The source of the Board’s legal responsibilities on this issue, however, is 10 C.F.R. § 51.105(a)(2), which states that “the presiding officer will . . . [i]ndependently consider the final balance among the conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken.”

decide this question.<sup>28</sup> The notice of hearing in this proceeding complied with this requirement. It stated that the Director of NRR would propose a finding on AEA Safety Issue 1<sup>29</sup> and that, even if the proceeding were uncontested, the Board would “determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the Commission’s staff has been adequate to support a negative finding on Safety Issue 1 . . . as proposed to be made by the Director [of NRR].” 68 Fed. Reg. 67,489 (Dec. 2, 2003).

## 2. *AEA Safety Issue 2*

The second “appellate review” decision that the Board must make is whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a positive finding that, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having the characteristics that fall within the parameters for the site, can be constructed without undue risk to the health and safety of the public. *Clinton I*, 62 NRC at 33 n.32. The Commission refers to this as “AEA Safety Issue 2.” *Id.*

The duty to decide AEA Safety Issue 2 is derived most directly from 10 C.F.R. § 52.21. This ESP regulation states, in pertinent part:

In the hearing, the presiding officer shall also determine whether, taking into consideration the site criteria contained in 10 CFR part 100, a reactor, or reactors, having characteristics that fall within the parameters for the site can be constructed and operated without undue risk to the health and safety of the public.

10 C.F.R. § 52.21. The “Notice of Hearing” regulation, while again not the source of this legal duty, requires that all notices for construction permit proceedings list AEA Safety Issue 2 as a decision that must be made. 10 C.F.R. § 2.104(b)(2)(i)

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<sup>28</sup> Section 2.104(b)(2)(i) states that “[i]f the proceeding is not a contested proceeding, the presiding officer will determine: (i) Without conducting a de novo evaluation of the application, whether the application and the record of the proceeding contain sufficient information and the review of the application by the Commission’s staff has been adequate to support . . . a negative finding on (b)(1)(iv) . . . proposed to be made by the Director of Nuclear Reactor Regulation.” The “finding on (b)(1)(iv)” referred to in the regulation is “[w]hether the issuance of a permit for the construction of the facility will be inimical to the common defense and security or to the health and safety of the public.” 10 C.F.R. § 2.104(b)(1)(iv).

<sup>29</sup> Contrary to the wording of the notice in the *Federal Register*, in this proceeding the Director of NRR has *not* proposed a finding, positive or negative, on AEA Safety Issue 1, AEA Safety Issue 2, or the Overriding NEPA Issue. See NRC Staff’s Written Statement of Position (Apr. 10, 2007) at 56.

and (b)(1)(i)(d). The notice of hearing for this proceeding complied with this requirement. 68 Fed. Reg. at 67,489.

### 3. *Overriding NEPA Issue*

The third “appellate review” decision that the Board must make in an uncontested ESP proceeding is whether the review conducted by the Commission pursuant to NEPA, 42 U.S.C. §§ 4321-4347, has been adequate. *See Clinton I*, 62 NRC at 33 n.33. The Commission referred to this as the “overriding NEPA issue” as distinguished from the “baseline” NEPA issues (discussed later). *Id.*

The duty of the Commission, and in this context this Board, to decide the Overriding NEPA Issue, even in an uncontested case, is derived from NEPA itself. The statute declares that it is the federal government’s policy “to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.” NEPA § 101(a), 42 U.S.C. § 4331(a). NEPA then directs all federal agencies, “to the fullest extent possible” to comply with this policy and, *inter alia*, to use a systematic and interdisciplinary approach in considering environmental issues, and, before taking any major Federal action significantly affecting the quality of the human environment, to generate a detailed environmental impact statement. *See* NEPA § 102(2)(A), (C), and (E), 42 U.S.C. § 4332(2)(A), (C), and (E).<sup>30</sup>

The Overriding NEPA Issue is also dictated and explained in *Calvert Cliffs’ Coordinating Committee, Inc. v. AEC*, 449 F.2d 1109 (D.C. Cir. 1971) (*Calvert Cliffs*), where the United States Court of Appeals for the District of Columbia held that NEPA requires the Commission’s hearing board to independently review Staff environmental analyses and independently consider the final balance among conflicting factors, regardless of whether NEPA issues are raised by an intervenor. *Id.* at 1118 (invalidating regulations precluding Licensing Board review of NEPA considerations).

NRC’s current NEPA regulations, implementing *Calvert Cliffs*, are found in 10 C.F.R. Part 51. The NEPA procedures for construction permit proceedings are in 10 C.F.R. § 51.105. Specifically these regulations require the Board to decide the Overriding NEPA Issue by mandating that, even if a proceeding is uncontested, the Board must determine “whether the NEPA review conducted by the NRC staff has been adequate.” 10 C.F.R. § 51.105(a)(4). As with the other two issues, the “Notice of Hearing” regulation requires the notice to include the Overriding NEPA Issue, 10 C.F.R. § 2.104(b)(2)(ii), and the notice in this proceeding complied. 68 Fed. Reg. 67,489.

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<sup>30</sup>The full text of NEPA § 102(2)(A), (C), and (E) is provided in section V.C, *infra*.

## B. Three “Independent Determination” NEPA Baseline Issues

Quite separately from the three appellate review issues discussed above, the law, regulations, and case law require the Board to independently decide three NEPA baseline issues. Consistent with *Calvert Cliffs* and NEPA, the Commission’s regulations specify that:

[I]n a proceeding for the issuance of a construction permit for a nuclear power reactor . . . the presiding officer will:

- (1) Determine whether the requirements of section 102(2)(A), (C), and (E) of NEPA and the regulations in this subpart have been met;
- (2) Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; [and]
- (3) Determine . . . whether the construction permit . . . should be issued, denied, or appropriately conditioned to protect environmental values.<sup>31</sup>

10 C.F.R. § 51.105(a)(1)-(3). These NEPA Baseline Issues<sup>32</sup> must be included in the notice of hearing, 10 C.F.R. § 2.104(b)(3)(i)-(iii), and were in fact included in the notice for this proceeding. 68 Fed. Reg. at 67,489.

The Commission described the Board’s duty relating to the three NEPA Baseline Issues, as follows:

In sum, under *Calvert Cliffs* and under NRC regulations, licensing boards must reach their own independent determinations on uncontested NEPA “baseline” questions — i.e., whether the NEPA process “has been complied with,” what is the appropriate “final balance among conflicting factors,” and whether the “construction permit should be issued, denied, or appropriately conditioned.” But in reaching those independent judgments, boards should not second-guess underlying technical or factual findings by the NRC Staff.

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<sup>31</sup> Section 51.105(a)(3) reads, in full, as follows: “Determine, *after weighing the environmental, economic, technical and other benefits against environmental and other costs*, and considering reasonable alternatives, whether the construction permit . . . should be issued, denied, or appropriately conditioned to protect environmental values” (emphasis added). The underlined phrase is not applicable to ESPs because the Commission’s ESP regulations specify that the NEPA environmental impact statement (EIS) for an ESP “need not include an assessment of the benefits (for example, need for power) of the proposed action.” 10 C.F.R. §§ 52.17(a)(2) and 52.18. This is because the benefits vs. cost analysis can be postponed until the reactor licensing stage. *See System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), LBP-07-1, 65 NRC 27, 36 n.14 (2007).

<sup>32</sup> These issues are called “baseline” issues, because these decisions must be made “regardless of whether the proceeding is contested or uncontested.” 10 C.F.R. § 2.104(b)(3). This is in contrast to the three “appellate review” questions, which change depending on whether the proceeding is contested or uncontested. *Compare* 10 C.F.R. § 2.104(b)(1) to 10 C.F.R. § 2.104(b)(2).

*Clinton I*, 62 NRC at 45 (citations omitted). In short, while generally accepting the technical and factual findings of the Staff,<sup>33</sup> the Board must independently decide (a) whether NEPA §§ 102(2)(A), (C), and (E) have been complied with, (b) the final balance among conflicting factors, and (c) whether the ESP should be issued, denied, or appropriately conditioned.

### C. Legal Standards Particularly Relevant to ESPs

Before turning to the specific issues raised by the Dominion ESP application, several legal aspects of an ESP must be noted.

#### 1. *Banking, Barring, and Grandfathering of “Resolved” Environmental Siting Issues for 20 to 40 Years*

The fact that an ESP holder cannot commence construction of the proposed nuclear reactors without obtaining an additional license from the NRC does not mean that an ESP is not an important permit. Once the ESP is issued, the proposed site for the nuclear reactors is “banked” or approved; the regulations applicable to the site are frozen as of the date that the ESP is issued; and “the Commission may not impose new requirements . . . on . . . the site.” 10 C.F.R. § 52.39(a)(1). The only exceptions are (1) modifications “necessary either to bring the permit or the site into compliance with the Commission’s regulations and orders applicable and *in effect at the time the permit was issued*” and (2) modifications “necessary . . . to assure adequate protection of the public health and safety or the common defense and security.” *Id.* (emphasis added). Since an ESP is valid for up to 20 years, 10 C.F.R. § 52.27, and can be extended for another 20 years, 10 C.F.R. § 52.29(a), the first exception listed above generally serves to immunize or “grandfather” the ESP holder against more stringent regulations that might be issued any time during the next 20 to 40 years.<sup>34</sup> The second exception allows NRC to override the grandfathering and impose more protective permit conditions only if they meet a “necessity” threshold.<sup>35</sup>

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<sup>33</sup> We do not conduct a *de novo* review. However, the Board need not accept the Staff’s “technical or factual findings . . . if the . . . board [finds] the Staff review to be incomplete or the Staff findings to be insufficiently explained in the record.” *Clinton I*, 62 NRC at 45.

<sup>34</sup> That an ESP applicant intends to apply for a combined operating license within the next year does not alter the legal and regulatory impact and importance of an ESP. Corporate plans may change. But, once granted, the ESP grandfathers and banks the site against most regulatory changes and improvements for 20 to 40 years.

<sup>35</sup> The ESP regulations state that, once an ESP has been issued, more protective conditions *may* be imposed on an ESP holder if “the modification is *necessary* . . . to assure adequate protection of

(Continued)

As the Commission has stated, an ESP makes it “possible to resolve important [site] licensing issues before the construction permit proceeding” and “in effect make[s] possible the *banking* . . . of sites.” 54 Fed. Reg. 15,372, 15,378 (Apr. 18, 1989) (emphasis added). Stated another way, once an ESP is issued, the public, and in most cases, the NRC, are *barred* (absent a finding of necessity) from applying more stringent or contemporary regulatory siting requirements on matters that were “resolved” in the ESP proceeding. 10 C.F.R. § 52.39(a)(2).

Given this 20- to 40-year grandfathering, it would be helpful to understand what issues are “resolved” in an uncontested ESP proceeding, and what issues are not “resolved.” The regulations are somewhat vague on this point. They state that if, after the ESP is issued, an ESP holder submits an application to construct a nuclear reactor or reactors on the site, “the Commission shall *treat as resolved those matters resolved* in the proceeding on the application for . . . the [ESP].” 10 C.F.R. § 52.39(a)(2) (emphasis added). This tautology (matters that are resolved, shall be treated as resolved) is not very instructive. It is uncertain as to what “resolved in the proceeding” means. The “resolution” of this issue may need to await the adjudicatory proceedings on the COL or actual construction permit (CP) applications.

## **2. “Early Partial Decisions on Site Suitability Issues” and No Partial ESPs**

Prior to the Commission’s creation of the early site permit mechanism in 1989, NRC regulations established a similar procedure, which remains in effect today, whereby an applicant could obtain “Early Partial Decisions on Site Suitability Issues” for prospective construction permit sites. *See* 10 C.F.R. Part 2, Subpart F (“Additional Procedures Applicable to Early Partial Decisions on Site Suitability Issues in Connection with an Application for a Permit to Construct Certain Utilization Facilities”). The substantive regulations governing such “Early Partial Decisions” are found in 10 C.F.R. Part 50, Appendix Q, “Pre-Application Early Review of Site Suitability Issues.” The ESP regulations do not replace these earlier regulations, 10 C.F.R. § 52.13, but understanding the difference between “Early Partial Decisions” and “Early Site Permits” may help define the limits applicable to each.

The main differences between an Early Partial Decision and an ESP are that the Early Partial Decision lasts only 5 years and is, by definition, only “partial”

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the public health and safety or the common defense and security.” 10 C.F.R. § 52.39(a) (emphasis added). This is similar to NRC’s backfitting standard, which states that the “Commission *shall always require* the backfitting of a facility if it determines that such regulatory action is *necessary* to ensure that the facility provides adequate protection to the health and safety of the public and is in accord with the common defense and security.” 10 C.F.R. § 50.109(a)(5) (emphasis added).



(resolving only those site suitability issues that the applicant specifically asks to resolve), *see* 10 C.F.R. § 2.606(b)(2), whereas the ESP lasts for 20 years and once it is issued it covers the site (“the Commission may not impose new requirements . . . on the early site permit or the site”). *See* 10 C.F.R. § 52.39(a)(1). This was a major point of controversy when the ESP regulations were promulgated. During the comment period on the proposed ESP regulations, the Attorney General of the State of New York noted the availability of the Early Partial Decisions and questioned the need for ESPs and “whether there could be grounds adequate to support approval of a site for twenty years.” 54 Fed. Reg. at 15,378. Another commenter, the Connecticut Siting Council, agreed, saying that it would be difficult for a public entity to “meaningfully participate in a decision on an application” for an ESP unless it “proposed a specific nuclear power plant” and “contain[ed] projected emissions, discharges, site impacts, safety factors, and exact operational parameters.” *Id.* at 15,378. The Commission rejected the suggestion that ESP applications be limited to “a specific nuclear power plant.” But the Commission agreed that an ESP application must contain “exact operational parameters,” saying “[I]t is just such information which both the proposed rule and the final rule would *require* of applicants for early site permits.”<sup>36</sup> *Id.* (emphasis added). The Commission also said that “*partial* early site permits [would not] be issued [because] it is not likely that resolutions of isolated site issues could have the degree of finality which a permit lasting up to twenty years must have.” *Id.* The Commission stated that ESPs serve to resolve “most site issues” and that “[w]here adequate information is not available, early site permits will not be issued.” *Id.* In such situations, where a 20-year ESP would not be available, the company could request an Early Partial Decision pursuant to 10 C.F.R. Part 2, Subpart F.<sup>37</sup>

#### IV. SUMMARY OF KEY EVIDENCE

As noted above, in an uncontested hearing on an ESP application, the law requires this Board to make six fundamental and ultimate decisions. For three of them, the Commission has stated that our review is akin to “appellate review”

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<sup>36</sup>This Board construes this statement by the Commission as referring to the “plant parameter envelope,” or PPE, used by the Staff and Applicant in an ESP application as a surrogate for the actual parameter for a single specific reactor design.

<sup>37</sup>Dominion’s ESP application lacks a number of Plant Parameter Envelope (PPE) values, *see infra* § VI.C and includes numerous unresolved issues, *see, e.g.*, Staff Answer to Environmental Question 5 (listing thirty-five unresolved environmental questions). Given this situation, the Commission may want to consider providing instruction as to how this approach can be reconciled with the Commission’s 1989 statements regarding no partial ESPs and no ESPs without adequate information. *See infra* section VI.C.

and our duty is to determine whether the record and the Staff review have been sufficient to support the findings required for the issuance of an ESP. For the other three, the NEPA Baseline Issues, the Board must independently make the initial decisions. In neither case is the Board to conduct a *de novo* review of the Staff's factual and technical findings, unless, after a review of the record, the Board finds NRC Staff review inadequate or its findings insufficient. *Supra* pp. 554-60.

With these standards in mind, the Board approached this assignment as follows. First, we studied and discussed the FSER and FEIS amongst ourselves. We also reviewed pertinent sections of Dominion's application and environmental report. Then we issued one wave of safety questions and one wave of environmental questions, probing the basis and/or logic of key matters that seemed unclear or that otherwise concerned us.<sup>38</sup> The NRC Staff and Dominion each answered these questions (in a significant number of cases, Dominion deferred to or adopted the Staff's answer) and we studied these answers.<sup>39</sup> Next, the parties submitted written statements of position, written testimony, and exhibits intended to provide a record sufficient to meet their burden of proof on the six fundamental questions.<sup>40</sup> We reviewed and studied this material. Finally, we held an evidentiary hearing, during which we heard oral testimony on seven topics where the Board hoped that clarification and resolution of issues could be achieved through our questioning of witnesses.<sup>41</sup> At the end of the evidentiary hearing, we also heard from the parties' lawyers on three legal issues.<sup>42</sup> Subsequent to the hearing, the parties submitted supplementary material related to the NEPA alternatives issue<sup>43</sup> and proposed findings of fact and conclusions of law.<sup>44</sup>

We also note what we did not do. This Board did not undertake a *de novo* review of any issue. With a limited number of exceptions on matters which

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<sup>38</sup> See *supra* notes 13, 15.

<sup>39</sup> See *supra* notes 14, 16.

<sup>40</sup> See *supra* notes 20, 21.

<sup>41</sup> The fact that we did not take live testimony on a topic does not necessarily mean that we were satisfied with the written answers. We may simply have concluded that, given the nonadversarial nature of the proceeding, live testimony would not have clarified the matter.

<sup>42</sup> The three legal questions dealt with (1) whether the FEIS satisfies the Commission's environmental justice policy, (2) the status of NRC's Part 52 rulemaking and whether it informs the issue regarding the prohibition of partial ESPs or the issuance of ESPs in the absence of adequate information, and (3) with regard to the proposed Permit Condition 4, the impact of two recent Commission rulings, *System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-07-14, 65 NRC 216 (2007) and *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203 (2007) [*Clinton II*]. EH Tr. at 624-25.

<sup>43</sup> Dominion Supplement to the Record on Alternative Sites (May 7, 2007); NRC Staff Response to "Dominion's Supplement to the Record on Alternative Sites" and Staff Supplement to the Record (May 11, 2007).

<sup>44</sup> Dominion Proposed Findings of Fact and Conclusions of Law (May 11, 2007); NRC Staff's Proposed Findings of Fact and Conclusions of Law in the Mandatory Hearing (May 11, 2007).

required further inquiry, we did not attempt to verify, duplicate, or litigate the factual or technical findings of the NRC Staff. For example, if the Staff testified that the wet and dry cooling towers for Unit 3 would cause direct evaporative losses of 8707 gallons per minute (gpm) of water, or gave a technical opinion that Unit 3 would result in increasing the amount of time there would be 20 cubic feet per second (cfs) or less discharged into the North Anna River from 6% per year to 11% per year, or stated that raising the water level in Lake Anna by 10 inches would eliminate the impact of Unit 3, we did not recalculate or require litigation or proof of the Staff's factual or technical opinions and findings. Although, as required, we have taken an "independent 'hard look' at the NRC Staff safety and environmental findings," *Clinton I*, 62 NRC at 34, we relied heavily on the Staff's work and made no effort to duplicate it.

On this basis, this Initial Decision does not attempt to reiterate every factual item in the FEIS or FSER and instead focuses only on those factual, technical, or legal concerns that we deemed difficult or most important to our decisionmaking on the six fundamental questions. This Initial decision does not and need not even cover all of the areas of concern reflected in our 200+ questions and answers, or all of the direct testimony and exhibits.<sup>45</sup> We have not attempted to rebut, pursue clarification, or quibble about every problematic answer or statement (legal, factual, or technical) by the parties. This Initial Decision merely covers the key points in our thinking and analysis.

#### **A. Surface Water Impacts and Possible Mitigation Measures**

Prior to the evidentiary hearing, the Board instructed the parties to produce subject matter experts to testify at the evidentiary hearing and respond to questions concerning "the potential impacts (e.g., lake levels, altered downstream flows, etc.) of the proposed ESP on the water in Lake Anna and downstream, studies performed or imminent (e.g., the IFIM), and possible measures to mitigate these impacts." Hearing Order at 6. This topic is primarily environmental, focusing on the proposed project's environmental impacts and the consideration of reasonable alternatives and mitigation measures as required by NEPA.<sup>46</sup> This subject was covered in various places in the FEIS, including section 5.3, "Operational Impacts

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<sup>45</sup> For example, after receiving answers to our two sets of written questions, a large number of important topics were not singled out by the Board for oral testimony and questioning. These included population growth rates, storms, hurricanes, floods and other Acts of God, design basis accidents, severe accidents, effects of dam rupture, and quality assurance.

<sup>46</sup> Surface water impacts had been the subject of numerous public comments in response to the draft EIS, the subject of various limited appearance statements, and were the basis for dismissed Contention EC 3.3.2. *Supra* p. 551.

at the Proposed Site — Water Related Impacts,’’ and section 5.4.2, ‘‘Operational Impacts at the Proposed Site — Ecological Impacts — Aquatic Impacts.’’

During the evidentiary hearing the NRC Staff produced a panel of witnesses who gave a presentation on surface water impacts and mitigation, and responded to the Board’s questions.<sup>47</sup> The Staff witnesses provided a slide presentation that was admitted as Staff Exhibit 18. EH Tr. at 50, 53. Likewise, the Board heard testimony on this subject from a panel of Dominion witnesses<sup>48</sup> and Dominion also submitted a slide presentation that was admitted as Dominion Exhibit 15. EH Tr. at 63.

As a matter of basic orientation on surface water impacts, we note that the FEIS states that the two existing nuclear power plants at the NAPS Site, Units 1 and 2, use a once-through cooling water design that withdraws up to 1,934,300 gallons per minute (gpm) from Lake Anna, passes this water through the power plants, and then discharges the heated water to the Waste Heat Treatment Facility (WHTF). FEIS at 5-19. The WHTF is a 3400-acre surface water impoundment area that discharges into Lake Anna at dike 3. *Id.* at 2-6. The main body of Lake Anna is approximately 9600 acres. *Id.*

With regard to the cooling water for proposed Units 3 and 4, the Staff summarized the situation as follows:

The two proposed units employ considerably different cooling systems, with different water needs (Dominion 2006). The proposed Unit 3 would use a closed-cycle, combination wet and dry cooling tower system.

The plant would primarily use wet towers to cool Unit 3 during periods of relative water surplus, which are defined as periods when the water surface elevation of Lake Anna is at or above elevation 76.2 m (250 ft) above mean sea level (MSL). In the ER, this cooling mode for Unit 3 is termed the Energy Conservation (EC) mode.

During periods when the elevation of Lake Anna is below 76.2 m (250 ft) MSL for a period of seven or more consecutive days, Unit 3 would be cooled with a closed-cycle, combination wet and dry cooling tower system to limit the consumptive water use. Dominion terms this cooling mode for Unit 3 as the Maximum Water Conservation (MWC) mode . . . . The dry cooling towers would be designed to remove at least one-third of the excess heat from Unit 3 under worst case atmospheric conditions.

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<sup>47</sup> The NRC Staff’s witnesses on this subject were Lance W. Vail, Jeffrey A. Ward, and Dr. Michael J. Scott, all of Pacific Northwest Nuclear Laboratory, and Dr. Michael T. Masnick of NRC. *See* EH Tr. at 65-66.

<sup>48</sup> The witnesses were Dr. Jud White, Mr. Bill Bolin, Mr. John Waddill, Dr. Stewart Taylor, Dr. Patrick Ryan, and Dr. Charles Coutant. *See* EH Tr. at 135.

Unit 4 would use a dry cooling system that transfers heat directly from the condenser to an air cooled heat exchanger without the use of Lake Anna cooling water.

FEIS at 3-9. As a basic matter, wet cooling towers transfer heat to the atmosphere through water evaporation and conduction, whereas dry cooling systems do so by moving a large amount of air through a heat exchanger. *Id.* at 8-4.

The consumptive loss of water caused by Units 1 and 2, and by proposed Unit 3, affects or will affect the level of water in Lake Anna and in the downstream rivers. Under the current operating scheme for the lake and the North Anna Dam, the normal water level for Lake Anna is kept at 250 feet mean sea level (MSL), FEIS at 2-20, and the annual average release rate from the dam is 270 cfs. EH Tr. at 145 (Dr. Stewart Taylor, testifying for Dominion). Meanwhile, the Commonwealth of Virginia requires that as long as Lake Anna can sustain a water level of at least 250 feet MSL, the North Anna Dam must release at least 40 cubic feet per second (cfs) into the North Anna River. FEIS at 2-21. However, if drier weather conditions occur and the lake surface falls below the elevation of 248 feet MSL, the State allows the release from the North Anna Dam to be decreased to an absolute minimum of 20 cfs. *Id.* at 2-12. In short, although the annual average flow in the North Anna River is 270 cfs (with significant annual fluctuations), the State attempts to maintain a flow of at least 40 cfs in the North Anna River, while occasionally tolerating a minimum flow of 20 cfs during drier conditions.

The Staff noted that the proposed “closed-cycle, dry cooling system” for Unit 4 would use “almost no cooling water.”<sup>49</sup> FEIS at 5-19. Thus, the Staff states that Unit 4 would have “no impact on the lake level or downstream flows.” Staff Exhibit 18 at Slide 3-4.

In contrast, Unit 3’s combination wet/dry cooling system would cause an annual average “forced evaporative loss of 8707 gallons per minute from the lake,” as estimated by Mr. Lance Vail on behalf of the Staff. Staff Exhibit 18 at 3-4; EH Tr. at 72. Mr. Vail acknowledged that the Staff did not estimate the amount of direct or indirect water loss caused by the 1.9 million gpm used by Units 1 and 2. EH Tr. at 120. He also acknowledged that the Staff did not attempt to determine whether conservation measures on Units 1 and 2 (e.g., sending some of their heated water to (enlarged) cooling towers for Units 3 and 4) could offset the 8707-gpm evaporative loss caused by Unit 3. EH Tr. at 120-26, 130-31.<sup>50</sup>

Mr. Jeffrey Ward of the Staff testified that, during nondrought years, the addition of Unit 3 would essentially (a) double the amount of time that the water

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<sup>49</sup>The estimated consumptive loss of water from operating the Unit 4 dry cooling system is less than 1 gpm. FEIS at 3-10.

<sup>50</sup>Likewise, Dominion did not consider the possibility of water conservation measures on Units 1 and 2. EH Tr. at 189-91.

level in Lake Anna would drop to 248 feet MSL or below, and (b) double the amount of time discharges from the North Anna Dam would be at the low, 20-cfs level. EH Tr. at 78. With Units 1 and 2 as a baseline, the Staff estimates that the lake level for nondrought years would be at 248 feet MSL or lower for 6% of the year. *Id.* But the addition of Unit 3 would essentially double this figure to 11% of the year. Staff Exhibit 18 at 13; EH Tr. at 78. During drought years, the impacts on the lake level and downstream flow would be greater. Staff Exhibit 18 at Slide 5.

Mr. Vail, testifying for the Staff, stated that the increase of the low water levels in Lake Anna and low discharges from the North Anna Dam would be eliminated entirely if the NRC were to require dry cooling for Unit 3, as it proposes to do for Unit 4. EH Tr. at 114. Dr. Masnik of the Staff also acknowledged that, by increasing the water level in Lake Anna by 10 inches, this would counterbalance the increased time at low discharges caused by Unit 3. EH Tr. at 87-88.

In contrast with the NRC Staff model, which predicted an increase from 6 to 11% in how long Lake Anna would be at or below 248 feet MSL and the discharge at 20 cfs, *see* FEIS App. K at K-10, Dr. Stewart Taylor, testifying for Dominion, stated that Dominion's model predicts that the frequency of the Lake level dropping below 248 feet MSL and 20 cfs flow would increase only from about 5% of the time to 7% of the time. ER at 3-5-16; EH Tr. at 139, 143.

The Board explored why Dominion's and NRC Staff's predictions were so different. Both Mr. Vail, for the NRC Staff, and Dr. Taylor, for Dominion, agreed that the NRC Staff's model used a fixed, average evaporation rate of 8707 gpm applied over the entire period of analysis. EH Tr. at 119, 141. The average evaporation rate used by the NRC Staff overestimates the evaporation rate that would prevail when the operating lake level is below 248 feet MSL and when the proposed Unit 3 would be using the combination wet/dry cooling tower system. *Id.* at 70, 141. Dominion's model predicts weekly lake level and outflows using the entire 24-year period of record, including the two lowest years of precipitation in the extended period of record. EH Tr. at 138 (Taylor), 99 (Vail).

Dr. Taylor testified that Dominion's model is more realistic, because it modeled the anticipated mode of operation of the proposed cooling system and thus it more accurately predicts the increase in reduced water level and downstream flows resulting from the operation of the proposed third unit. EH Tr. at 139-43.

The Staff's position is that, although Unit 3's water consumption will increase from 6% to 11% of the year the amount of time when the lake level is below 248 feet MSL and the flow of the North Anna River is at 20 cfs, these changes will have little or no impact on the fisheries or biota in the lake or downstream rivers. Dr. Michael Masnik, testifying for the Staff, opined that there will be no impact to fisheries in Lake Anna. EH Tr. at 75-76. Similarly, Mr. Jeffrey Ward testified that the impacts to fish in the rivers downstream of the lake will be small. *Id.* at 78; Staff Exhibit 18 at 8. Mr. Ward testified there are two

reasons for this: one, periods of low flow (generally late summer and fall) are not expected to coincide with the spawning season (spring and early summer), and two, spawning occurs many miles downstream in the Pamunkey River, which has two other significant tributaries contributing to its flow levels. EH Tr. at 78-80; Staff Exhibit 18 at 11. Mr. Vail testified that the “Staff evaluated the potential impacts to benthic communities, aquatic plants and riparian vegetation common to downstream locations” and “concluded that the impact of reduced flow [due] to the addition of Unit 3 is expected to be undetectable.” EH Tr. at 81; Staff Exhibit 18 at 16. Dominion’s witnesses made similar representations.<sup>51</sup>

The Board asked the parties whether they had studied and assessed the potential socioeconomic impacts of the increase of the low flow periods in the river. Dr. Michael Scott of PNNL, testifying for the Staff, presented a slide concerning the socioeconomic impacts on the *lake*. Staff Exhibit 18 at 19. He said that the impact of Lake Anna water levels would be “small” in normal water years, with a “moderate temporary” impact on private lakefront property when water levels were below 248 feet MSL and a “moderate temporary” impact on boating and private dock usage when lake levels were below 248 or above 250 feet 6 inches. EH Tr. at 92-93; Staff Exhibit 18 at 19. But Dr. Scott acknowledged that his presentation did not address possible socioeconomic impacts in the river. EH Tr. at 93. When asked about kayaking and recreational fishing downstream, Dr. Scott stated that “we did not find anything in the very brief search . . . that would allow us to make a judgment” about downstream socioeconomic impacts. *Id.* at 94. He had “very little information” about downstream socioeconomic impacts. *Id.* at 109.

Next, the Board raised questions about the instream flow incremental methodology (IFIM) study that Dominion is about to undertake with the Commonwealth of Virginia. *See* EH Tr. at 107. The Board noted the apparent contradiction between the Staff asserting that the lowering of lake and downstream levels caused by Unit 3 is not a problem, and yet requiring Dominion to perform the IFIM study concerning such impacts.<sup>52</sup> *Id.* Dr. Masnik, testifying for the Staff, said that the Staff had discussed the IFIM study with the State, and that the Staff’s position is that the changes in downstream flow that would be caused by Unit 3 “are within the normal variation that you would expect in a small river system like North Anna [that] is in the southeastern part of the United States.” *Id.* at 110. Dr. Jud White, testifying for Dominion, stated that the IFIM study is “really a study to optimize state permit decisionmaking related to how we manage the lake

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<sup>51</sup> For example, Dr. Charles Coutant stated “our conclusion is that the biological effects on the overall communities — river communities would be small,” EH Tr. at 153, and Mr. William Bolin testified that “20 cfs is not detrimental to the river system.” *Id.* at 163.

<sup>52</sup> The Staff is proposing to impose the IFIM on Dominion. *See* FEIS at J-9 and Staff Exhibit 17 (Draft Permit) at 5 (proposed permit condition 3.I.2).

and how releases from the dams are handled.” *Id.* at 164. *See also* Dominion Exhibit 15 at 18; EH Tr. at 177. But Dr. White agreed that the IFIM study is being done because of concerns about the lowered lake levels and downstream flows that will be produced by Units 3 and 4. EH Tr. at 178-80.

Finally, before closing on the surface water impacts issue, the Board notes that the Staff’s proposed permit does *not* impose any requirements or conditions as to when Dominion must operate the dry cooling tower for Unit 3, and when it can rely solely on the wet cooling tower that causes the forced evaporation of 8707 gpm from the lake on average. *See* FEIS at J-9. Apparently, the Staff will leave this entirely up to Dominion and perhaps the Commonwealth of Virginia.<sup>53</sup> However, the Staff attorney Brooke Poole did confirm that condition 3.E.2 of the Staff’s proposed ESP would specify that Unit 4 must use a dry cooling tower. EH Tr. at 122. *See also* Staff Exhibit 17 (Draft Permit) at 3.

#### **B. Site Characterization — Hydrology, Groundwater, Isotope Transport**

Prior to the evidentiary hearing, the Board instructed the parties to produce subject matter experts to testify at the evidentiary hearing and respond to questions concerning “the measurement, monitoring, data, and characterization of the hydrology of, and any radiological or chemical contamination in, the soil, vadose zone, groundwater, and aquifers at or near the proposed site.” Hearing Order at 5. This subject is safety-related because “in determining the acceptability of a site . . . [f]actors important to hydrological radionuclide transport . . . must be obtained from on-site measurements.” 10 C.F.R. § 100.20(c)(3). It is also related to NEPA because, in order to analyze the environmental impacts of a project on a site, it is necessary to know the characteristics of the site.

During the evidentiary hearing the NRC Staff produced a panel of witnesses who gave a presentation on site characterization, hydrology, groundwater, and isotope transport, and responded to the Board’s questions.<sup>54</sup> The Staff witnesses provided a slide presentation that was admitted as Staff Exhibit 19. EH Tr. at 51, 53. Likewise, the Board heard testimony on this subject from a panel of Dominion witnesses<sup>55</sup> and Dominion submitted a slide presentation that was admitted as Dominion Exhibit 12. EH Tr. at 61, 63.

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<sup>53</sup> Dominion has defined the lake level conditions when they will switch between the maximum water conservation mode (maximum use of the dry cooling tower for Unit 3) and the more normal energy conservation mode (wet cooling tower only for Unit 3). FEIS at 3-7 through 3-10.

<sup>54</sup> The NRC Staff’s witnesses for this panel were Mr. Goutam Bagchi and Mr. Lance W. Vail. *See* Staff Exhibit 19 (stamp); EH Tr. at 201-04.

<sup>55</sup> Dominion’s witnesses for the hydrology panel were Dr. Stewart Taylor, Mr. Carl Tarantino, Mr. Carter Cooke, Mr. Loran Matthews, and Mr. Donald Hintz. *See* EH Tr. at 249; Dominion Exhibit 12.



This subject is closely related to the topic that we denominated as the “Zero Release Commitment,” which concerns the meaning and effect of the Staff’s proposed Permit Condition 4 (requiring the use of “features to preclude” certain accidental releases). This subject will be addressed in section IV.C, *infra*. It is sufficient to note at this point that proposed Permit Condition 4 does not actually preclude releases, does not apply to systems such as the spent fuel pool, and does not appear to apply to slow leaks. *See* section IV.C, *infra*. In addition, these two topics were the subject of considerable concern by the Boards in the two prior ESP mandatory hearings and have been addressed by the Commission.<sup>56</sup> The Commission rulings are dispositive on the issues they address, and we will apply those rulings here.

The regulatory context for the “Site Characterization — Hydrology” topic starts with 10 C.F.R. § 52.21, which states “in the [ESP] hearing, the presiding officer shall also determine whether, taking into consideration the site criteria contained in 10 CFR part 100, a reactor, or reactors, having characteristics that fall within the parameters for the site can be constructed and operated without undue risk to the health and safety of the public.” Part 100 specifies numerous “factors to be considered when evaluating sites” such as “population density and use characteristics,” the “nature and proximity of man-related hazards,” and “physical characteristics of the site, including seismology, meteorology, geology, and hydrology.” 10 C.F.R. § 100.20(a)-(c). On the subject of hydrology, the regulation specifies:

Factors important to hydrological radionuclide transport (such as soil, sediment, and rock characteristics, adsorption and retention coefficients, ground water velocity, and distances to the nearest surface body of water, *must be obtained from on-site measurements.*”

10 C.F.R. § 100.20(c)(3).

The relevant Staff guidance document for ESPs, “RS-002, Processing Applications for Early Site Permits” (RS-002) (2004), emphasizes the importance of obtaining and evaluating the hydrological measurements:

The geological and hydrological characteristics of the site may have a bearing on the potential consequences of radioactive materials escaping from a nuclear power plant or plants of specified type (or falling within a plant parameter envelope [PPE]) that might be constructed on the proposed site. *Special precautions* should be planned if a reactor or reactors would be located at a site where a significant quantity of

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<sup>56</sup> *See Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-06-28, 64 NRC 460, 495 (2006); *Clinton II*, CLI-07-12, 65 NRC at 206-07; *Grand Gulf ESP*, LBP-07-1, 65 NRC at 54-61; *Grand Gulf ESP*, CLI-07-14, 65 NRC at 217-18.

radioactive effluent *could accidentally flow into nearby streams or rivers* or find ready access to underground water tables.

....

To meet the requirements of 10 CFR Parts 52 and 100 with respect to accidental releases of liquid effluents, the following specific criteria are used:

1. Radionuclide transport characteristics of the groundwater environment with respect to existing and future users should be described. *Estimates and bases for coefficients of dispersion, adsorption, groundwater velocities, travel times, gradients, permeabilities, porosities, and groundwater piezometric levels between the site and existing or known future surface water and groundwater users should be described* and be consistent with site characteristics.

RS-002 at 2.4.13-1 to -2. (emphasis added).

Turning to Dominion's application, the Staff noted at the outset that "completeness and clarity are of paramount importance" in meeting the hydrology requirements of 10 C.F.R. § 100.20(c)(3). FSER at 2-61. Later, the Staff noted that Dominion did not provide the onsite measured values of adsorption and retention coefficients for radioactive materials, calling this "Open Item 2.4-11." FSER at 2-134. The Staff then noted that, in response to Open Item 2-4-11, Dominion assembled a radionuclide inventory from information provided in the AP1000 Design Control Document and the Advanced Boiling Water Reactor Standard Safety Analysis Report. *Id.* Dominion then screened the inventory to identify those radionuclides that may migrate through the subsurface to Lake Anna with a residual activity in excess of the values listed in Column 2 of Table 2 in Appendix B of 10 C.F.R. Part 20. *Id.* The applicant assumed an instantaneous release of the radwaste to the saturated zone ignoring any adsorption or retardation from the point of release to Lake Anna and accounted for the radioactive decay in the inventory during migration. *Id.* Dominion used a travel time of 16 years based on a maximum measured hydraulic conductivity of 3.4 feet per day, a horizontal hydraulic gradient of 0.03 feet per feet, an effective porosity of 0.33, and an estimated travel distance of 1800 feet from release point to Lake Anna. *Id.* Dominion used distribution coefficients for each of the selected radionuclides based on published values and the measured physical and chemical soil properties at the ESP site. *Id.*

After reviewing Dominion's response to Open Item 2-4-11, the Staff identified three major issues regarding subsurface migration of radionuclides released accidentally to the accessible environment (Lake Anna and the WHTF):

The *first issue* is the composition of the radionuclide inventory and selection of specific radionuclides from the inventory that may be critical to public health and safety. . . . The *second issue* is the definition or delineation of potential subsurface pathways from the point of release to the accessible environment. The *third issue* is

related to the uncertainty of subsurface hydrological properties that may affect the migration of the radionuclides.

FSER at 2-135 (emphasis added).

With regard to the first issue, the Staff “determined that the applicant’s screening procedure for selecting the radionuclides of importance to subsurface hydrological transport may be inappropriate” because “the dose calculations should include all radionuclides that may reach Lake Anna or the WHTF via a subsurface pathway in order to estimate the total dose to an individual using these waters,” not just those radionuclides that exceed the acceptable limits as prescribed by Column 2 of Table 2 in Appendix B to 10 C.F.R. Part 20. FSER at 2-135.

With regard to the second issue, the Staff stated that

since the nuclear power plant design has not been selected at the ESP stage and no details regarding the location of an accidental radioactive material release are available, the staff concludes that it is not possible at the ESP stage to delineate all possible subsurface pathways at the ESP site and to evaluate the potential pathways to determine the most critical event.

FSER at 2-135. Given that an ESP is, by definition, based on a plant parameter envelope instead of a specific reactor design or details, and does not require a “delineat[ion] of all possible surface pathways” we are uncertain why Dominion could not at least provide a PPE for its application. *See* section VI.C, *infra*.

With regard to the third issue, the Staff stated: “[B]ecause of incomplete knowledge of subsurface hydrological and chemical properties and the likely composition of the radwaste effluent itself, significant uncertainty exists in the characterization of radionuclide migration in the subsurface at the ESP site at the time of ESP review.” FSER at 2-136. This uncertainty seems inconsistent with the requirements of 10 C.F.R. § 100.20(c)(3) and RS-002. However, the Staff responds to this uncertainty in two ways. First, it postpones “the appropriate subsurface hydrological characterization” until the time of “a COL or CP application” when the reactor design and additional “details related to the radwaste design and location” will be known.<sup>57</sup> FSER at 2-136. Second, the Staff dispenses with the required subsurface hydrological characterization, stating “this issue could be resolved if there were *no releases* of radionuclides

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<sup>57</sup> Dominion has committed that “appropriate source term values would be developed and the consequences of accidental releases of liquid effluents to ground and surface waters would be evaluated in the COL application.” Appl. at 2-2-147. The NRC Staff characterizes this as a promise to do a “detailed numerical model . . . as part of any COL application.” Staff Answer to Safety Question 48.

to the ground water” and thus proposing Permit Condition 4, which requires radwaste systems to have “features to preclude” accidental releases. *Id.* As we will see, despite some confusion by technical members of the Staff, it ultimately acknowledged that proposed Permit Condition 4 does *not* prohibit releases or establish that there will be “no releases.” *See* section IV.C, *infra*.

Turning to the evidence presented at the hearing, Mr. Goutam Bagchi, testifying for the Staff, agreed that the in situ measurements required by 10 C.F.R. § 100.20(c)(3) and RS-002 had not been done. EH Tr. at 216-18. Mr. Bagchi stated that instead of such measurements, “it is best to preclude any releases” and postpone this to the COL stage. *Id.* at 218.

Mr. Bagchi: They did not use the on-site characteristics, that’s why we felt that we, they did not need the regulation, that aspect of the regulation. Therefore we should preclude it.

Judge Karlin: Preclude it, what do you mean preclude it?

Mr. Bagchi: Preclude any kind of release. Use the design features, engineered features.

Judge Karlin: Just say that there will be none?

Mr. Bagchi: There will be none.

*Id.* at 219-20. When asked how he could reconcile this approach with the Staff’s RS-002 (dated 2004), Mr. Bagchi characterized it as an “outdated document.” *Id.* at 225.

The Staff testimony on this point was consistent with its answers to our prior written questions. We had asked “what prevents the Applicant and Staff from developing more sufficient knowledge [data] on the subsurface hydrological and chemical properties at this time?” Board Safety Question 50A. The Staff answered that it was impossible to draw liquid pathways without knowing the “exact location and elevation” of a likely point of accidental release. Staff Answer to Safety Question 50A.

We also asked “what prevents the Applicant and Staff from developing a [PPE] for the ‘likely composition of the radwaste effluent?’” Board Safety Question 50B. The Staff responded that “at the ESP stage, the information on the quantity, quality and timing of liquid effluents to be stored in the radwaste tanks is unknown.” Staff Answer to Safety Question 50B. We find this answer unresponsive, because, by definition, a PPE is a surrogate that is used when such reactor-specific details are not available. Hence the need for the Applicant to provide, at least, the PPE, and hence our question — what prevents the Applicant and Staff from developing PPE parameters on the issue of hydrology?

In our written questions we asked, “how does [the absence of a PPE on hydrology and satisfaction of 10 C.F.R. § 100.20(c)(3)] comport with the Commission’s statement that ‘where adequate information is not available, early site permits will

not be issued?’” Board Safety Question 50D. The Staff responded that “characterization of factors important to [subsurface radionuclide migration], such as soil, sediment, and rock characteristics, is unnecessary *if the design precludes inadvertent releases* of liquid radioactive effluents during normal operation. Permit Condition 4 would impose such a requirement on the design.” NRC Staff Legal Safety Brief at 4 (emphasis added). The Staff adds, in a strange nonsequitur, that “[t]he Commission’s statement that ESP’s *should not be issued* if ‘adequate information is not available’ appears directed to the information necessary to support analysis of an ESP term up to twenty years, and *should not be taken as an instruction to deny* an application rather than use permit conditions to address particular issues.” *Id.* at 5 (emphasis added).<sup>58</sup> See section VI.C, *infra*.

It should be added that Dominion’s witness, Dr. Stewart Taylor, correctly pointed out that at least some of the radionuclide transport analysis requirements of RS-002, such as hydraulic conductivity and hydraulic gradient, were met. EH Tr. at 285-86. He acknowledged that others, such as distribution coefficients, were not determined. *Id.* at 286.

Another hydrology-related item that concerned the Board is whether Dominion and the Staff have an adequate baseline as to the hydrology and existing contamination (if any) at the NAPS Site, so as to be able to distinguish any Unit 3 and 4 contamination from any preexisting contamination and be able to respond to and control the situation if Units 3 and 4 were to experience releases or additional chemical or radiological contamination at the ESP Site. Here, Mr. Bagchi presented a slide stating “Radiological Contaminants: None at ESP site.” Staff Exhibit 19 at 5. Upon questioning, however, Mr. Bagchi acknowledged that there are no radiological monitoring wells on the ESP site. EH Tr. at 206. We question how he could assert “no radiological contamination” if no one had even bothered to look for it. *Id.* Further, Mr. Bagchi acknowledged that “more recent information” indicates that there is some radiological contamination (tritium) at the ESP Site. *Id.* Mr. Bagchi also testified that there is no known radiological contamination on the NAPS Site. *Id.* at 207. But again, upon questioning we learned, from Mr. Stoetzel of the Staff, that there is only one radiological monitoring well on the NAPS Site, and he did not know if it is upgradient or downgradient of the existing Units 1 and 2. *Id.* at 222. And again, some more recent information now reveals some radiological contamination on the NAPS Site. EH Tr. at 206.

Dominion’s witnesses clarified some points. Mr. Matthews testified that there are nineteen piezometric wells that measure only groundwater elevation level on the NAPS Site and they are *all upgradient* of Units 1 and 2. EH Tr. at 254-55.

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<sup>58</sup>The Statement of Considerations makes no reference to the “use of permit conditions” as a mechanism for issuing an ESP when adequate information is not available. Instead, it suggests that a *Partial* Decision of Site Suitability Issues (addressing nonhydrology site issues) is the proper solution. 54 Fed. Reg. at 15,378.

Mr. Matthews indicated that, as a logical matter, groundwater from the NAPS Site goes into Lake Anna and into the discharge canal in the WHTF. *Id.* at 256. This seems logical, but does not dispense with the value of knowing the nature and amount of contamination that may be leaching from the site into the lake. Mr. Tarantino, testifying for Dominion, stated that there are seven observation wells on the NAPS Site (as distinguished from the ESP Site) where Dominion has sampled and analyzed for tritium. *Id.* at 261-62. Only one of them, he says, seems to show tritium in measurable quantities. *Id.* at 263. Looking at the seven wells on the maps provided by Dominion, it appears that *all seven are upgradient* of Units 1 and 2. *Compare* Dominion Exhibit 12 at 4, 10. Thus, they cannot tell us whether there are chemical or radiological leaks from the existing Units 1 and 2, and would not help us distinguish any new contamination that might be attributable to Units 3 and 4. Given the absence of downgradient monitoring, the Board is thus not surprised that Mr. Tarantino concluded it “strongly appears that we do not have any *active and known found* leaks from Unit 1 and 2 operations into groundwater.” EH Tr. at 275 (emphasis added).

### C. Zero Release Commitment

Prior to the evidentiary hearing, the Board instructed the Staff to produce a subject matter expert or experts to respond to questions concerning “the Staff’s proposed permit condition 4 ‘requiring that an applicant referencing any such ESP design of any new unit’s radwaste systems to preclude any and all accidental releases of radionuclides into any potential liquid pathways’ and the Staff’s associated determination to exclude any such releases in assessing the potential environmental impact of the proposed ESP.” Hearing Order at 5. The Board perceived the proposed Permit Condition 4 as committing Dominion to preclude all releases and thus called it the “zero release commitment.” We classified this issue as primarily a NEPA issue, because the FEIS simply did not address the possibility that Units 3 and 4 could cause groundwater (and thence lake) contamination and environmental impacts, *see* FEIS 5-59 to -61; EH Tr. at 635, and because the Commission decisions in *Clinton II* and *Grand Gulf* resolved and deferred the AEA safety issue. *Clinton II*, CLI-07-12, 65 NRC at 206-07; *Grand Gulf ESP*, CLI-07-14, 65 NRC at 217-18. At a later time, the Board indicated that Dominion was also welcome to provide witnesses on this subject, but it declined.<sup>59</sup>

On April 10, 2007, the Staff informed us of a change in the wording of its

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<sup>59</sup>Tr. at 613 (Apr. 18, 2007); E-mail from David Lewis to North Anna ESP Licensing Board (Apr. 20, 2007) (stating that “Dominion does not intend to present witnesses on Topics 3 (Zero Release) and 7 (NEPA Alternatives)”).

proposed Permit Condition 4. The Staff decided to “conform the wording of this proposed permit condition to that addressed by the Commission in its recent decisions regarding identical permit conditions in the Grand Gulf and Clinton ESP proceedings.” NRC Staff’s Written Statement of Position at 12 n.21 (Apr. 10, 2007). Thus, proposed Permit Condition 4 now requires, as a condition of the grant of the ESP, that:

radioactive waste management systems, structures and components, as defined in Regulatory Guide 1.143, for a future reactor include features to preclude accidental releases of radionuclides into potential liquid pathways.<sup>60</sup>

*See Clinton II*, CLI-07-12, 65 NRC at 206-07; *Grand Gulf ESP*, CLI-07-14, 65 NRC at 217-18.

It initially appeared to the Board that even the revised Permit Condition 4 might be construed to require Dominion to assure that there would be zero releases. The likelihood of achieving “zero release” concerned us, because the NRC Staff had previously stated:

Systems or structures can experience undetected radioactive leaks over a prolonged period of time. Systems or structures that are buried or that are in contact with soil, such as spent fuel pools, tanks in contact with the ground, and buried pipes are particularly susceptible to undetected leakage.

Staff Answer to Environmental Question 62A.

During the evidentiary hearing we explored the Staff’s interpretation and intent concerning proposed Permit Condition 4. Most importantly, we grappled with an issue that had likewise bothered both of the prior ESP boards, to wit: whether the proposed permit condition totally prohibits accidental releases.<sup>61</sup> At first, Mr. Gotham Bagchi, who identified himself as the primary originator of the concept of Permit Condition 4, EH Tr. at 621, testified that it was his interpretation and intent that proposed permit condition indeed *prohibited* all accidental releases from

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<sup>60</sup>This permit condition is numbered 3.E.3 in the draft ESP permit submitted by the NRC Staff. Staff Exhibit 17 at 3. However, it was proposed Permit Condition 4 in the FSER, *see* FSER at A-3, *see also* FEIS at J-9, and has consistently been referred to as such by the parties. Accordingly, we will continue to refer to it as proposed Permit Condition 4.

<sup>61</sup>*See Grand Gulf ESP*, LBP-07-1, 65 NRC at 58 (finding that “the anticipated performance expressed by the Staff in the hearing and the language of the regulations are far less rigorous than the absolute nature of PC-2 — which precludes ‘any and all’ radionuclide release,” and thus that “the design requirements stated in PC-2 are meant to be a goal of the design feature rather than specific performance criteria”). *See also Clinton ESP*, LBP-06-28, 64 NRC at 495 (“We are concerned that the absolute obligation created by Permit Condition 4 is unachievable as a practical matter and, therefore, may be unenforceable as a legal matter”).

radwaste systems, *see id.* at 220 (“there will be none”), and that any such releases would *violate* proposed Permit Condition 4. *Id.* at 628. Later, however, Mr. Robert Weisman, counsel for the NRC Staff, rejected and reversed this interpretation. Mr. Weisman pointed out that the proper interpretation of proposed permit condition is a legal question. *Id.* at 630. Mr. Weisman stated the Staff’s legal position is that proposed Permit Condition 4 does *not* prohibit releases, instead requiring that Dominion must provide “adequate protection” against such releases. *Id.* at 778. Mr. Weisman indicated that it is the Staff’s position that actual accidental releases of radioactive contamination to the groundwater would not violate Permit Condition 4. *Id.* at 780.

The second major point gleaned from the testimony was that proposed Permit Condition 4, as amended, does not protect against leaks or releases from spent fuel pools or many other components of a nuclear power plant. This is inherent in the phrase “radioactive waste management systems, structures and components, as defined in Regulatory Guide 1.143” which was added to proposed Permit Condition 4. Mr. Bagchi pointed out proposed Permit Condition 4 “does not cover undetected leakages through pipes and other locations,” EH Tr. at 614, and “does not include certain structures, for example spent fuel pool and spent fuel systems.” *Id.* at 615.

Judge Karlin: What else does it not include in terms of things that might leak?

Mr. Bagchi: There are so many things in a huge nuclear power plant that could leak. I can’t begin to list all of them. It is only those associated with radioactive waste management system that’s covered.

*Id.* at 616. Mr. Dehmel of the Staff had previously testified that “some of the highest concentrations of [the radionuclide tritium] are found in [the] spent fuel pool.” *Id.* at 337.

Mr. Bagchi’s testimony is confirmed by NRC Regulatory Guide 1.143, “Design Guidance for Radioactive Waste Management Systems, Structures and Components Installed in Light-Water-Cooled Nuclear Power Plants” (Rev. 2, Nov. 2001), which states:

Except as noted, this guide does not apply to the reactor water cleanup system, the condensate cleanup system, the chemical and volume control system, the reactor coolant and auxiliary building equipment drain tanks, the sumps and floor drains provided for collecting liquid wastes, the boron recovery system, equipment used to prepare solid waste solidification agents, the building ventilation systems (heating, ventilating, and air conditioning), instrumentation and sampling systems beyond the first root valve, or chemical fume hood exhaust systems. In addition, this guide does not apply to the main condenser circulating or component cooling water systems, the spent fuel handling and storage systems, or the fuel pool water cleanup system.



Reg. Guide 1.143 at 1.143-3 to -4. Additionally, the regulatory guide only applies to “light-water-cooled” nuclear power plants, as its name states, and thus does not apply at all to two of the seven reactor types included in Dominion’s ESP application.<sup>62</sup>

The testimony elicited a third significant limitation to the coverage of proposed Permit Condition 4. Specifically, Mr. Bagchi pointed out that when the permit condition uses the term “accidental releases,” it does *not* cover slow undetected leaks into the ground, soil and groundwater. EH Tr. at 619. Mr. Bagchi stated that the term “accidental” refers to “sudden accidental releases,” *id.* at 231, excludes slow long-term releases such as tritium, *id.*, and instead concerns “failure of a tank. Failure of a pipe. Some accident causes a puncture or a hole somewhere.” *Id.* at 619. Mr. Bagchi “completely agree[d]” with the Staff statement that “systems or structures can experience undetected radioactive leaks over a prolonged period of time” and that those “that are buried or that are in contact with the soil . . . are particularly susceptible to undetected leakage.” *Id.* at 639.

Mr. Matthews, testifying for Dominion, agreed that the term “accidental” excludes slow leaks, and would not cover issues such as tritium leaks. EH Tr. at 252-53. But Mr. Matthews stated that an analysis of a “rupture instantaneously [releasing] the entire inventory [of a tank] and putting it in the groundwater” is more conservative than analyzing the consequences of a long slow leak. *Id.* at 287. He also acknowledged, however, that if the slow release went undetected for several years, it might result in a worse situation than a sudden large release that was detected within several weeks. *Id.*

Focusing on a similar issue, Mr. Bagchi pointed out that although a spent fuel pool is designed to withstand a “design basis accident,” and thus designed with features to preclude leakage in the event of a DBA, these design features would not necessarily prevent slow leakage from the spent fuel pool tanks or pipes. EH Tr. at 643.

In sum, the testimony on the meaning and impact of proposed Permit Condition 4 revealed that it is not a “zero release commitment.” Proposed condition 4 would require that certain important parts (i.e., “radioactive waste management systems, structures and components, as defined in Regulatory Guide 1.143”) of certain types of nuclear reactors (i.e., light-water-cooled reactors) must include “features to preclude” certain releases (i.e., sudden/accidental) of radionuclides into potential liquid pathways. As its name would imply, Regulatory Guide 1.143 would not apply to non-light-water-reactors. It would not apply to spent fuel pools or to many other components that might leak. It would not apply to slow

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<sup>62</sup>Two of the reactor designs covered by the ESP application are *not* light-water-cooled reactors. These are the two gas-cooled reactor designs — the Gas Turbine–Modular Helium Reactor (GT-MHR), and the Pebble Bed Modular Reactor (PBMR). *See* Appl. at 2-1-10.

releases. And even where it did apply, it would not prohibit releases, but merely require that the design include “features” intended to preclude releases.

#### **D. Tritium**

Prior to the evidentiary hearing, the Board instructed each party to produce a subject matter expert or experts to provide a brief presentation and respond to questions concerning the “sources, release mechanisms, approximate contributions, pathways, and concentrations of tritium associated with nuclear power reactors in general and associated with the NAPS and ESP sites in particular.” Hearing Order at 5. The Board was concerned about this issue for a number of reasons. The FEIS indicated that, because of Units 1 and 2, “tritium has concentrated in Lake Anna” and implied that, but for the fact that Dominion amended its application to reduce the annual tritium releases from Units 3 and 4 (from 3100 curies per year (Ci/yr) per unit to 850 Ci/yr<sup>63</sup>), the tritium concentrations in Lake Anna could or might exceed the EPA drinking water standard.<sup>64</sup> FEIS at 5-59. (Note, however, that water from Lake Anna is not used directly as drinking water. FEIS at 2-5.) The tritium issue is primarily a NEPA issue because it involves the environmental impacts of the proposed ESP and possible mitigation measures, but the topic also has a safety element because safety regulations require that exposure to radiation be “as low as reasonably achievable” (ALARA). 10 C.F.R. § 50.36a(a).

During the evidentiary hearing, the NRC Staff produced a panel of witnesses who gave a presentation on tritium and responded to the Board’s questions.<sup>65</sup> The Staff witnesses provided a slide presentation that was admitted as Staff Exhibit 20. EH Tr. at 52, 53. Likewise, the Board heard testimony on this subject from a panel of Dominion witnesses<sup>66</sup> and Dominion submitted a slide presentation that was admitted as Dominion Exhibit 13. EH Tr. at 62, 63.

Mr. Stoetzel, testifying for the Staff, explained that tritium is a radioactive form of hydrogen with a half life of 12.5 years. EH Tr. at 297-98. Tritium

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<sup>63</sup> A “curie” is a unit of measurement for radioactivity. “Curie means that amount of radioactive material which disintegrates at the rate of 37 billion atoms per second.” 10 C.F.R. § 30.4. A “pico-curie” is a trillionth of a curie. EH Tr. at 387-88.

<sup>64</sup> “In Dominion ER Revision 9 (Dominion 2006a) the tritium release was revised from 115 TBq/yr (3100 Ci/yr) per unit to 31.5 TBq/yr (850 Ci/yr) per unit. This value was reduced to ensure concentrations in Lake Anna would not exceed the EPA drinking water standard of 741 Bq/L (20,000 pCi/L) found in 40 CFR Part 141.” FEIS at 5-59.

<sup>65</sup> See EH Tr. at 296. The Staff’s panel consisted of Greg Stoetzel, the principal Safety and Health Engineer with the Pacific Northwest National Laboratory and Jean-Claude Dehmel. *Id.* See also Staff Exhibit 20 (Slide Presentation on Tritium).

<sup>66</sup> See EH Tr. at 386. Dominion’s panel consisted of Mr. Carl Tarantino, Donald Hintz, Ken Jha, and Dr. Stewart Taylor. *Id.*

can bond with oxygen to form “tritiated water,” which is chemically (but not radioactively) identical to normal water and cannot be filtered from water. *Id.* at 298. In this decision, the terms “tritium” and “tritiated water” are generally used interchangeably. Tritium presents an internal hazard to humans, primarily from drinking tritiated water or eating fish or other aquatic food that contains tritium. *Id.* The EPA has set a 20,000 pCi/L “maximum contaminant level” for drinking water.<sup>67</sup>

Nuclear reactors are sources of tritium in the environment. Mr. Stoetzel advised the Board that a 1000-megawatt electric pressurized water reactor is expected typically to release approximately 800 Ci/yr of tritium in liquid effluent and 35 Ci/yr to the air, whereas a heavy water reactor, such as the CANDU ACR-700, is expected typically to release 3100 Ci/yr in liquid effluent and 3500 Ci/yr to the air. EH Tr. at 299-300; Staff Exhibit 20 at 5-6.

The mechanisms whereby nuclear power plants discharge tritium or tritiated water, and how Dominion discharges its tritium, were explained by the parties essentially as follows. Different types of water and wastewater from Units 1 and 2 are accumulated in a tank or tanks. EH Tr. at 304 (Dehmel), 434 (Tarantino). Then the operator samples and analyzes the radioactivity of the contents of the tank.<sup>68</sup> *Id.* at 305 (Dehmel), 435 (Tarantino). For Units 1 and 2, the monthly average tritium radioactivity in the collection tank is between 100,000 pCi/L and 10 million pCi/L. *Id.* at 442 (James Breedon). Then the operator pumps the tank out and discharges the radioactive water via a pipe into the WHTF. *Id.* at 304 (Dehmel). The discharges do not occur continually, but instead are released in controlled batches. *Id.* at 305. The amount of radioactivity of the discharge is not monitored at the point it is discharged from the pipe. *Id.* at 318-21. Instead, the tritium level is measured in the wastewater in the accumulation tank, *id.* at 320, and at a monitoring point in the second lagoon of the WHTF. *Id.* at 314. This is approximately 3.4 miles from the discharge point. *Id.* at 403-04. Dominion does not treat or remove the tritiated wastewater (e.g., solidify and land dispose it) before it is discharged into the WHTF and Lake Anna, deeming it scientifically difficult and/or not cost effective. *Id.* at 443-44 (Breedon). Instead, compliance is

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<sup>67</sup> EPA sets the “maximum contaminant level goal” (MCLG) for tritium and other beta emitters at zero. 40 C.F.R. § 141.55. MCLGs are nonenforceable health goals set at the level “at which no known or anticipated adverse effects on the health of persons would occur, and which allow an adequate margin of safety.” 40 C.F.R. § 141.2. EPA sets the enforceable “maximum contaminant level” (MCL) for tritium and other beta emitters at 20,000 pCi/L, a level that avoids producing “an annual dose equivalent to the total body or any internal organ greater than 4 millirem/yr.” 40 C.F.R. § 141.66(d). The MCL is commonly referred to as the EPA drinking water standard. Mr. Dehmel testified that the NRC includes the EPA drinking water standard (i.e., MCL) in the technical specifications that a licensee must meet under 10 C.F.R. § 50.36a. EH Tr. at 462.

<sup>68</sup> Actually, the wastewater is analyzed for a radionuclide that is surrogate for tritium and then the amount of tritium is calculated based on established ratios. EH Tr. at 324-25.

achieved by dilution of the radioactive tritium with the water in the WHTF and Lake Anna. *Id.* at 319.

Units 1 and 2 routinely release tritium into Lake Anna. FEIS at 5-59. Combined, their total release of liquid tritium into the WHTF and the Lake averages 810 Ci/yr. Dominion Exhibit 13 at 4. But the amounts vary widely from year to year, from 340 Ci/yr to 1110 Ci/yr during the period of 2000-2005. *Id.*; EH Tr. at 399-400. Mr. Tarantino testified that the annual liquid discharge from each of the existing units would be approximately 405 Ci/yr. EH Tr. at 400.

Mr. Dehmel testified that, absent Units 1 and 2, the background concentration of tritium in Lake Anna would be less than 170 pCi/L. EH Tr. at 316-17. With Units 1 and 2 operating, however, the average tritium concentration in the WHTF is 3050 pCi/L and in the downstream North Anna River is 2960 pCi/L. *Id.* at 315. These values are well below 20,000 pCi/L “maximum contaminant level” set by EPA for drinking water. 40 C.F.R. § 141.66(d).

Dominion developed a bounding estimate of tritium releases from the proposed new Units 3 and 4. EH Tr. at 311; Dominion Exhibit 13 at 8. Dominion’s ESP application originally used the range of tritium levels provided by the vendors of the various reactors included in Dominion’s ESP application. EH Tr. at 311. For example, the AP1000 vendor estimated that Units 3 and 4 would produce 1010 Ci/yr total per year of tritium, the ESBWR and ABWR vendors estimated 60 Ci/yr total per year, and the CANDU ACR-700 vendor estimated 3100 Ci/yr total per year. Dominion Exhibit 13 at 8.

The highest figure for tritium, 3100 Ci/yr per year, came from Atomic Energy Canada, Limited (AECL), the company hoping to sell its CANDU ACR-700 reactors. EH Tr. at 393. However, Dominion decided that this figure was too high, and that it could achieve “dramatically lower” tritium effluent releases from the CANDU ACR-700. *Id.* at 421. This was important because the NRC believed that the additional discharge of 3100 Ci/yr into Lake Anna, combined with the discharges from the existing units, might cause the lake to exceed the EPA drinking water standard. Mr. Dehmel stated:

For the ACR-700, [Dominion] initially assigned a value of 3,100 curies per year and after the staff’s evaluation, we flagged it to the Applicant and said “Be aware that if you go with 3,100, there is going to be a potential — its going to potentially result in Lake Anna and the waste treatment facility exceeding the EPA drinking water standard of 20,000 picocuries per liter.”

*Id.* at 334. Mr. Dehmel testified that, as a result of this discussion, Dominion reduced its PPE to 850 Ci/yr per unit. *Id.*; FEIS at 5-59. The NRC Staff made no

effort to determine whether 850 Ci/yr is a reasonable value to use for a PPE that includes the CANDU ACR-700.<sup>69</sup> EH Tr. at 334.

Mr. Stoetzel testified for the Staff, and Dominion did not disagree, that if Units 3 and 4 each released 850 Ci/yr of tritium into the WHTF and Lake Anna, then the average concentration of tritium in the lake would rise by approximately 6400 pCi/L, going from approximately 3050 pCi/L to approximately 9400 pCi/L. EH Tr. at 312, 327-28 (Mr. Stoetzel); Staff Exhibit 20 at 10; FEIS at 5-59. The concentration of 9400 pCi/L represents 47% of the EPA drinking water standard.<sup>70</sup> However, the Staff indicated that *each unit* would result in a maximum total body dose of 0.81 mrem to the maximally exposed adults, FEIS at 5-59 to -61, and that these levels were within NRC standards.

The design objectives of 10 CFR Part 50, Appendix I are applicable *to each reactor unit*. Doses to whole body and maximum organ at Lake Anna from liquid effluents [not just tritium] were well within the 0.03 mSv/yr (3 mrem/yr) and 0.1 mSv/yr (10 mrem/yr) Appendix I design objectives, respectively.

FEIS at 5-62 (emphasis added); EH Tr. at 464; Staff Exhibit 21 at 13.

The final point to be made concerning tritium is that the figures provided by Dominion and the Staff only include the amounts that Dominion intentionally discharges from its wastewater pipes into the WHTF and Lake Anna. These figures (e.g., 850 Ci/yr per unit, 9400 pCi/L in the lake, 0.81 mrem per unit) do not include tritium, or any other liquid radionuclides, that might unintentionally leak from Units 1 and 2, or 3 and 4, via groundwater into Lake Anna.

The staff did not consider leakage to the groundwater as a pathway in the Environmental Impact Statement because of proposed Safety Permit Condition Number 4 which would require the Applicant to submit a rad waste system design with features to preclude accidental releases into potential liquid pathways.

EH Tr. at 306. Figure 5-3 in the FEIS makes clear that NRC did not consider leaks to groundwater (and thence to Lake Anna) as an “exposure pathway to humans” potentially resulting from the operational impact of the proposed ESP.

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<sup>69</sup> Indeed, at a different point Mr. Smith, testifying for Dominion, stated that the CANDU ACR-700 is “not a design we are considering.” EH Tr. at 396. If this is so, perhaps Dominion should delete this design from its ESP application, rather than require NRC and this Board to continue to evaluate an entirely hypothetical and already discarded design option.

<sup>70</sup> It was recently reported that “EPA is weighing whether to double the effectiveness factor [i.e., risk] it assigns for tritium,” referencing current work by EPA’s Science Advisory Panel. *EPA Tritium Risk Plan May Force Tighter Nuclear Plant Controls*, Inside EPA (June 15, 2007). This could cut the MCL for tritium down to 10,000 pCi/L. If the ESP is issued before the MCL is changed, Dominion may be grandfathered against any such more stringent tritium standard.

FEIS at 5-60. Mr. Dehmel explained that, unless they are captured by part of the wastewater treatment system, such unplanned and controlled releases are not included in the amounts of tritium covered by the FEIS. *See* EH Tr. at 342-43. Such “abnormal” releases are simply not accounted for. *Id.* at 349. The main explanation for excluding such leaks seems to be that proposed Permit Condition 4 precludes them. Also, as will be discussed elsewhere, the parties later testified that, using the normal groundwater flow at the site, it would take 16 years for a leak from the ESP Site to reach Lake Anna. EH Tr. at 786. *See also* FSER at 2-127. Third, Mr. Smith, testifying for Dominion, stated that by taking “no credit” for any absorption coefficients (i.e., by assuming that any liquid radionuclide would travel with the groundwater without being slowed down or absorbed by the intervening soil), Dominion’s groundwater transport model was conservative and bounding. EH Tr. at 429-31. Mr. Tarantino acknowledged, however, that Dominion currently has no groundwater monitoring wells that are downgradient of existing Units 1 and 2. *Id.* at 415-16.

The Board’s concern over the tritium leak issue was also triggered by the NRC’s own Tritium Task Force. In response to unplanned and unmonitored releases of radioactive materials into the environment, the NRC Executive Director for Operations formed the Liquid Radioactive Releases Lessons Learned Task Force on March 10, 2006, and the Task Force issued a Final Report on September 1, 2006.<sup>71</sup> Board Exhibit 1. The Task Force stated that “under the existing regulatory requirements the potential exists for unplanned and unmonitored releases of radioactive liquids to migrate offsite into the public domain undetected.” Board Exhibit 1 at ii. The Task Force recommended that “NRC should require adequate assurance that leaks and spills will be detected before radionuclides migrate offsite via an unmonitored pathway.” *Id.* at 22. We agree with this finding and recommendation, which supports our inquiry into this matter in this ESP proceeding.

#### **E. Radiological Releases and Doses from Normal Operations**

Prior to the evidentiary hearing, the Board instructed each party to produce a subject matter expert or experts to provide a brief presentation and respond to questions concerning the “radiological releases, pathways, and doses associated with the existing site and the proposed ESP, including the nature, adequacy, and confidence levels associated with the data, estimates, and calculations, the monitoring and measurements performed or to be imposed to assure compliance, and the relevant regulatory standards.” Hearing Order at 5-6. Among other

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<sup>71</sup> Liquid Radioactive Release Lessons Learned Task Force Final Report (Sept. 1, 2006), ADAMS Accession No. ML062650312.

things, the Board was concerned as to how the radiological releases and doses were calculated, the process by which operating experience was incorporated into the source term for normal releases, how NRC would regulate and segregate the radioactive effluents from the existing Units 1 and 2 versus the radioactive effluents that would be released from proposed Units 3 and 4, and whether the new increment of radiation from these units would be problematic, either as a safety or an environmental matter.

During the evidentiary hearing the NRC Staff produced a panel of witnesses who gave a presentation on the radiological releases and doses from normal operations and responded to the Board's questions.<sup>72</sup> The Staff witnesses provided a slide presentation that was admitted as Staff Exhibit 21. EH Tr. at 52, 53. Likewise, the Board heard testimony on this subject from a panel of Dominion witnesses<sup>73</sup> and Dominion also submitted a slide presentation that was admitted as Dominion Exhibit 14. EH Tr. at 62, 63.

At the outset, Mr. Dehmel, testifying for the Staff, explained that the existing and proposed units are subject to a multiplicity of regulations. EH Tr. at 459. First, he referenced 10 C.F.R. §§ 20.1301 and 20.1302, stating that they require "nuclear power reactors" to comply with the annual dose limit of 100 mrem to members of the public and an effluent concentration limit specified in 10 C.F.R. Part 20, Appendix B, Table 2. EH Tr. at 459. (Actually, the regulatory language of 10 C.F.R. § 20.1301(a) applies to "each licensee" and each "licensed operation" rather than to each reactor. This distinction becomes significant if multiple reactors are covered by a single license.) Second, Mr. Demhel noted that 10 C.F.R. § 20.1301(e) requires "reactors" to comply with EPA's radiation protection standard in 40 C.F.R. Part 190. EH Tr. at 459-60. Mr. Dehmel stated that EPA's standard limits the annual dose to members of the public to 25 mrem to the total body. (Actually, this provision is neither reactor nor site specific, and applies to doses "as the result of exposures to planned discharges of radioactive materials, radon and its daughters excepted, to the general environment from uranium fuel cycle operations." 40 C.F.R. § 190.10(a).) Third, Mr. Dehmel pointed us to 10 C.F.R. §§ 50.34a and 50.36a and Part 50, Appendix I "design objectives." EH Tr. at 460; Staff Exhibit 21 at 6. For example, 10 C.F.R. § 50.36a(a) requires licensees to keep releases of radioactive materials "as low as reasonably achievable" (ALARA). As to the design objectives specified in Part 50, Appendix I, we note that they are generally expressed on a "per-reactor"

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<sup>72</sup>The Staff's witnesses for the topic were Mr. Greg Stoetzel and Mr. Jean-Claude Dehmel. See EH Tr. at 457; Staff Exhibit 21.

<sup>73</sup>Dominion's witnesses for the topic were Mr. Ken Jha and Mr. Carl Tarantino. See EH Tr. at 534; Dominion Exhibit 14.

basis that would appear to allow a licensee with, for example, six reactors, to expose the public to six times the specified level of radiation.<sup>74</sup> For example:

The calculated annual total quantity of all radioactive material above background to be released from *each* light-water-cooled nuclear power *reactor* to unrestricted areas will not result in an estimated annual dose or dose commitment from liquid effluents for any individual in an unrestricted area from all pathways of exposure in excess of 3 millirems to the total body or 10 millirems to any organ.

10 C.F.R. Part 50, App. I, § II.A (emphasis added). Dominion indeed takes this more lenient interpretation, asserting that since it is applying for two units, it should be permitted to double its release of radiation under Appendix I. EH Tr. at 543; Dominion Exhibit 14 at 7.

As to the actual doses of radiation to the public from the NAPS Site and proposed ESP Site, the Staff testified that they are well within the above specified regulatory limits. Mr. Stoetzel testified that historical data show that “doses to the maximally exposed individual around the [NAPS] were a small fraction of the limits specified in the Federal Regulations.” EH Tr. at 458. With regard to the proposed new Units 3 and 4, Mr. Stoetzel testified that, according to the Staff’s calculations “estimated doses to the maximally exposed individual per unit were within the 10 CFR Part 50 Appendix I design objectives [and] . . . well within the regulatory standards of 40 CFR Part 190.” *Id.* at 469.

One question that concerned the Board was why the estimated radioactive effluent doses from the proposed Units 3 and 4 are twenty times higher than the doses from existing Units 1 and 2. Specifically, we referred to Table 5.4-11 in the Supplemental Safety Evaluation Report, Staff Exhibit 1, which states that the total exposure to radioactive effluents from the two new units will be 6.4 mrem per year (total body) and that the total exposure from Units 1 and 2 would be 0.32 mrem per year (total body), for a total combined dose of approximately 6.8 mrem per year (total body). *See* Board Safety Question 85; EH Tr. at 470. Both the Staff and Dominion acknowledged that the exposure from the proposed units was shown as twenty times higher than the exposure from the existing units and explained that this was an “artifact” of the conservative plant parameter envelope. Staff Answer to Safety Question 85; Dominion Answer to Safety Question 85; EH Tr. at 472-74. Asked if the Staff believed that a twenty-fold increase in radioactive effluent complied with the “as low as reasonably achievable” concept, Mr. Dehmel stated that the Staff had not made an ALARA determination, and that this would need to await the time when Dominion actually selected the “kind of

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<sup>74</sup> Appendix I also specifies that “[a]ccount shall be taken of the cumulative effect of all sources and pathways within the plant contributing to the particular type of effluent being considered.” 10 C.F.R. Part 50, App. I, § III.A.1.



rad waste system they're going to have." EH Tr. at 475-76. Mr. Dehmel stated that the ALARA determination is made at the COL stage. *Id.* at 529.

Mr. Stoetzel testified for the Staff that Dominion's "current operational monitoring program [for Units 1 and 2] is adequate to establish the radiological impacts to the environment related to construction and operation of the proposed units." EH Tr. at 478; Staff Exhibit 21 at 19. But he quickly backed away from this proposition when questioned about NRC's Liquid Radioactive Release Lessons Learned Task Force Final Report (Sept. 2006) which had recommended that reactors should monitor for unplanned releases to groundwater. EH Tr. at 478-79. For example, Mr. Stoetzel was asked, given his endorsement of the current monitoring program at NAPS, whether Dominion should abandon its proposal to implement a new "groundwater protection initiative." *Id.* Mr. Dehmel clarified the Staff's position, which was merely that the Staff believes that Dominion's current radiological monitoring program complies with the current regulations and regulatory guidance. *Id.* at 480-81. He declined to opine as to whether more monitoring, as per the Task Force recommendations, is advisable. *Id.* at 480.

Various other subjects were covered. The Staff witnesses attempted to explain the origin and derivation of the source terms<sup>75</sup> that the Staff used when calculating the  $\chi/Q$  values.<sup>76</sup> EH Tr. at 482-93. With regard to the source terms for reactors other than the AP1000, ABWR, and ESBWR, Mr. Dehmel stated that, using the PPE concept, they recognized that "four of the designs [covered by Dominion's application] are essentially conceptual designs. There is no operating history or no real information available." *Id.* at 484. Large variations in the gaseous (25 $\times$ ) and liquid (2 $\times$ ) exposure pathways over the last 4-year period for Units 1 and 2 were explained as due to operating outages. *Id.* at 496. NRC confidence levels associated with the  $\chi/Q$  values were discussed. *Id.* at 517-22.

Subsequent testimony from Dominion's witnesses confirmed some of the Staff's testimony. But we also learned, from testimony by Mr. Tarantino, that while the water in Lake Anna is not actually used for drinking water, this is used

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<sup>75</sup> "Source term refers to the magnitude and mix of the radionuclides released from the fuel [in any given event or accident], expressed as fractions of the fission product inventory in the fuel, as well as their physical and chemical form, and the timing of their release." 10 C.F.R. § 50.2.

<sup>76</sup> In order to calculate the radiation dose that an individual might receive as a result of an event or accident that releases radiation, you must know (or assume) the "source term" (the magnitude and mix of the radionuclides released at the source), the *distance* between the source of the release and the individual in question, and the amount of *dispersion* that might occur between these two points. The dispersion is a function of environmental and site conditions such as local meteorology, wind direction and velocity, building and natural structures and barriers, and site size. These parameters are incorporated into a single quantity  $\chi/Q$ , which is the airborne concentration of radioactivity (typically in units of Ci/L) divided by the plant release rate of the radioactive material (typically in units of Ci/s). Multiplying the calculated value of  $\chi/Q$  by the plant release rate thereby gives the radioisotopic concentration at the boundary reference point which can then be used to calculate a dose rate.

as a conservative assumption by Dominion. EH Tr. at 542. He added that “the tritium contribution to the liquid total body and critical organ doses in 2005 is the majority of its dose. [A]ctually 97<sup>1</sup>/<sub>2</sub> and 92 percent of the total dose was due to tritium for that particular year.” *Id.* at 543.

## **F. NEPA Alternatives**

Prior to the evidentiary hearing, the Board instructed the Staff to designate and produce a subject matter expert or experts to respond to questions concerning “the Staff’s identification [and] consideration of all reasonable alternatives including system design alternatives, alternative sites, and other alternatives and possible mitigation measures.” Hearing Order at 6. This is an issue under NEPA and relevant to several of the six fundamental issues that the Board must decide in an uncontested ESP proceeding. For example, NEPA Baseline Issue 1 requires that we determine whether NRC has complied with NEPA § 102(2)(C)(iii), which states that the NRC must provide a “detailed statement” on “alternatives to the proposed action.” 42 U.S.C. § 4332(C). At a later time, the Board indicated that Dominion was also welcome to provide witnesses on this subject, but it declined.<sup>77</sup>

### ***1. Written Evidence on Alternatives***

As a baseline for the testimony on this topic, it is important to review the written evidence concerning NEPA alternatives that is found in the FEIS and in Dominion’s Environmental Report (ER), Dominion Exhibit 11. At the outset in the FEIS, the NRC Staff indicated that it was following the NEPA alternatives process specified in NUREG-1555, the NRC “Environmental Standard Review Plan for Environmental Reviews for Nuclear Power Plants” (ESRP), specifically, section 9.3, “Alternative Sites.” FEIS at 8-1. The FEIS then devoted two sections to alternatives: one on the “Impacts of Alternatives” (FEIS § 8.0) and the other on the “Comparison of the Impacts of the Proposed Action and Alternative Sites” (FEIS § 9.0).

Section 8 covers both “system design alternatives” and “alternative sites.” With regard to system design alternatives, section 8 discusses three options for Unit 3 — once-through cooling, wet cooling, and dry cooling. FEIS §§ 8.2.1, 8.2.2, and 8.2.3. No system design alternatives are discussed for Unit 4. Section 8 then addresses “alternative sites,” discussing “Dominion’s Region of Interest” (ROI) (section 8.3.1); “Dominion’s Alternative Site Selection Process” (section

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<sup>77</sup> See Tr. at 613 (Apr. 18, 2007); E-mail from David Lewis to North Anna ESP Licensing Board (Apr. 20, 2007) (stating that “Dominion does not intend to present witnesses on Topics 3 (Zero Release) and 7 (NEPA Alternatives)”).

8.3.2); ‘‘NRC’s Evaluation of Alternative Sites’’ (section 8.3.3), and ‘‘Greenfield and Brownfield Alternative Sites’’ (section 8.3.4). The NRC Staff then compares the proposed site (i.e., North Anna) to the three alternative sites selected by Dominion (Surry, Savannah River, and Portsmouth). *See* FEIS §§ 8.4 to 8.9.

Section 9 of the FEIS then provides a more detailed comparison of the impacts of the proposed action and site relative to the three alternative sites selected by Dominion. In it, the Staff concludes that none of the three alternative sites is environmentally preferable or obviously superior to Dominion’s proposed action at the proposed site. FEIS §§ 9.2 and 9.3.

Chapter 9 of Dominion’s Environmental Report (ER) covered the topic of ‘‘Alternatives to the Proposed Action.’’ ER at 3-9-1. It analyzes two types of alternatives, the no-action alternative, ER § 9.1, and alternative sites, ER § 9.3.<sup>78</sup> The alternative sites section of the ER

presents the alternative site evaluation to determine whether there is any obviously superior site when compared to the ESP site. The ROI for the proposed action is defined, the concept of candidate sites within the ROI is presented, the sites selected as reasonable alternatives are identified, and the preferred site (i.e., the ESP site) is selected.

ER at 3-9-1 to 2. The ER describes its technical approach as using the ‘‘candidate site criteria described in NUREG-1555, Section 9.3 . . . to screen for candidate sites . . . in the ROI.’’ ER at 3-9-2. Then Dominion did an alternative site evaluation using forty-five site suitability criteria. *Id.*

First, Dominion defined its ROI as the area marked in Figure 9.3-1 in the ER, included here as Appendix B to this decision and marked with diagonal lines. *See* ER at 3-9-2. It is a large ROI, appearing to cover most of the eastern United States, and most of Oklahoma, Kansas, and Iowa, and significant portions of Texas, Louisiana, and other central or western states.

Dominion, using the candidate site criteria in section 9.3 of NUREG-1555, the Environmental Standard Review Plan (ESRP), to screen for candidate sites in the ROI, ER at 3-9-2, selected two federal (Department of Energy) sites — Portsmouth, Ohio, and Savannah River, South Carolina — and three DRI-owned nuclear power plant sites — the North Anna Plant, the Surry Power Station in Surry County, Virginia, and the Millstone Power Station in Waterford, Connecticut. *Id.* at 3-9-6. An additional justification for selecting North Anna and Surry was that each of these sites was originally issued construction permits for two additional nuclear power units. ER at 3-9-6. Millstone was subsequently rejected.<sup>79</sup>

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<sup>78</sup> The ER states that the subject of energy alternatives is not addressed. ER at 3-9-1.

<sup>79</sup> *Id.* Millstone was rejected from further evaluation because of its location, particularly its large population and its proximity to a special recreation facility. ER at 3-9-6 and EH Tr. at 579 (Kugler).

In short, Dominion identified four “candidate sites” within the ROI — North Anna, Surry, DOE Savannah River, and DOE Portsmouth — for further evaluation.” ER at 3-9-6. These were the sites that Dominion considered in its “Alternative Site Evaluation” in section 9.3.4 of the ER. *Id.*

## **2. Testimony Regarding Candidate Sites and Alternative Sites**

During the evidentiary hearing on NEPA alternatives, we focused first on the subject of the NRC’s duty to consider candidate and alternative *sites*. Mr. Kugler, testifying for the Staff, stated that they used NUREG-1555 for the NEPA alternatives analysis. EH Tr. at 559. He agreed that NUREG-1555 calls for the identification of an ROI, then the identification of “candidate sites” within the ROI, and then the selection of “alternative sites” from among the candidate sites. *Id.* at 561-64. Mr. Kugler said that the “candidate sites” were supposed to be “those sites, at least four, that are within the [ROI] that are considered in the comparative evaluation of sites to be among the *best that can reasonably be found* for the siting of a nuclear powerplant.” *Id.* at 562-63 (emphasis added). He defined “alternative sites” as “those *candidate sites* that are specifically compared to the proposed site to see if there is an obviously superior site.” *Id.* at 563.

When asked “what candidate sites did you consider . . . what are the best sites that can reasonably be found within that very large area [of Dominion’s ROI]?” Mr. Kugler indicated that he couldn’t remember whether the FEIS ever used the term “candidate site.” *Id.* at 564. He was not able to identify any portion of the FEIS where the Staff considered or discussed whether Dominion’s chosen “alternative sites” (Surry, Savannah River, and Portsmouth) sites were the best “candidate sites” that could reasonably be found in Dominion’s ROI. He stated “I’ve got to admit, the way we state it in the EIS, we don’t clearly state that we have done an evaluation of the candidate sites.” *Id.* at 573.

Mr. Kugler summarized the Staff’s approach as follows:

*The approach that was used in the ESRP is to review the process used by the applicant, and determine whether they have used a reasonable process to identify candidate sites, to identify the proposed site and the alternatives, and then to compare those sites. And that’s the approach we took. We used the slate of sites that the applicant had identified. We determined that the process they used to identify those sites was reasonable, that the slate of sites was reasonable. And then we evaluated the environmental — we evaluated the environmental impacts at the proposed alternative sites and we formed an independent comparison of those sites to determine whether any was environmentally preferable to the proposed site.*

EH Tr. at 572. Neither Dominion nor the NRC Staff compared sites within the

ROI that were owned by other companies. ER at 3-9-6; FEIS at 8-8 to 8-10. Dominion justified the exclusion of competitor sites as reasonable because of the unlikelihood that a competitor would allow Dominion to build a large generator on its site. *See* Dominion Answer to Environmental Question 121. *See also* Affidavit of Andrew J. Kugler in Response to ‘Dominion’s Supplement to the Record on Alternative Sites’ and Staff Supplement to the Record in this Proceeding with Respect to Alternative Sites (May 11, 2007).

Focusing on possible candidate sites with nuclear power plants on them, Mr. Kugler agreed that the Staff did not comply with the requirement that “All nuclear power plants within the identified region of interest having an operating nuclear power plant or construction permit issued by the NRC should be compared with the applicant’s proposed site.” *See* NUREG-1555 at 9.3-7; EH Tr. at 566. He stated that this was because the Commission had ruled, in 1977, that “it was not considered reasonable to consider sites that are owned by another utility as alternative sites,” EH Tr. at 567, citing the *Seabrook* decision.<sup>80</sup> *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 536 (1977). When asked why NUREG-1555, written more than 20 years after the 1977 *Seabrook* case, did not reflect his interpretation of *Seabrook*, Mr. Kugler said that the NUREG was being updated. *Id.*

When asked whether North Anna, Surry, Savannah River, and Portsmouth were the “best that could reasonably be found” within the ROI, Mr. Kugler cited page 9.3-6 of NUREG-1555 which states that there will be “special cases” where the proposed site is already the site of a nuclear power plant. EH Tr. at 570. But he later agreed that the “special case” provision only applies to the “proposed site,” and does not relieve NRC from going through the candidate site and alternate site analysis for the alternatives. *Id.* at 575.

Turning to possible *nonnuclear* power plant sites within the ROI, Mr. Kugler said he did not know how many such sites were within the ROI, EH Tr. at 579, but that it would probably be a large number. *Id.* at 580. He stated that the NRC

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<sup>80</sup> The Staff also cited this *Seabrook* decision in its response to the Board’s written questions, stating “applicants do not consider sites that are owned by a different power generation company” and that “this comports with” the *Seabrook* decision. Staff Answer to Environmental Question 119. It may be true that applicants do not consider such sites. But this does not necessarily absolve the NRC (which is the entity charged with complying with NEPA) to do so under the rule of reason. In any event, the *Seabrook* decision did not hold, or even state, that NRC cannot or should not consider sites owned by entities other than the applicant when identifying candidate sites or evaluating alternative sites. Indeed, the *Seabrook* case, where the NRC evaluated *eighteen alternative sites within a relatively small ROI consisting of New Hampshire and Maine*, *Seabrook*, CLI-77-8, 5 NRC at 536, *contrasts sharply* with this case, where the NRC considered only *three alternative sites, within a ROI of almost half of the continental United States*. All *Seabrook* held was that, under the NEPA rule of reason, eighteen alternatives in a small ROI was enough. *Id.*

did not look at nonnuclear power plant sites owned by other companies, *id.* at 581, or even those owned by Dominion and its associated companies. *Id.* at 580.<sup>81</sup>

The Board also questioned the Staff regarding non-power plant sites not owned by Dominion. We asked whether the Staff considered any federally owned sites other than the two DOE sites. EH Tr. at 582. Mr. Kugler testified that NRC did not look at any other federally owned sites, whether owned by DOE or by any other federal agencies or entities.<sup>82</sup>

The ER and FEIS also generically excluded, after a brief discussion, any greenfield or brownfield sites. E.R. 9.3.3; FEIS at 8-10. *See also* Kugler Affidavit at 1 through 3; Declaration of Marvin L. Smith (May 7, 2007). Dominion determined, and the NRC Staff agreed, that they would be unlikely alternative site candidates. ER at 3-9-4. *See also* Kugler Affidavit at 1-3; Declaration of Marvin L. Smith (May 7, 2007).

Mr. Kugler stated that NRC evaluated the “process” that Dominion used to develop its candidate sites, and used only the Dominion slate in the NRC alternatives analysis. EH Tr. at 582-83. Mr. Kugler said that NRC relied on the Dominion and Bechtel 2000 report, which addressed candidate sites submitted by the applicant, *id.* at 601, and that this report was “probably similar” to one NRC would have performed. *Id.* at 602-03.

In addition, we note that NEPA is only procedural in nature and, after requiring that an agency consider all reasonable alternatives, does not require that the most environmentally benign site be chosen. *See Seabrook*, CLI-77-8, 5 NRC at 528. The Commission has ruled that, once an adequate alternatives analysis is done, the applicant’s proposed site will be rejected “only . . . where an alternative site is obviously superior.” *Id.* *See also Florida Power & Light Co.* (St Lucie Nuclear Power Plant, Unit 2), ALAB-435, 6 NRC 541 (1977).

In section 9.0 of the FEIS, the NRC Staff evaluated the environmental impacts of constructing and operating two new units at the proposed ESP Site and the three alternative sites to determine (1) whether any of the alternative sites is environmentally preferable, and (2) if so, whether any of them is “obviously superior” to the proposed ESP Site. FEIS at 9-1 to 9-9. The Staff concluded:

None of the alternative sites was determined to be environmentally preferable to

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<sup>81</sup> Mr. Kugler later agreed that the presence of nuclear-related activities on a site (as opposed to a nonnuclear power plant) “doesn’t bear at all” on the environmental preference of a site. EH Tr. at 603-04.

<sup>82</sup> EH Tr. at 582. One of the reasons given for excluding other sites as possible candidate or alternative sites was a concern that they might not have sufficient transmission lines for electrical power. EH Tr. at 598. We note, however, that there is no assurance that the North Anna site has sufficient transmission line capacity. The Staff has acknowledged that “the applicant might determine that one or more additional lines are needed” for North Anna. Staff Answer to Environmental Question 14A.

the proposed North Anna ESP site. Therefore, the Staff concluded that none of the alternative sites is obviously superior to the proposed North Anna ESP site.

FEIS at 9-9.

### 3. *Testimony Regarding System Design Alternatives*

The evidentiary hearing on NEPA alternatives also inquired into the subject of “System Design Alternatives,” as covered in section 8.2 of the FEIS. We noted that NRC considered three system design alternatives for Unit 3 (dry, wet, and once-through cooling water), but considered no system design alternatives for Unit 4. EH Tr. at 585. Mr. Vail, testifying for the Staff, stated that they accepted dry cooling for Unit 4 because it would not add to the “cumulative effect” of Unit 3. *Id.* He stated: “We’re looking at it incrementally. If you add anything incrementally [for Unit 4] that results in a significant water use, which would be anything other than a dry system, you would push it over that threshold.” *Id.* at 587. And again “We don’t look at it as not [*sic*] two units in isolation. It’s the cumulative — the cumulative system.” *Id.* at 588.

When asked whether his concern for the cumulative/incremental impacts of the multiple units on the site led him to consider the NEPA alternative of requiring additional water conservation measures on Units 1 and 2 as a trade-off or offset against the incremental and cumulative water impacts of Units 3 and 4, Mr. Vail said no, this was not considered. *Id.* This was consistent with his earlier testimony, as follows:

Judge Karlin: So you didn’t look at whether or not the 8700 gallons per minute [evaporative losses] from Unit 3 could be offset by doing something with regard to Units 1 and 2; you did not look at that?

Mr. Vail: Correct. We did not look at Unit 1 and 2 as mitigation for Unit 3.

*Id.* at 120.

Prior to the evidentiary hearing, the Staff had acknowledged that “the fact that a possible alternative is beyond the Commission’s power to implement does not absolve the Commission of any duty to consider it” but had added that “that duty is subject to a ‘rule of reason’ [citations omitted].” NRC Staff Legal Brief in Response to Licensing Board’s Environmental-Related Questions [Question 45] at 22. The Staff “did not find it reasonable to consider measures that would interfere with existing operations of reactors other than those that are subject to the proposed action” reasoning that “imposing such water-saving measures on existing Units 1 and 2 would likely result in derating the plants, thereby reducing

generating capacity.’’ *Id.* In short, the Staff did not discuss or consider this option in its NEPA alternatives analysis because the Staff deemed it unreasonable.

#### **4. *Post-Hearing Filings Relating to Alternative Sites***

At the end of the evidentiary hearing, Mr. Lewis, counsel for Dominion, requested permission to make a post-hearing submission relating to the NEPA alternatives issue, specifically “explaining exactly why Dominion’s fossil facilities are not reasonable alternatives that should even be considered.” EH Tr. at 787. The Board granted that request. *Id.* at 790. The NRC Staff then requested an opportunity to respond to Dominion’s submission and the Board agreed. *Id.* at 796, 799.

On May 7, 2007, the Board received Dominion’s Supplement to the Record on Alternative Sites (Dominion Supplement) which attached a Declaration of Marvin L. Smith (Smith Declaration) “explaining why the non-nuclear power plants owned by Dominion’s affiliates are not reasonable alternatives that should have been identified or considered as candidate sites.” Dominion Supplement at 1. Mr. Smith provided several reasons to exclude nonnuclear power plants. First, Mr. Smith stated that the nonnuclear power plants owned by Dominion “typically” lack the land needed to meet the exclusion area requirements for a nuclear power plant. Smith Declaration at 2. Second, Dominion’s nonnuclear power plants “typically do not have excess transmission capacity.” Smith Declaration at 3. Third, Mr. Smith asserted that nonnuclear power plants are “often sited in locations that are more urban than is appropriate for a nuclear unit.” Smith Declaration at 3. Mr. Smith then sought to “demonstrate the reasonableness” of Dominion’s judgment, by saying that Dominion has “examined the characteristics of the nonnuclear power plant sites owned by its affiliates” and that “this examination revealed only one such site that would be big enough to provide an appropriate exclusion area.” *Id.* Mr. Smith then informed us that this undisclosed site is unsuitable because it would not have sufficient water resources to support a wet/dry cooling system (assuming, it appears, that wet/dry cooling is a siting prerequisite). *Id.* As a legal matter, Dominion cited Commission case law to the effect that the Board can and should use Dominion’s supplemental information to “amend the FEIS *pro tanto*” and base its NEPA decision on the amended record. Dominion Supplement at 1-2.

On May 11, 2007, the Board received the “NRC Staff Response to ‘Dominion’s Supplement to the Record on Alternative Sites’ and Staff Supplement to the Record” (NRC Staff Response). At the outset we note that the NRC Staff Response goes far beyond what it requested, i.e., the opportunity to respond to Dominion’s submission about its nonnuclear sites. EH Tr. at 796-97. The Staff argued that the Dominion Supplement was not necessary because the Staff evaluation of alternative sites was adequate. NRC Staff Response at 1. The Staff



proceeded to submit an affidavit from Mr. Kugler.<sup>83</sup> Mr. Kugler reiterated his oral testimony, asserting that the Staff followed the guidance of NUREG-1555 § 9.3 in evaluating candidate sites because “the Staff determined that Dominion employed a reasonable process” for identifying and evaluating candidate sites. Kugler Affidavit at 2. Mr. Kugler then recites a list of activities from Dominion’s ER. *Id.* Dominion described a large ROI. *Id.* Dominion eliminated “large numbers of potential sites in the ROI, both greenfield and brownfield” on a “generic basis.” *Id.* at 2-3. Dominion decided generically that greenfield sites were not reasonable. Dominion decided generically that brownfield sites were not reasonable. *Id.* at 3. Dominion rejected, and the Staff agreed, any consideration of existing nuclear sites owned by other companies, as not reasonable. *Id.*

### **G. Seismic Safety**

Prior to the evidentiary hearing, the Board instructed each party to produce a subject matter expert or experts to provide a brief presentation and respond to questions concerning the “geology and seismology of the proposed ESP site and nature, adequacy, and confidence levels associated with the data and the standards used by the Staff to assess the seismic safety of the proposal.” Hearing Order at 6. One of the reasons the Board was concerned about this issue was because the FSER indicated that the proposed ESP Site did *not* meet the “reference probability” set forth in NRC Regulatory Guide 1.165 “Identification and Characterization of Seismic Sources and Determination of Safe Shutdown Earthquake Ground Motion” (Mar. 1997). FSER at 2-178.

Seismic siting factors are part of the safety determination this Board must make, primarily under AEA Safety Issue 2, which requires the presiding officer to “determine whether, taking into account the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors, having characteristics that fall within the parameters for the site, can be constructed and operated without undue risk to the health and safety of the public.” 10 C.F.R. § 52.21; *supra* pp. 557-58. Part 100, which deals with “Reactor Site Criteria,” specifies that the Commission will consider the physical characteristics of the proposed site, including the geologic and seismic siting factors. 10 C.F.R. § 100.20(c)(1). The principal geologic and seismic considerations that guide the Commission in its evaluation of the suitability of a proposed site are set forth in 10 C.F.R. § 100.23, “Geologic and seismic siting criteria.” The main criterion is whether there is a “reasonable assurance that a nuclear power plant can be constructed and operated at the

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<sup>83</sup> Affidavit of Andrew J. Kugler in Response to “Dominion’s Supplement to the Record on Alternative Sites” and Staff Supplement to the Record in this Proceeding with Respect to Alternative Sites (May 11, 2007) (Kugler Affidavit).

proposed site without undue risk to the health and safety of the public.” 10 C.F.R. § 100.23. Subsections (c) and (d) of this regulation, “Geological, seismological, and engineering characteristics” and “Geologic and seismic siting factors,” respectively, govern ESP siting decisions. *See* 10 C.F.R. § 100.23(a). For example, the regulations specify:

The geological, seismological, and engineering characteristics of a site and its environs must be investigated in sufficient scope and detail to permit an adequate evaluation of the proposed site, to provide sufficient information to support evaluations performed to arrive at estimates of the *Safe Shutdown Earthquake Ground Motion* [SSE], and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site.

10 C.F.R. § 100.23(c). An SSE is “the vibratory ground motion for which certain structures, systems, and components are designed, pursuant to Appendix S to 10 C.F.R. Part 50, to remain functional.” Reg. Guide 1.165, App. A at 1.165-10. The regulations specify that paragraph IV(a)(1) of Appendix S to 10 C.F.R. Part 50 defines the “minimum SSE.” 10 C.F.R. § 100.23(d)(1). That paragraph states that “[t]he nuclear power plant must be designed so that, if the [SSE] occurs, certain structures, systems, and components will remain functional and within applicable stress, strain, and deformation limits.” 10 C.F.R. Part 50, App. S, ¶IV(a)(1)(ii).

Meanwhile, the NRC Staff issued Reg. Guide 1.165 to help it implement 10 C.F.R. § 100.23(c) and (d). Reg. Guide 1.165 at 1.165-1. That regulatory guide establishes the Staff’s regulatory position with regard to “probabilistic seismic hazard analysis [PSHA] procedures” and “procedures for determining the SSE.” Reg. Guide 1.165 at 1.165-6, 7, respectively. The regulatory guide establishes the “reference probability SSE” against which any proposed new reactor site in the central or eastern United States must be judged, as “Median  $1 \times 10^{-5}$ .” Reg. Guide 1.165, App. B, Figure B.2. *See also* Staff Answer to Safety Question 58. “The reference probability ( $1 \times 10^{-5}$ ) is used to determine the controlling earthquakes for the site.” Staff Answer to Safety Question 57.

The FSER spent over 100 pages on the subject of “geology, seismology, and geotechnical engineering” and we will not attempt to summarize that discussion here. FSER 2-140 to 2-251. We note, however, that the Staff examined the geology in the area of the ESP Site and concluded that “no capable tectonic faults exist in the plant site area (5 mi) that have the potential to cause near-surface

displacement” and further that “no capable tectonic sources have been identified in the [Central Virginia Seismic Zone].”<sup>84</sup> *Id.* at 2-168.

The FSER also dealt with the fact that the ESP Site does not meet the reference probability established by Reg. Guide 1.165 as a health and safety standard. The SSE reference probability under Reg. Guide 1.165 “using median hazard results, is  $10^{-5}$  per year.” FSER at 2-177. Dominion, however, requested a “higher reference probability” of a “mean hazard value of  $5 \times 10^{-5}$ .” *Id.* at 2-178. Dominion sought to justify the higher SSE reference value by arguing that (1) revised ground motion models indicate that the sites used for the Reg. Guide 1.165 reference value were subject to higher ground motion (i.e., were riskier) than previously thought, (2) the mean recurrence time for certain large earthquakes in the New Madrid and Charleston regions has decreased (i.e., such earthquakes are more likely to recur), and (3) the use of a mean hazard value instead of a median hazard value results in a higher reference probability because mean hazard curves lie above median hazard curves. *Id.* The Staff indicated that it performed an independent analysis and “was able to verify that the reference probability proposed by the applicant ( $5 \times 10^{-5}$ ) is sufficiently conservative.” *Id.* at 2-200. Accordingly, the Staff concluded that the ESP Site is “consistent with Appendix S to 10 CFR Part 50,” and that “the applicant’s SSE was determined in accordance with Reg. Guide 1.165.” *Id.* at 2-201.

Turning to the evidentiary hearing, the NRC Staff produced one witness, Dr. Clifford Munson, Senior Geophysicist, NRC Office of New Reactors, to provide a presentation and answer questions concerning seismic safety. EH Tr. at 645. Dr. Munson provided a slide presentation that was admitted as Staff Exhibit 23. EH Tr. at 52, 53. Likewise, the Board heard testimony on this subject from a panel of Dominion witnesses<sup>85</sup> and Dominion submitted a slide presentation that was admitted as Dominion Exhibit 16. EH Tr. at 692.

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<sup>84</sup> A “capable tectonic fault or source” is a tectonic structure that can generate both vibratory ground motion and tectonic surface deformation such as faulting or folding at or near the earth’s surface, which includes “at least one of the following characteristics:

- a. Presence of surface or near surface deformation of landforms or geologic deposits of a recurring nature within the last approximately 500,000 years or at least once in the last approximately 50,000 years.
- b. A reasonable association with one or more moderate to large earthquakes or sustained earthquake activity that are usually accompanied by significant surface deformation.
- c. A structural association with a capable tectonic source having characteristics of either section a or b in this paragraph such that movement on one could be reasonably expected to be accompanied by movement on the other.

Reg. Guide 1.165, App. A, 1.165-10. *See also* Staff Answer to Safety Question 52.

<sup>85</sup> Dominion’s witnesses for the issue were Dr. William Lettis, Dr. Robin McGuire, and John Davie. *See* EH Tr. at 693-94.

The presentation and testimony by the Staff's witness, Dr. Munson, elicited several key points. Dr. Munson pointed out that Reg. Guide 1.165 establishes an SSE reference probability of  $1 \times 10^{-5}$  median, EH Tr. at 651, and that the proposed ESP Site does not meet this criterion. *Id.* at 662. He stated that although Reg. Guide 1.165 allows the reference probability to be updated, NRC has not updated it. *Id.* at 663. However, he indicated that, because of a better understanding of the twenty-nine sites upon which the reference value was based, it no longer reflects a current understanding of the seismic hazard, *id.* at 660, and that if the reference probabilities were recalculated based on current knowledge the probability of earthquakes would likely be higher. *Id.* at 652.

Dr. Munson went on to agree that, because the proposed ESP Site does not meet the SSE reference probability of  $1 \times 10^{-5}$  median, Dominion requested that the Staff accept a different SSE probability, i.e.,  $5 \times 10^{-5}$  mean. EH Tr. at 651. Dr. Munson agreed that Dominion was asking for a more lenient standard for the seismic risk at the ESP Site. *Id.* at 663, 670, 676.

Although Dominion was requesting a relaxation in the otherwise applicable SSE reference probability ( $1 \times 10^{-5}$  median), Dr. Munson testified that it was his opinion, and the Staff's conclusion, that the SSE probability requested by Dominion was justified. EH Tr. at 653, 678.

The Staff concluded that the revised reference probability adequately reflects the current understanding of seismic hazard in the Central and Eastern U.S. and the ESP site is acceptable from a geologic and seismological standpoint and the applicable regulations have been met.

*Id.* at 653. *See also* Staff Exhibit 23 at 13. This conclusion was based on a number of factors, including (a) the difference between the use of median and mean values ("the mean hazard curves are higher than the median curves because the ground motion is generally normally distributed," EH Tr. at 658), (b) the fact that current hazard estimates reveal that the Reg. Guide 1.165 reference value "no longer reflects a current understanding of seismic hazard," *id.* at 660, and (c) the conclusion that high-frequency ground motions are not a significant risk to reactors at this site. *Id.* at 690.

Turning to Dominion's witnesses, Dr. Lettis focused on the unnamed "fault 'a'" that traverses the proposed ESP Site. EH Tr. at 698. Most importantly, he testified that studies showed conclusively that unnamed fault "a" is not a capable tectonic fault or source. *Id.* at 699. It has not been active in the last approximately 200 million years. *Id.*; *Id.* at 708, 710. In addition, Dr. Lettis testified that he studied the issue in the field and concluded that unnamed fault "a" is not as long as Dr. Lou Pavlides, of the U.S. Geological Survey, had suggested. *Id.* at 701-07. Dr. Lettis also testified that it was his opinion that the use of Dominion's alternative approach to the SSE probability is acceptable. *Id.* at 746.

Dr. McGuire, testifying for Dominion, acknowledged that the proposed ESP Site does not meet the  $1 \times 10^{-5}$  median SSE reference probability specified in Reg. Guide 1.165. EH Tr. at 727. But he testified that the use of the  $5 \times 10^{-5}$  mean SSE probability is conservative, *id.* at 725, and safe. *Id.* at 745. He said that Dominion's proposed value is very similar to the results that would be obtained by using a performance-based calculation. *Id.* at 733-34.

## V. DECISIONS ON THE SIX FUNDAMENTAL ESP QUESTIONS

As noted above, in an uncontested proceeding for an ESP, the Board makes six fundamental decisions. *Supra* pp. 554-60. For three of these decisions (two AEA issues and one Overriding NEPA Issue), the Board's role is analogous to that of an appellate court applying the "substantial evidence" test, *Clinton I*, 62 NRC at 39, where the Board must decide "whether the application and the record of the proceeding contain sufficient information and the review of the application by the Commission's staff has been adequate to support [the relevant findings] . . . proposed to be made . . . by the Director of [NRR]." See 10 C.F.R. § 2.104(b)(2) and 68 Fed. Reg. 67,489 (Dec. 2, 2003). For the other three fundamental issues, the NEPA Baseline Issues, the Board instead "must reach [its] own independent determination of uncontested NEPA baseline questions." *Clinton I*, 62 NRC at 45. For all six fundamental issues, however, the Board is to make its decisions without conducting a "de novo" review.

The following is our analysis and decision on each of these six issues. For logical convenience, we will cover the two AEA safety issues first, the three NEPA baseline issues second, and the Overriding NEPA Issue last.

### A. Decision on AEA Safety Issue 1

The first decision that the Board must make is whether the application and the record of the proceeding contain sufficient information, and the review of application by the NRC Staff has been adequate to support a negative finding on the question whether the issuance of the ESP will be inimical to the common defense and security or to the health and safety of the public. See AEA § 103d, 10 C.F.R. § 50.40(c), 10 C.F.R. § 2.104(b)(2)(i), and *Clinton I*, 62 NRC at 33 n.32. The Commission has referred to this as "AEA Safety Issue 1," *Clinton I*, 62 NRC at 33 n.32, and characterized it as analogous to judicial "appellate review." *Id.* at 39 ("An analogy is to the function of an appellate court, applying the 'substantial evidence' test").

In making our decision on AEA Safety Issue 1, the Board took an independent "hard look" at the Staff's findings, but did not attempt to duplicate them. See *id.* at 34. Rather than conducting a *de novo* determination, we probed the facts

and logic behind the Staff's FSER to determine whether the Staff's review was adequate and whether the record supported a finding that issuance of the ESP would not be "inimical to the common defense and security or to the health and safety of the public."

After our review of the record, including relevant portions of Dominion's application, the FSER, the answers to our safety questions, the prefiled written testimony, and the live testimony heard during the evidentiary hearing, the Board concludes that the application and the record contain information that is sufficient, and the review by the NRC Staff has been adequate, to support a finding that the issuance of the ESP would not be inimical to the common defense and security or to the health and safety of the public, subject to the permit conditions, COL Action Items, site characteristics and bounding parameters contained in Appendix A to the FSER and the conditions specified in the Draft ESP Permit submitted by the NRC Staff as Exhibit 17. In particular, we reviewed section 11, "Radiological Effluent Release Dose Consequences from Normal Operations," and section 15, "Accident Analysis," in both the FSER and Supplemental FSER, and we asked over a dozen written questions (e.g., Safety Questions 72-87) concerning radiological effluents and doses. We asked a similar number of questions concerning design basis accident radiological exposures and dispersion calculations (e.g., Safety Questions 99-107). In this regard, we are satisfied that the record is sufficient, and the Staff review has been adequate to support the conclusion that the issuance of the ESP will not result in the exceeding of any of NRC's existing numeric radiological standards for the siting of nuclear power plants.<sup>86</sup> Although unresolved issues exist and may be addressed if and when Dominion actually applies to construct Unit 3 and/or 4, this Board, exercising its appellate review function on AEA Safety Issue 1, finds that the issue has been satisfied.

## **B. Decision on AEA Safety Issue 2**

The second decision that the Board must make is whether the application and the record of the proceeding contain sufficient information and the review of application by the NRC Staff has been adequate to support a positive finding that, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having the characteristics that fall within the parameters for the site, can be constructed without undue risk to the health and safety of the public. *See* 10 C.F.R. §§ 52.21, 2.104(b)(2)(i), and 2.104(b)(1)(i)(d); 68 Fed.

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<sup>86</sup>We recognize that an ESP, by itself, does not set numeric radiological standards, because, *inter alia*, it is only one step (the siting approval step), in the process for obtaining regulatory approval to build nuclear reactors. In addition, the nonnumeric ALARA standard has not been resolved and will be addressed if and when a COL application is submitted. *See* EH Tr. at 475-76, 529-30.

Reg. at 67,489; *Clinton I*, 62 NRC at 33 n.32. The Commission has referred to this as “AEA Safety Issue 2.” *Clinton I*, 62 NRC at 33 n.32. We approached this decision in the same “appellate review” manner as AEA Safety Issue 1, above. We took a hard look at the FSER, probed the Staff’s facts and logic, but did not conduct a *de novo* review.

Our first step in considering AEA Safety Issue 2 was to study the site criteria that the issue specifically refers to, i.e., 10 C.F.R. Part 100. This part establishes numerous factors to consider when evaluating a proposed site, including population density and use characteristics, the nature and proximity of man-related hazards such as airports and the physical characteristics of the site including seismology, meteorology, geology, and hydrology. *See* 10 C.F.R. § 100.20. Non-seismic siting criteria include the requirement to have an exclusion area and a low population zone and to consider the population center distance, site atmospheric dispersion characteristics, radiological release limits and dose consequences, hydrology, and the proximity of transportation routes, industrial locations, and military facilities. *See* 10 C.F.R. § 100.21. Geologic and seismic siting criteria include the geological, seismological, and engineering characteristics of the site and the PPE, the ability to satisfy the safe shutdown earthquake ground motion criteria, the potential for surface tectonic and nontectonic deformations and other factors such as soil and rock stability, liquefaction potential, and slope stability. 10 C.F.R. § 100.23.

The Staff discussed all of these issues, and more, in the FSER. We reviewed the FSER, and some relevant parts of Dominion’s application, and posed over 100 safety-related questions, many of them focusing on 10 C.F.R. Part 100 siting issues. These questions covered matters such as population densities and growth projections, Board Safety Questions 4, 5, 6; transportation routes, Board Safety Questions 7, 8; meteorology, Board Safety Questions 10, 13-16, 23, 37-39, 42-44; hydrology, Board Safety Questions 45-50; tectonic sources and faults, Board Safety Questions 52-55; safe shutdown earthquakes, Board Safety Questions 56-63, 71; and soils, Board Safety Questions 67-68. In addition, the evidentiary hearing covered four safety-related topics relevant to the 10 C.F.R. Part 100 siting criteria: (1) Site Characteristics (Hydrology, Groundwater, Isotope Transport), *supra* pp. 569-75; (2) the Zero Release Commitment, *supra* pp. 575-79; (3) Tritium, *supra* pp. 579-83, and (4) Seismic Safety, *supra* pp. 594-98.

For purposes of AEA Safety Issue 2, the first three of these topics are associated with the meaning and impact of proposed Permit Condition 4, an issue that concerned both prior ESP Boards<sup>87</sup> and that has been specifically addressed by the Commission.<sup>88</sup> The relevant regulatory issue is whether AEA Safety Issue

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<sup>87</sup> *See Clinton ESP*, LBP-06-28, 64 NRC at 495; *Grand Gulf ESP*, LBP-07-1, 65 NRC at 54-61.

<sup>88</sup> *Clinton II*, CLI-07-12, 65 NRC at 206-07; *Grand Gulf ESP*, CLI-07-14, 65 NRC at 217-18.

2 is satisfied, given the fact that the Staff<sup>89</sup> and Dominion<sup>90</sup> both acknowledge that Dominion has *not* provided all of the siting information required by Part 100, such as distribution coefficients and other hydrologic information that “must be obtained from on-site measurements” under 10 C.F.R. § 100.20(c)(3).

In its most recent ESP decision on March 27, 2007, the Commission, focusing on a similar permit condition, asked the parties to brief the issue of “deferring any further site characterization relating to radionuclide transport until the construction permit or combined license (COL) stage.” *Grand Gulf*, CLI-07-14, 65 NRC at 217. Without expressly saying so, the Commission approved such deferral by modifying the permit condition slightly and then issuing the ESP. *Id.* Accordingly, the Commission decision binds us here, with the result that, at least with regard to AEA Safety Issue 2, any gaps and questions concerning groundwater transport and hydrology safety issues are acceptable and deferred until the construction permit or combined license stage. Our discussion and analysis of these issues in sections IV.B, C, and D, *supra*, may shed some light on these matters, however, and identify questions and issues that remain unresolved.

Inasmuch as 10 C.F.R. Part 100 also imposes seismic siting criteria, we examined this topic in our consideration of AEA Safety Issue 2. During the evidentiary hearing, we satisfied ourselves that the record supports the Staff’s conclusion that “unnamed fault ‘a,’” which underlies the proposed ESP site, has been dormant for approximately 200 million years. EH Tr. at 699, 710. We also elicited the fact that although the proposed ESP Site does not meet, and is more lenient than, the safe shutdown earthquake ground motion “reference probability” of  $1 \times 10^{-5}$  median earthquake per year established by Reg. Guide 1.165, *see* FSER 2-178, EH Tr. at 663, 670, 676, the Staff has examined this issue and reasonably concluded that the alternative proposed by Dominion ( $5 \times 10^{-5}$  mean) is sufficiently conservative and is consistent with the requirements of Appendix S to 10 C.F.R. Part 50.<sup>91</sup> FSER at 2-200 to -201; EH Tr. at 653, 678.

Accordingly, the Board concludes, with reference to AEA Safety Issue 2, that Dominion’s application and the record of this proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate to support a positive finding that, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having the characteristics that fall within the parameters for the site, can be constructed without undue risk to the health and safety of the public.

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<sup>89</sup> EH Tr. at 216-18.

<sup>90</sup> EH Tr. at 286.

<sup>91</sup> Appendix S to 10 C.F.R. Part 50 is imposed as a siting criterion by 10 C.F.R. § 100.23(d)(1).



### C. NEPA Baseline Issue 1

On NEPA Baseline Issue 1, the Board must independently consider and decide whether the requirements of NEPA §§ 102(2)(A), (C), and (E) and of the Commission's NEPA regulations in 10 C.F.R. Part 51 have been met. We are required to make this decision pursuant to 10 C.F.R. § 51.105(a)(1) and *Calvert Cliffs*, 449 F.2d at 1109. *See also* 10 C.F.R. § 2.104(b)(3)(i) and the original notice for this proceeding, 68 Fed. Reg. at 67,489. Our decision on NEPA Baseline Issue 1 is an independent executive function-type of decision (e.g., the Board is serving as a surrogate decisionmaker for the Commission), rather than the “appellate review” and “substantial evidence test” decision like that called for in the two AEA Safety Issues. This is further demonstrated by the fact that the NEPA Baseline Issues do not include the injunction that the Board decide “whether the application and the record of the proceeding contain sufficient information, and the review of the application by the Commission's staff has been adequate to support [the relevant findings] . . . proposed to be made . . . by the Director of [NRR].” *See* 10 C.F.R. § 2,104(b)(2)(i); 68 Fed. Reg. at 67,489. Instead, NEPA Baseline Issue 1 requires us to decide an ultimate question — whether the requirements of NEPA §§ 102(2)(A), (C), and (E) have been met.<sup>92</sup>

NEPA §§ 102(2)(A), (C), and (E) state:

(2) all agencies of the Federal Government shall:

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

....

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment; a detailed statement by the responsible official on —

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

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<sup>92</sup> Likewise, in making our decision on the NEPA Baseline Issues, we are *not* acting as a reviewing court pursuant to the Administrative Procedure Act, which calls upon courts to decide the narrow issue as to whether the “agency action” was “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A). *See Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 682 (7th Cir. 2006). Instead, we *are* acting as the initial decisionmaker (subject to Commission review), in a role akin to the Commissioners. We study the FEIS, evaluate it, ask pertinent questions, and decide whether the license should be issued, denied, or appropriately conditioned.

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

. . . .

(E) study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

NEPA §§ 102(2)(A), (C), and (E), 42 U.S.C. §§ 4332(2)(A), (C), and (E). This statutory provision makes clear that NEPA Baseline Issue 1 covers three subparts, one of which includes five subissues.

NEPA and the Commission regulations state that “to the fullest extent possible . . . all agencies of the Federal Government shall comply with the procedures in section 102(2).” NEPA § 102(1), 42 U.S.C. § 4332(1), and 10 C.F.R. § 51.10(a). “NEPA’s ‘dual purpose’ is to ensure that federal officials fully take into account the environmental consequences of a federal action before reaching major decisions and to inform the public, Congress, and other agencies of those consequences.” *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 352 (2002) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 87, 97 (1983) and other cases). However, NEPA requires only a discussion of reasonably foreseeable impacts and its application is subject to the “rule of reason.” *Id.* See also *New York v. Kleppe*, 429 U.S. 1307, 1311 (1974).

A central element of NEPA is that each agency must prepare an environmental impact statement (EIS) for any “major Federal action significantly affecting the quality of the human environment.” NEPA § 102(2)(C), 42 U.S.C. § 4332(2)(C). And the “heart” of the EIS is the *alternatives analysis* required by NEPA § 102(2)(C)(iii). See 10 C.F.R. Part 51, Subpart A, App. A, § 5 (“This section [alternatives analysis] is the heart of the environmental impact statement”). See also 40 C.F.R. § 1502.14; *City of Shoreacres v. Waterworth*, 420 F.3d 440, 450 (5th Cir. 2005). “All reasonable alternatives will be identified” in the EIS and “[a]n otherwise reasonable alternative will not be excluded from discussion solely on the ground that it is not within the jurisdiction of the NRC.” 10 C.F.R. Part 51, Subpart A, App. A, § 5. See also *Seabrook*, ALAB-471, 7 NRC at 486 and other cases cited by the Staff in the NRC Staff Legal Environmental Brief at 22. “Agencies need only discuss those alternatives that are reasonable and ‘will bring about the ends’ of the proposed action.” *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 55 (2001); NRC Staff Legal Environmental Brief at 22.

The NRC regulations for ESPs implement the NEPA requirements as follows:

The Commission shall prepare an environmental impact statement during the review of the [ESP] application, in accordance with the applicable provisions of 10 C.F.R. part 51, provided, however, that the draft and final environmental impact statements prepared by the Commission *focus on the environmental effects of construction and operation* of a reactor, or reactors, which have characteristics that fall within the postulated site parameters, and provided further that the statement *need not include an assessment of the benefits (for example, need for power)* of the proposed action, but *must include an evaluation of alternative sites* to determine whether there is any obviously superior alternatives to the site proposed.

10 C.F.R. § 52.18. In short, an FEIS must be prepared and it must focus on the environmental effects of construction and operation of the reactors covered by the ESP application. It need not include an assessment of benefits, such as the need for power, but it must include an evaluation of alternative sites. In this regard, the Seventh Circuit recently held that 10 C.F.R. § 52.18, whereby NRC defers the NEPA analysis of the need for power until the combined operating license stage, does not violate NEPA. *Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 682 (7th Cir. 2006).

We now turn to our analysis and decision as to each of the three subparts of NEPA Baseline Issue 1.

**1. NEPA § 102(2)(A)**

Section 102(2)(A) requires that the NRC use a “systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man’s environment.” NEPA § 102(2)(A), 42 U.S.C. § 4332(2)(A). Our review of the FEIS confirms that the NRC used a systematic and interdisciplinary approach covering, *inter alia*, meteorology, seismology, geology, hydrology, ecology, radiological health physics, socioeconomic factors, and historic and cultural resource factors. These analyses were prepared by a diverse array of engineers, scientists, and social scientists, as shown in Appendix A to the FEIS. In addition, the NRC Staff consulted with numerous agencies and organizations with relevant expertise, as shown in Appendices B and C to the FEIS. The Board has no difficulty in concluding that NEPA § 102(2)(A) has been satisfied.

**2. NEPA § 102(2)(C)**

The second subpart of NEPA Baseline Issue 1 involves the independent

consideration of whether the requirements of NEPA § 102(2)(C) have been met. This statutory provision has five subelements. It requires that, for every major Federal action significantly affecting the quality of the human environment, the NRC must issue a detailed statement by the responsible official on (i) the environmental impact of the proposed action, (ii) any unavoidable adverse environmental effects, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. NEPA § 102(2)(C)(i)-(v), 42 U.S.C. § 4332(2)(C)(i)-(v). The FEIS, which this Board studied at some length, is the Staff's method of complying with NEPA § 102(2)(C) and 10 C.F.R. Part 51.<sup>93</sup>

As set forth below, the majority of this Board concludes that the FEIS satisfies the requirements of NEPA § 102(2)(C).

*a. NEPA § 102(2)(C)(i)*

With regard to NEPA § 102(2)(C)(i) (environmental impacts) the FEIS describes the environmental impacts of both the construction and operation of the two units at the proposed ESP Site, including land-use impacts, meteorological and air quality impacts, water-related impacts, ecological impacts, socioeconomic impacts, historical and cultural resource impacts, environmental justice impacts, and radiological and nonradiological health impacts. FEIS §§ 4, 5. The FEIS also covers fuel cycle impacts, transportation impacts, and cumulative impacts. FEIS §§ 6, 7. We recognize, as discussed above, that the FEIS did not address one possible environmental impact, i.e., groundwater contamination (and resulting lake impacts) from proposed Units 3 and 4. *See* FEIS 5-59 to 5-61; EH Tr. at 635. However, proposed Permit Condition 4 requires measures to preclude such impacts and, in any event, it is clear that the issue of groundwater impacts must be addressed at the COL stage. In addition, although we have raised the question as to whether the Staff's investigation and discussion of the impacts on minority and low-income populations satisfy the Commission's policy on environmental justice, *see* section VI.A *infra*, we believe, on balance, that the FEIS discussion on this matter did not violate NEPA § 102(2)(C)(i). In sum, we conclude that the FEIS provides a sufficient description of the reasonably foreseeable impacts of the proposed action.

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<sup>93</sup> Appendix A to Part 51 provides NRC's basic format and instructions for doing an EIS.

*b. NEPA § 102(2)(C)(ii)*

With regard to NEPA § 102(2)(C)(ii), we are likewise satisfied that the FEIS provides a sufficient statement of “any adverse environmental impacts which cannot be avoided.” 42 U.S.C. § 4332(2)(C)(ii). The issuance of the ESP alone would not authorize construction of Units 3 and 4, but would instead only authorize site preparation and preliminary preparatory work under a 10 C.F.R. § 50.10(e) limited work authorization. If a COL or CP is never issued or ultimately denied, Dominion would be required to redress even such limited site preparation activities and restore the site. 10 C.F.R. § 50.17(c). As the Staff states:

there would be no unavoidable adverse environmental impacts associated with the granting of the ESP with the exception of impacts associated with the site preparation and preliminary construction activities. . . . If the ESP is granted and any or all of the activities above are performed, but [a construction permit is not issued] the ESP holder would be required to redress the site according to the site redress plan.

FEIS at 10-5 to 10-6. We agree, and conclude that NEPA § 102(2)(C)(ii) is satisfied.

*c. NEPA § 102(2)(C)(iii)*

Turning to NEPA § 102(2)(C)(iii), we must decide whether the FEIS complies with the requirement that NRC provide a “detailed statement” of “the alternatives to the proposed action.” NRC and CEQ regulations and federal case law agree that the alternatives analysis is “the heart of the environmental impact statement.” 10 C.F.R. Part 51, App. A, § 5; 40 C.F.R. § 1502.14. NRC regulations specify that the EIS must include an analysis of “alternatives available for reducing or avoiding adverse environmental effects.” 10 C.F.R. § 51.71(d) (Draft EIS). *See also* 10 C.F.R. § 51.91 (Final EIS). “All reasonable alternatives will be identified and the range of alternatives discussed will encompass those proposed to be considered by the ultimate decisionmaker.” 10 C.F.R. Part 51, Subpart A, App. A, § 5. With regard to ESP applications, the EIS “must include an evaluation of alternative sites to determine whether there is any obviously superior alternative to the site proposed.” 10 C.F.R. § 52.18.

While requiring that “all reasonable alternatives will be identified” and considered by the agency, *see* 10 C.F.R. Part 51, Subpart A, App. A, § 5; 40 C.F.R. § 1502.14, federal case law and Commission issuances have also attempted to

balance the practical truth that not every alternative can be considered.<sup>94</sup> In 1978, the Supreme Court wrote:

To make an impact statement something more than an exercise in frivolous boilerplate the concept of alternatives must be bounded by some notion of feasibility. . . . Common sense also teaches us that the “detailed statement of alternatives” cannot be found wanting simply because the agency failed to include every alternative device and thought conceivable by the mind of man. Time and resources are simply too limited to hold that an impact statement fails because the agency failed to ferret out every possible alternative, regardless of how uncommon or unknown that alternative may have been at the time the project was approved.

*Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 551 (1978). Federal courts now review the range of alternatives in an EIS under the “rule of reason.” *Westlands Water District v. U.S. Department of Interior*, 376 F.3d 853, 868 (9th Cir. 2004); *City of Bridgeton v. Federal Aviation Administration*, 212 F.3d 448, 458 (8th Cir. 2000). Under this rule, “the EIS need not consider an infinite range of alternatives, only reasonable or feasible ones.” *Westlands Water Dist.*, 376 F.3d at 868. This reasonableness limitation is particularly important when considering alternative sites for a project because “the number of potential locations for any project is infinite . . . the agency is only required to consider ‘all alternatives which were feasible and reasonably apparent at the time of drafting the EIS.’” *Dubois v. U.S. Department of Agriculture*, 102 F.3d 1273, 1290 (1st Cir. 1996).<sup>95</sup>

Which alternatives are considered reasonable is determined by the project’s goals. *City of New York v. U.S. Department of Transportation*, 715 F.2d 732, 742 (2d Cir. 1983). The D.C. Circuit has held that this project goal is to be determined by the applicant, not the agency: “[a]n agency cannot redefine the goals of the proposal that arouses the call for action.” *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 199 (D.C. Cir.), *cert. denied*, 502 U.S. 994 (1991). Thus, while the underlying goal should not be purposefully narrowed to predetermine

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<sup>94</sup> See, e.g., *Metropolitan Edison v. People Against Nuclear Energy*, 460 U.S. 766, 776 (1983) (“The scope of the agency’s inquiries must remain manageable if NEPA’s goal of ensuring a fully informed and well considered decision, is to be accomplished”) (internal citation omitted).

<sup>95</sup> Similarly, an agency is not obligated to consider unreasonable alternatives, including those “whose effect cannot be reasonably ascertained, and whose implementation is deemed remote and speculative.” *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982). See also *Vermont Yankee*, 435 U.S. at 551; *Utahns for Better Transportation v. U.S. Department of Transportation*, 305 F.3d 1152, 1172 (10th Cir. 2002).

the outcome,<sup>96</sup> the agency's alternative analysis should be based around the applicant's goals, including the applicant's economic goals. *City of Grapevine v. U.S. Department of Transportation*, 17 F.3d 1502, 1506 (D.C. Cir.), *cert. denied*, 513 U.S. 1043 (1994). Similarly, in the only ESP alternatives analysis case to be decided by a federal court, the United States Court of Appeals for the Seventh Circuit affirmed an NRC Commission decision approving a narrower project goal and subsequently narrower collection of alternatives partly because the applicant was "in no position to implement" the additional alternatives. *Envtl. Law and Policy Ctr.*, 470 F.3d at 683.

The Commission's case law gives similar weight to the applicant's wishes in setting the project goal. *See Hydro Resources, Inc.*, CLI-01-4, 53 NRC at 55 ("when reviewing a discrete license application filed by a private applicant, a federal agency may appropriately 'accord substantial weight to the preferences of the applicant and/or sponsor in the siting and design of the project'"). The Commission has tied giving great weight to the applicant's goal directly to the selection of alternatives in the FEIS:

The FEIS appropriately gave PFS's (and its members') goal of providing an offsite storage alternative great weight. In considering alternatives under NEPA, an agency must "take into account the needs and goals of the parties involved in the application."

*Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 146 (2004). The project goal may incorporate the applicant's "economic goals." *Hydro Resources, Inc.*, CLI-01-4, 53 NRC at 55. The same idea was expressed by the Commission in 2006 when it criticized an intervenor who "erroneously appears to assume that the NEPA analysis of 'alternatives' should ignore the stated purposes of the project *and the Applicant's needs.*"

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<sup>96</sup> *See City of New York*, 715 F.2d at 743 ("an agency will not be permitted to narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered"). *See also City of Carmel-By-The-Sea v. U.S. Department of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997) ("[t]he stated goal of a project necessarily dictates the range of 'reasonable' alternatives and an agency cannot define its objectives in unreasonably narrow terms"); *Busey*, 938 F.2d at 196 ("an agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality").

Similarly, in its 1981 nonbinding guidance, the CEQ counseled that "reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant" and that "[i]n determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,027 (Mar. 23, 1981).

*USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 467 (2006) (emphasis added).

Agencies are not obliged to create alternatives to a project in an EIS and may instead rely upon the applicant's list of alternatives. An agency "is not a business consulting firm. It is in no position to conduct a feasibility study of alternative sites." *River Road Alliance, Inc. v. Corps of Engineers of U.S. Army*, 764 F.2d 445, 452-53 (7th Cir. 1985). Rather, it "has to depend on the parties for such information." *Id.* See also *Friends of the Earth v. Hintz*, 800 F.2d 822, 833 (9th Cir. 1986) ("The Corps was not required to conduct a further study of alternatives or to independently find possible sites overlooked by [the applicant].").

Section 9.3 of the Environmental Standard Review Plan, or NUREG-1555, is the agency's guidance on performing its NEPA alternative sites analysis. The scheme developed in the guidance has three stages: an analysis and evaluation of "the *region of interest, candidate sites* and a reasonable number of proposed *alternative sites* identified by the applicant." NUREG-1555 at 9.3-1. In addition, the Staff evaluates "the methodology used by the applicant to identify these sites." *Id.*

The "'Region of interest' (ROI) is the geographic area considered in searching for candidate sites." NUREG-1555 at 9.3-1. Candidate sites "are those sites (at least four) that are within the region of interest and that are considered in the comparative evaluation of sites to be among the best that can reasonably be found for the siting of a nuclear power plant." *Id.* Proposed sites "are those candidate sites that are specifically compared to the proposed site to determine if there is an obviously superior site." *Id.*

In accordance with federal case law that does not require agencies to identify alternatives on their own, *supra* p. 609, NRC does not require that its Staff conduct an independent field survey of the ROI for purposes of identifying candidate sites, and thence alternative sites. Instead, NUREG-1555 requires that the NRC Staff evaluate whether the applicant's selection process was adequate and whether "the candidate site areas identified by the applicant represent a reasonably complete list of such areas within the identified ROI." NUREG-1555 at 9.3-9. The NUREG then specifies certain "minimum criteria" that a candidate site must meet. *Id.* The guidance then calls for a screening of the candidate sites:

Based on reconnaissance level information, the reviewer should determine if the candidate sites identified by the screening process may be considered as potentially licensable and should also determine that there is reasonable assurance that no potential alternative sites in this category have been omitted. Although there can be no specific criteria for determining that an adequate number of candidate sites have been identified, the reviewer should make such a determination, based on the ROI, the number of candidate areas, and the number and type of alternative sites evaluated by the applicant. In general, however, the identification of two or more



different areas and three to five alternative sites, in addition to the proposed site could be reviewed as adequate.

*Id.* at 9.3-10.

Finally, NUREG-1555 addresses the special case, where, as here, the North Anna site was selected by Dominion because it is the site of an existing nuclear power plant:

Recognize that there will be special cases in which the proposed site was not selected on the basis of a systematic site-selection process. Examples include plants proposed to be constructed on the site of an existing nuclear power plant previously found acceptable on the basis of a NEPA review and/or demonstrated to be environmentally satisfactory on the basis of operating experience. . . . For such cases, the reviewer should analyze the applicant's site selection process only as it applies to candidate sites other than the proposed site, and the site comparison process may be restricted to a site-by-site comparison of these candidates with the proposed site. As a corollary, all nuclear power plant sites within the identified region of interest having an operating nuclear power plant or a construction permit issued by the NRC should be compared with the applicant's proposed site.

*Id.* at 9.3-6 to -7.

Based on the record of in this proceeding, including the ER, the FEIS, and the documents, testimony, and post-hearing submissions covered briefly in section IV.F, *supra* p. 587, the majority of the Board concludes that the NRC Staff's alternative sites description and analysis satisfies NEPA § 102(2)(C)(iii).

Dominion presented an adequate variety of alternative sites, narrowing them down using the method prescribed by NUREG-1555. Dominion's ER defined its ROI and adequately justified its large size:

Prior to deregulation of the power industry, alternative sites were typically located within a utility's ROI, usually its service territory. Under deregulation, power producers cannot recover construction and operation costs associated with development of a commercial power generation facility through the cost-of-service rates process. Instead, a newly completed power generation facility has to generate power for sale to consumers in a competitive marketplace. Dominion would only proceed with the development of such a new facility if it is economically viable.

ER at 3-9.2. The ER discussed and identified an appropriate number of candidate sites, using the NUREG-1555 screening criteria. *Id.* at 3-9-2 to -6. This discussion covered sites that represented realistic options reasonably available to Dominion: two federal sites, generic greenfield sites, and existing nuclear power stations owned by DRI subsidiaries. *Id.* It then identified and evaluated four candidate

sites: North Anna, Surry, DOE Savannah River, and DOE Portsmouth. *Id.* at 3-9-6 to -12.

The Staff correctly reviewed Dominion's alternatives selection process, again guided by NUREG-1555. It found that Dominion's ROI, "while broad, does not appear to be unreasonable to the Staff. Many applicants can no longer define the ROI based on a service area because of deregulation in the power industry (i.e., commonly the owner of the power generation facility is not the owner of the transmission and distribution facilities)." Staff Answer to Environmental Question 119. The Staff also evaluated Dominion's process for selecting candidate and alternative sites, comparing it to the minimum criteria in NUREG-1555 and examining whether "the process they used to identify those sites was reasonable, that the slate of sites was reasonable." EH Tr. at 572 (Kugler). *See also* FEIS §§ 8.3.1 to 8.3.4.

The dissent argues that, considering the large ROI, more possible sites for the project could have been found, particularly those owned by competitors. This argument ignores the rule of reason: an EIS should not consider unreasonable or unfeasible alternatives. *Dubois*, 102 F.3d at 1290. It also ignores specific Commission case law instructing the agency to be guided by an applicant's goals when conducting an EIS (including economic goals). *See Hydro Resources, Inc.*, CLI-01-4, 53 NRC at 55.

Dominion's goal is to "generate power for sale to consumers in a competitive marketplace. Dominion would only proceed with the development of such a new facility if it is economically viable." ER § 3-9-2. Locating the plant at a competitor's site does not meet this goal; Dominion informed the Board that "[t]he possibility of Dominion building new nuclear units at an unaffiliated utility's sites is neither reasonable, feasible, nor consistent with Dominion's business purposes." Dominion Answer to Environmental Question 121. Similarly, the company presented a compelling list of how building on the site of a current nuclear power plant, as opposed to a nonnuclear plant site or greenfield, would better meet its goal: the existing transmission lines, corridors, monitoring programs, and infrastructure represent enormous savings, environmental scoping has in large part been done and the baselines established, the land is acquired, and maintenance and operation costs could be greatly reduced. ER at 3-9-4 to 3-9-5. Consequently, in accordance with Commission case law, the NRC Staff was correct to limit the EIS project goal as Dominion did and exclude nonnuclear, competitor, and greenfield sites from the considered alternatives. The Staff correctly recognized it was not its job to either change Dominion's project goals or search independently for alternatives in addition to the reasonable ones submitted by Dominion. *See Hydro Resources, Inc.*, CLI-01-4, 53 NRC at 55; *River Road Alliance*, 764 F.2d at 452-53. Additionally, the Staff found the exclusions reasonable, writing in its answers to the Board that "siting a new nuclear power station at the site of an existing nuclear power station operated by another utility would likely present

logistical, competitive, and regulatory complications.’’ Staff Answer to Environmental Question 121. Having excluded unreasonable alternatives not in keeping with Dominion’s economic goals, the ER and the EIS presented an adequate survey of the reasonable or feasible alternatives, as required. *See Westlands Water Dist.*, 376 F.3d at 868. This range of reasonable alternatives meets the requirements of NEPA § 102(2)(C)(iii).

The dissent also suggests that Dominion and the Staff violated NEPA because they never compared North Anna against ‘‘all nuclear power plant sites within the identified [ROI]’’ as NUREG-1555 requires. NUREG-1555 at 9-3-7. The method prescribed by NUREG-1555 for generating alternative sites is a reasonable and fair method for conducting the alternatives analysis required by NEPA § 102(2)(C)(iii) and 10 C.F.R. § 52.18. It meets the rule of reason test because, in following it, both the applicant and the agency considered ‘‘all alternatives which were feasible and reasonably apparent at the time of drafting the EIS.’’ *Dubois v. U.S. Dep’t of Agriculture*, 102 F.3d at 1290. However, it is not a statute, a regulation, or binding case law. Instead, it is guidance binding neither the Staff nor the Board. *See* NUREG-1555 at 9.3-1. Dominion’s ROI is far larger than the ROIs in the other two ESP cases: Grand Gulf’s was the seven plant sites across the country owned by Grand Gulf’s parent corporation, Entergy, *see* Grand Gulf Final EIS (2006), NUREG-1817 at 8-31; Clinton’s was the state of Illinois. *See* Clinton Final EIS (2006), NUREG-1815 at 8-26. Creating an ROI so much larger was perhaps a tactical mistake on Dominion’s part, which made the NUREG-1555 three-step process of an ROI, candidate sites, and alternative sites difficult to implement. Under NEPA, however, this tactical mistake is of little importance. Instead, what matters is that Dominion and the Staff presented a range of realistic and very different alternatives which allowed the Staff to conduct a detailed examination of each site’s various positives and negatives that, as noted below, more than satisfies NEPA’s alternatives analysis requirement. *See* FEIS §§ 8 to 9; NEPA § 102(2)(C)(iii), 42 U.S.C. § 4332(2)(C)(iii). The size of the ‘‘region of interest,’’ a creation of NUREG-1555, does not affect the breadth of these alternatives or the quality of the EIS analysis.

Finally, with regard to the alternative site analysis, there is no question that the NRC Staff complied with the regulatory requirement to compare the proposed site to the three alternative sites. The detailed discussion also fulfilled NUREG-1555’s requirements. *See* 10 C.F.R. § 52.18; NUREG-1555 at 9.3-1. The Staff correctly examined whether any of the alternative sites were ‘‘obviously superior’’ and found none to be so. FEIS §§ 8, 9.3. And although each site has positives and negatives, none of the three alternatives is environmentally preferable or obviously superior to the North Anna site.

We now turn briefly to another aspect of the alternatives analysis required by NEPA § 102(2)(C)(iii), specifically a consideration of ‘‘system design alternatives.’’ The FEIS considered three main system design alternatives for the

cooling water system for Unit 3: once-through cooling system, wet cooling, and dry cooling. *See* FEIS §§ 8.2.1, 8.2.2, and 8.2.3 respectively. The Staff concluded that a combination of wet and dry cooling systems for Unit 3 was the best. FEIS at 10-9. It did not expressly consider system design alternatives for Unit 4. The exclusion is more than justified because (a) the universe of design options was discussed and subsumed in the discussion on Unit 3 and (b) the dry cooling system proposed for Unit 4 was obviously the option with the least environmental impact.

We also agree with the Staff that it was not reasonable or necessary to consider, as a system design alternative to the application for an ESP for Units 3 and 4, the imposition of water conservation measures on preexisting Units 1 and 2. Units 1 and 2 already use once-through cooling, which results in approximately the same amount of water being returned to the lake as is withdrawn, albeit at higher temperatures. *See* Draft EIS at 3-5 (“The once-through portion of the cooling system would return approximately the same amount of water [as withdrawn] to the discharge canal and the WHTF”).

In sum, the Board concludes, under the NEPA rule of reason, that NEPA § 102(2)(C)(iii) has been complied with. All reasonable alternatives, both alternative sites and system design alternatives, have been identified, considered, and evaluated.

*d. NEPA § 102(2)(C)(iv)*

The fourth element of our decision as to whether NEPA § 102(2)(C) has been met is a determination as to whether the FEIS adequately covers the “relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity.” NEPA § 102(2)(C)(iv), 42 U.S.C. § 4332(2)(C)(iv). The Staff discusses this matter in section 10.4 of the FEIS. Its main points are (a) the only short-term impact on the environment would be from possible site preparation activities under a limited work authorization, which impacts would be eliminated under the site redress plan, and (b) any discussion of the enhancement of long-term productivity would be a discussion of “benefits” which can be deferred at the ESP stage under 10 C.F.R. § 52.18. We agree with the Staff that discussion of this element should be performed if and when the ESP holder applies for a construction permit or combined operating license.

*e. NEPA § 102(2)(C)(v)*

The fifth element of NEPA § 102(2)(C) is a description of “any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.” NEPA § 102(2)(C)(v), 42 U.S.C.

§ 4332(2)(C)(v). As discussed with regard to the second and fourth subelements, above, the granting of the ESP would not, in itself, authorize any activity that would have any such irreversible or irretrievable commitments. Section 10.5 of the FEIS discusses this point and we determine that NEPA § 102(2)(C)(v) is satisfied.

### **3. NEPA § 102(2)(E)**

NEPA Baseline Issue 1 requires that we make one additional statutory determination — whether or not the NRC has met the requirement to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” NEPA § 102(2)(E), 42 U.S.C. § 4332(2)(E). In this context, compliance with NEPA § 102(2)(E), which focuses on alternatives, is substantially equivalent to compliance with the NEPA § 102(2)(C)(iii) alternatives analysis.<sup>97</sup> We have already covered this issue *supra*, and need not repeat it here. We conclude that NEPA § 102(2)(E) is satisfied.

### **4. 10 C.F.R. Part 51**

Finally, NEPA Baseline Issue 1 requires that we decide whether the Staff has complied with the requirements of 10 C.F.R. Part 51. *See* 10 C.F.R. § 51.105(a)(1) (“the presiding officer will determine whether . . . the regulations in this subpart have been met”). To a substantial extent Part 51 parallels and elaborates on the requirements of NEPA and the NEPA regulations promulgated by the Council on Environmental Quality in 40 C.F.R. Parts 1500 to 1508. In addition, the Part 51 regulations impose certain obligations on the applicant, e.g., to submit an environmental report which the NRC Staff uses as input to the draft and final environmental impact statements. *See* 10 C.F.R. §§ 51.45 and 51.50. For example, the ER must discuss each of the five subelements covered by NEPA § 102(2)(C), *see* 10 C.F.R. § 51.45(b)(1)-(5). Based on our review, we conclude that the requirements of Part 51 have been met.

## **D. NEPA Baseline Issue 2**

NEPA Baseline Issue 2 requires the Board to “independently consider [and decide] the final balance among conflicting factors contained in the record of the

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<sup>97</sup>The significant difference between NEPA § 102(2)(C)(iii) and (E) is that the latter requires the agency to perform an alternatives analysis, even if the proposed action is not a “major Federal action[s] significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C).

proceeding with a view to determining the appropriate action to be taken.’’ 10 C.F.R. § 51.105(a)(2). This decision is required by *Calvert Cliffs*, 449 F.2d at 1118, and *Clinton I*, 62 NRC at 45. *See also* 10 C.F.R. § 2.104(b)(3)(ii).

In a significant sense, the determination of the “final balance among conflicting factors” must be made at the CP or COL stage because the regulations exempt the FEIS from covering, and the Board from considering, at the ESP stage, the prospective *benefits* (such as the need for power). *See* 10 C.F.R. § 52.18. Thus, we cannot do a NEPA *cost-benefit* analysis, or final *balance* among conflicting factors at this time. Further, as we have discussed with regard to NEPA Baseline Issue 1, the issuance of the ESP by itself does not authorize construction of any nuclear reactors and thus presents no unavoidable adverse environmental impacts, irreversible and irretrievable commitments of resources, or even any environmental impacts at all (other than via the limited work authorization). What it does is to “bank” the site for 20 to 40 years, for possible further developments. *See supra* pp. 560-61.

Certainly, as discussed above, this Board has considered and probed various factors related to the issuance of the ESP. We examined the potential surface water impacts that would occur if the two units were ultimately constructed, such as the lowering of the water levels in Lake Anna and the lessening of water flows in the downstream North Anna River during certain time periods. We also asked about possible groundwater impacts, and were assured that this was partially covered by proposed Permit Condition 4 and otherwise would be deferred to the COL stage. We assessed the likely increases in radiological effluents that would be released if Units 3 and 4 were constructed and we found that, assuming the PPE is met, these releases and doses would be well within the multiple numeric levels set by NRC regulations.<sup>98</sup> We also recognize that the construction of two new units would ever so slightly increase the chance of a design basis accident, but concluded that these probabilities are so small as to not weigh against the proposed ESP.

Thus, we have independently balanced such factors as are covered within the limited ambit of the ESP FEIS, and determine that the appropriate action to be taken is to issue the proposed ESP, with the proposed permit conditions contained in Staff Exhibit 17, and subject to the permit conditions, COL action items, site characteristics, and plant parameter envelope values, representations, assumptions, and unresolved issues specified in Appendices I and J to the FEIS.

### **E. NEPA Baseline Issue 3**

NEPA Baseline Issue 3 requires the Board to “determine . . . whether the

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<sup>98</sup> Section VI.B discusses the multiplicity of these numeric and ALARA requirements.

construction permit . . . should be issued, denied, or appropriately conditioned to protect environmental values.<sup>99</sup> Again, as articulated in 10 C.F.R. § 51.105(a)(3) and *Calvert Cliffs*, the Board makes this decision. 449 F.2d at 1118. *See also* 10 C.F.R. § 2.104(b)(3)(iii) and 68 Fed. Reg. at 67,489. Without belaboring the point, we believe that our answer to NEPA Baseline Issues 1 and 2 suffices here. It is our determination that the ESP should be issued and should include the proposed permit conditions contained in Staff Exhibit 17, and the permit conditions, COL action items, site characteristics, and plant parameter envelope values, representations, assumptions, and unresolved issues specified in Appendices I and J to the FEIS. However, none of the foregoing findings, permit conditions, COL action items, or items listed as requiring further action or follow-up shall be treated as “resolved” for purposes of 10 C.F.R. § 52.39(a)(2).

#### **F. Overriding NEPA Issue**

The final decision that the Board must make in an uncontested ESP proceeding is to “determine whether the NEPA review conducted by the NRC staff has been adequate.” 10 C.F.R. § 51.105(a)(4). *See also Calvert Cliffs*, 449 F.2d at 1118; *Clinton I*, 62 NRC at 33 n.33. The Commission referred to this as the “overriding NEPA issue” as distinguished from the three Baseline NEPA issues. *Clinton I*, 62 NRC at 33 n.33.

It is the determination of this Board that the NEPA review conducted by the NRC Staff has been adequate. As stated in our discussion of NEPA Baseline Issue 1, we believe that the Staff has complied with NEPA § 102(2)(A), (C), and (E). Within the limitations of the ESP environmental analysis, e.g., no assessment of benefits or cost-benefit analysis, and recognizing that there are various unresolved issues under 10 C.F.R. § 52.39 that must be addressed if and when a COL or CP is sought, we conclude that the NEPA review by the NRC Staff was adequate.

### **VI. NOVEL AND IMPORTANT ISSUES THAT MAY MERIT COMMISSION CONSIDERATION**

In *Clinton II*, CLI-07-12, 65 NRC at 205, the Commission interpreted 10 C.F.R. § 2.340(f) to provide that a Board’s initial decision on an ESP is not effective until the Commission reviews it and takes final agency action. Given this automatic review, the Board wishes to identify several relatively novel and important issues where Commission guidance may be useful. These are: (a) whether the Staff’s environmental justice analysis in the FEIS met the “greater detail” standard mandated by the NRC Environmental Justice Policy, (b) how

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<sup>99</sup> *See* note 31 *supra*.

the NRC's multiple radiation protection standards apply to new reactors that are proposed to be added at a site with preexisting nuclear reactors and radiological effluents; and (c) the application of the Commission's statement prohibiting partial ESPs and ESPs where adequate information is not available to a situation where significant elements of the PPE for the ESP are missing and numerous siting issues are unresolved due to lack of information.

#### **A. Environmental Justice "In Greater Detail"**

Executive Order 12898, issued in 1994, sets forth the policy that the Executive Branch should make efforts to promote "Environmental Justice" (EJ) with regard to minority and low-income populations.<sup>100</sup> The NRC has incorporated these EJ goals into its reviews under NEPA and issued its own "Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions" (NRC EJ Policy).<sup>101</sup> The Office of Nuclear Reactor Regulation (NRR), which handles ESP applications, also has issued its own guidance concerning EJ (NRR EJ Guidance).<sup>102</sup>

The NRC EJ Policy points out that NRC's environmental justice reviews are to be conducted as part of the general NEPA review in NRC proceedings. 69 Fed. Reg. at 52,047. As such, the issue of environmental justice focuses on the physical environment and is meant to "identify and weigh disproportionately significant and adverse environmental impacts on minority and low-income populations that may be different from those impacts on the general population." *Id.*

The core of NRC's EJ policy is a simple if/then proposition. *If* the percentage of minority or low-income people in the impacted area<sup>103</sup> exceeds by 20% the percentage of minority and low-income people in the State or County as a whole, *or if* minority or low-income populations in the impacted area exceed 50% of the

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<sup>100</sup> Executive Order No. 12898 (Section 1-101), Federal Actions To Address Environmental Justice in Minority and Low-Income Populations, 59 Fed. Reg. 7629 (Feb. 16, 1995).

<sup>101</sup> 69 Fed. Reg. at 52,040. The draft of the NRC EJ Policy was published for comment on November 5, 2003. 68 Fed. Reg. 62,642. NRC's EJ policy was previously contained in two guidance documents, one governing reactor licensing and one governing materials licensing, and in case law. NRC EJ Policy at 52,041. *See also* NRR EJ Guidance, *infra* note 105; Environmental Review Guidance for Licensing Actions Associated with NMSS Programs (Aug. 22, 2003), ADAMS Accession No. ML033550003; *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77 (1998); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-20, 56 NRC 147, 153-55 (2002).

<sup>102</sup> NRR Office Instruction, LIC-203, Rev. 1, Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues (May 24, 2004), Appendix D, Environmental Justice Guidance and Flow Chart, ADAMS Accession No. ML033550002 [NRR EJ Guidance].

<sup>103</sup> In licensing actions involving nuclear power reactors, the impacted area is generally a 50-mile radius around the plant. NRC EJ Policy at 52,047-48.



total population,<sup>104</sup> then NRC will consider EJ “in greater detail.” 69 Fed. Reg. at 52,048.

Under current NRC staff guidance, a minority or low-income community is identified by comparing the percentage of the minority or low-income population in the impacted area to the percentage of the minority or low-income population in the County (or Parish) and the State. If the percentage in the impacted area significantly exceeds that of the State or the Country percentage for either the minority or low-income population then EJ will be considered in greater detail. “Significantly” is defined by staff guidance to be 20 percentage points. Alternatively, if either the minority or low-income population percentage in the impacted area exceeds 50 percent, EJ matters are considered in greater detail.

*Id.* (emphasis added). In this case, the FEIS establishes that the percentages of minority and low-income people in the impacted area exceed the 20% threshold, and the question is whether the FEIS satisfied the requirement to consider EJ “in greater detail.”

The NRC EJ Policy provides no explanation as to what level of “greater detail” is required. The NRR EJ Guidance, however, does address this issue to some extent, stating that such an analysis “in greater detail” must include a determination of the environmental impacts of the proposed action on minority and low-income populations, and of their significance. NRR EJ Guidance at D-9. If there are no “potentially significant environmental impacts,” or if there are no minority or low-income populations at the location of the existing impacts, then the review is complete at that stage. If there are potentially significant impacts to minority or low-income populations, a more comprehensive analysis focusing on health effects, environmental impacts, and possible mitigation measures is required. *Id.* at D-10 to D-11. In either case, however, the Staff should include “sufficient information to allow the public to understand the rationale for the conclusion.” *Id.* at D-11.

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<sup>104</sup>The NRR EJ Guidance document specifies the procedures to be used to screen for the presence of minority or low-income populations within a 50-mile radius of the facility. NRR EJ Guidance at D-3; see also NRC EJ Policy at 52,047-48. Census data, ordinarily examined at the level of the census block group, should be used to identify minority and low income populations within this area, although populations may also be identified through the EIS scoping process or by other means. NRR EJ Guidance at D-4. A minority or low-income population exists for purposes of the EJ analysis if more than 50% of the population in a census block group falls into the relevant groups, or if the relevant population is significantly greater (ordinarily at least 20 percentage points greater) than the population in the remainder of the state or county. *Id.* at D-8 to D-9; see also NRC EJ Policy at 52,048. If minority and/or low-income populations meeting these screening thresholds are present within the 50-mile radius, the second part of the process outlined in the NRC EJ Policy is triggered and the NRC Staff must conduct an EJ analysis “in greater detail.” NRR EJ Guidance at D-9 to D-11.

In this case, the FEIS addresses environmental justice review in four main sections. The first, section 2.10, “Environmental Justice,” consists of two pages of text and two maps, and focuses exclusively on whether or not a more detailed EJ analysis is required, i.e., whether the percentages of minority or low-income populations within the 50-mile radius meet the 20% or 50% thresholds. FEIS at 2-76 to 2-79. However, after carefully reading section 2.10 several times, the Board was still unable to determine whether the NRC Staff had concluded that the EJ thresholds had been met, i.e., that EJ needed to be considered in greater detail. Accordingly, we asked the NRC Staff to clarify this point, and they confirmed that indeed, the EJ thresholds had been met. *See* Staff Answer to Environmental Question 25.

Thus we turn to the three other EJ sections in the FEIS to see if the Staff has analyzed EJ “in greater detail.”<sup>105</sup> The three FEIS sections — 4.7, 5.7, and 7.6 — are each less than one page. FEIS at 4-36, 5-52, and 7-7. FEIS § 4.7 covers EJ impacts caused by the construction of Units 3 and 4. FEIS § 5.7 covers EJ impacts caused by the operation of the facility. FEIS § 7.6 covers several subjects and is entitled “Socioeconomic, Historic and Cultural Resources, Environmental Justice.” FEIS at 7-7.

FEIS §§ 4.7 and 5.7 are virtually identical and consist of three paragraphs each. The first paragraphs of each provide a general explanation about the concept of EJ, and are identical (except that section 4.7 refers to Figures 2-6 and 2-7, whereas section 5.7 replicates these figures and refers to them as Figures 5-1 and 5-2). The middle paragraphs of sections 4.7 and 5.7 specify what the Staff did to investigate EJ, and are again identical, except that 4.7 has one extra sentence which talks about the FEIS scoping process. The third paragraphs of sections 4.7 and 5.7 are the Staff’s one-sentence conclusion that the EJ impacts are small, and are identical (except that section 4.7 uses the word “construction” impacts and section 5.7 uses the word “operational” impacts).

FEIS § 7.6 addresses the Staff’s thoughts on the cumulative impacts in the areas of “socioeconomic, historic and cultural and environmental justice” and merely states a short conclusion — EJ cumulative impacts would be small.<sup>106</sup>

During oral argument, counsel for both the Staff and Dominion argued that FEIS §§ 4.7, 5.7, and 7.6 satisfied the Commission’s requirement that EJ be

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<sup>105</sup> Sections 8.5.5.5, 8.6.5.5, and 8.7.5.5 of the FEIS each address the EJ impacts of the three alternatives considered by the Staff, respectively, the Dominion Surry Site, FEIS at 8-39, the DOE Portsmouth Site, FEIS at 8-59, and the DOE Savannah River Site, FEIS at 8-79. These are not relevant to the “in greater detail” analysis required for the proposed site.

<sup>106</sup> The following is the complete EJ statement found in FEIS § 7.6: “The staff found no unusual resource dependencies or practices through which minority or low-income populations would be disproportionately affected. As a result, cumulative impacts of environmental justice would be SMALL.” FEIS at 7-7.

analyzed “in greater detail.” EH Tr. at 756, 763. Accordingly, the Board examined these portions of the FEIS. At the outset we note that section 7.6 provides no analysis at all (only a conclusion) and therefore cannot serve to satisfy the EJ “analyze” in “greater detail” requirement. Turning to sections 4.7 and 5.7, no analysis is contained in their first paragraphs (which only introduce the concept and background of EJ) and no analysis is contained in their third paragraphs (which merely state the Staff’s conclusion).

Thus, we turn to the middle paragraphs of sections 4.7 and 5.7. Do these virtually identical paragraphs analyze EJ in greater detail? Here is the longer of the two EJ paragraphs (with each of the sentences numbered for easier reference):

[1] The staff identified the pathways through which the environmental impacts associated with the construction of Units 3 and 4 at the NAPS site could affect human populations. [2] The staff then evaluated whether minority and low-income populations could be disproportionately affected by these impacts. [3] In its December 2003 site audit, the staff interviewed local government officials and the staff of social welfare agencies concerning potentially disproportionate impacts to low income and minority populations — (Jaksch and Scott 2005). [4] The staff found no unusual resource dependencies or practices, such as subsistence agriculture, hunting or fishing, through which the populations could be disproportionately impacted by construction of Units 3 and 4 at the North Anna ESP site and that would result in those populations being adversely affected. [5] In addition, the staff did not identify any health-related or location dependent disproportionately high and adverse impacts affecting these minority and low-income populations. [6] In addition, no disproportionately high and adverse impacts on minority and low-income groups were identified during the scoping process, from comments on the DEIS or SDEIS, or from other public outreach activities.

FEIS at 4-36.

The key activity and document, cited in the third sentence of the foregoing paragraph of sections 4.7 and 5.7 is “Jaksch and Scott 2005.” This is a report concerning a trip from December 8-12, 2003, the “December 2003 site audit” described by NRC staffers to investigate socioeconomic matters which also includes notes from additional telephone interviews conducted in 2004 and 2005.<sup>107</sup> However, the 32-page document focuses on socioeconomic matters unrelated to EJ and includes very few references to EJ or to low-income or minority populations. More startlingly, the Jaksch and Scott 2005 report reveals that no one from the NRC made any attempt to contact and discuss EJ issues with

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<sup>107</sup> FEIS at 4-36 and 5-52 (citing J. Jaksch and M. Scott, North Anna ESP Site Audit Trip Report — Socioeconomic 12-8-2003 through 12-12-2003 with Additional Telephone Interviews 2-26-2004, 2-26-2004 through 9-29-2004 and 7-11-2005 through 7-15-2005 (2005), ADAMS Accession No. ML052170374).

any officials or representatives from the two jurisdictions with the largest areas of low-income and minority populations (Caroline County, Virginia, and Richmond, Virginia), within the 50-mile impact area. *See* FEIS Figures 2-6, 2-7; FEIS at 2-78 and 2-79. NRC only contacted officials and representatives of the three counties closest to the facility (Louisa, Spotsylvania, and Orange Counties). Based on the FEIS, these three counties apparently have no low-income populations triggering the EJ analysis, *see* FEIS Figure 2-7 at 2-79, and only two small minority population tracts, both of which are upstream and upwind of the proposed Units 3 and 4. *See* FEIS Figure 2-6 at 2-78. The Jaksch and Scott 2005 report thus does not provide meaningful support for the Staff's subsequent statements that it "found no unusual resource dependencies or practices" [sentence #4 quoted *supra* p. 620 and "did not identify any health-related or location-dependent disproportionately high and adverse impacts affecting these minority and low-income populations" [sentence #5 quoted *supra* p. 620].

The paucity of EJ analysis, investigation, and information in the FEIS raises doubts as to whether the Staff has complied with the NRC EJ Policy that requires it to provide an EJ analysis in greater detail when the low-income or minority population thresholds are met. The analysis that the Staff carried out may have been excellent, but the Board cannot assess it when information supporting the conclusion is neither included in the FEIS nor provided by reference. According to the Staff's own guidance, the EJ review ought to include "sufficient information to allow the public to understand the rationale for the conclusion," NRR EJ Guidance at D-11, a requirement that does not appear to be satisfied here. Therefore, although the Staff's conclusions are plausible given the nature of the application being considered, the Board has doubts as to whether the Staff's EJ analysis satisfies the NRC EJ Policy requirement for an analysis "in greater detail."

Under these circumstances, and given that the Commission will necessarily review any initial decision such as this one, the Board suggests that the Commission consider addressing the somewhat novel question as to what it expects the Staff to do when, under the NRC EJ Policy, an EJ analysis "in greater detail" is required. Does the one paragraph quoted above meet this requirement?<sup>108</sup> And more specifically, perhaps the Commission can address whether an EJ analysis, where the Staff does not discuss EJ issues with representatives or officials from the jurisdictions with the main and largest minority and low-income populations

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<sup>108</sup> We note that quality, not quantity, is the measure of compliance. Thus, shortness alone is not sufficient to render the quoted paragraph inadequate. Our concern focuses on the substance of the Staff's EJ investigation, discussion, and analysis.

in the area of interest, satisfies the “in greater detail” requirement of the NRC EJ Policy.<sup>109</sup>

### **B. Application of Regulatory Standards When New Reactors Are Added to Preexisting Reactors**

The defining characteristic of the proposed ESP Site is that it is located wholly within the NAPS Site where two nuclear reactors already exist. Dominion is proposing to add up to sixteen new reactors (eight per “Unit”) to the site. *Supra* p. 550. While there are advantages to locating new nuclear reactors adjacent to existing ones (use of preexisting transmission lines, efficiencies of scale regarding nuclear operations), it would also have the disadvantage of incrementally increasing the impact on the local environment and the amount of radiological effluent to which the local population is exposed. For example, the ESP would authorize the amount of tritium in Lake Anna to triple (from 3050 to 9400 pCi/L, *supra* p. 582) and would authorize a twenty-fold increase in the estimated annual dose to the reasonably maximally exposed individual (from 0.32 mrem/yr to 6.4 mrem/yr, *supra* pp. 585-86). Although these levels are clearly within the relevant numeric regulatory standards, it is important to understand what these limits are, and how they apply, and how they are allocated as between the existing and new reactors and licenses. It would also be helpful for NRC to articulate how the ALARA concept applies when a company proposes to place multiple additional nuclear reactors on a site where such facilities are already located.

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<sup>109</sup> The problem of the nature and extent of the “in greater detail” analysis required under the NRC EJ Policy is not unique to Dominion’s ESP application for North Anna. *First*, a preliminary review indicates that the 20% to 50% EJ trigger is met in most if not all cases. For example, the requirement for an analysis “in greater detail” has been *triggered in all thirty-one of the reactor license renewals* considered by the NRC for which a final or draft EIS had been prepared as of June 8, 2007. *See, e.g.*, Generic Environmental Impact Statement for License Renewal of Nuclear Plants [GEIS for LR], Edwin I. Hatch Nuclear Plant, Units 1 and 2 (NUREG-1437, Supplement 4) Final Report (May 2001) § 4.4.6; GEIS for LR, Peach Bottom Atomic Power Station, Units 2 and 3 (NUREG-1437, Supplement 10) Final Report (Jan. 2003) at 4-38; GEIS for LR, Dresden Nuclear Power Station, Units 2 and 3 (NUREG-1437, Supplement 17) Final Report (June 2004) at 4-37; GEIS for LR, Brunswick Steam Electric Plant, Units 1 and 2 (NUREG-1437, Supplement 25) Final Report (Apr. 2006) at 4-31; GEIS for LR, Vermont Yankee Nuclear Power Station (NUREG-1437, Supplement 30) Draft Report for Comment (Dec. 2006) at 4-38. Does the Commission intend to require an “in greater detail” EJ analysis in every case? Does this devalue the “in greater detail” analysis? *Second*, it appears that the relatively perfunctory review found in Dominion FEIS, is not unusual. For example, the EJ analysis in the recent Clinton ESP FEIS is almost verbatim (except for changes in names and dates and the lack of citation to a trip report document) to the language in the North Anna FEIS. *Compare* FEIS at 4-36 *with* Clinton EIS at 4-38; FEIS at 5-52 *with* Clinton EIS at 5-43.

One difficulty arises from the fact that NRC's regulatory limits are expressed in terms of different entities. Some of NRC's radiation doses and standards for members of the public apply on a *per-reactor* basis. See 10 C.F.R. Part 50, App. I, § II.A ("each . . . reactor . . . will not result in an estimated annual dose . . . from liquid effluents for any individual in an unrestricted area . . . in excess of 3 [mrem/yr] to the total body"). Other of NRC's radiation standards for members of the public apply on a *per-license* basis. See 10 C.F.R. § 20.1301(a)(1) ("each licensee shall conduct operations so that . . . [t]he total effective dose equivalent to members of the public from the licensed operation does not exceed [100 mrem/yr]").<sup>110</sup> Still other radiation standards that NRC uses for members of the public appear to apply on a *per-site* basis. See 10 C.F.R. § 20.1301(e) (specifying that licensees shall comply with 40 C.F.R. Part 190 standards, which in turn specify that "[o]perations covered by this subpart shall . . . provide reasonable assurance that . . . the annual dose equivalent does not exceed 25 mrem to the whole body . . . as a result of exposures . . . from uranium fuel cycle operations").<sup>111</sup>

This regulatory structure might make more sense if each regulated entity or unit, and the corresponding amount of radiation it is allowed to release, were increasingly large (e.g., 3 mrem per-reactor, 100 mrem per-licensee, something greater than 100 mrem per-site). But this is not the case, because the per-site level (25 mrem) is less than the per-licensee level (100 mrem). This appears to render

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<sup>110</sup> Would 10 C.F.R. § 20.1301(a)(1) allow Dominion to emit up to 300 mrem/yr (because it would have three licenses — one for Unit 1, one for Unit 2, and one for Units 3 and 4) or would it be limited to 200 mrem/yr (because it has two licensees — Virginia Electric Power Company and Dominion)? Dominion asserts that 200 mrem/yr is appropriate. See Dominion's Response to the Licensing Board's January 18, 2007 Order (Issuing Safety-Related Questions) (Feb. 8, 2007) (Dominion Exhibit 1) at 12 n.5 ("Dominion interprets these provisions as meaning that the 100 mrem limit applies to the combined dose from all units operated by a particular licensee at a site. Under this reading, a single 100 mrem limit would apply [*sic*] radioactivity released [*sic*] Virginia Power's operation of Units 1 and 2, and a separate limit would apply to radioactivity releases from Dominion's operation of any additional units."). *In contrast, the NRC Staff says that this regulation is not applicable to nuclear reactors at all:* "Section 20.1301(a) applies to NRC licensees other than those who operate power reactors." NRC Staff Legal Environmental Brief at 23 n.15.

<sup>111</sup> The NRC Staff and Dominion both assert the EPA radiation standard of 25 mrem, 40 C.F.R. § 190.10, applies on a *per-site* basis. NRC Staff Legal Safety Brief at 9; Dominion's Memorandum Responding to the Legal Questions in the Licensing Board's January 18, 2007 Order (Feb. 8, 2007) at 9. The parties were unable to cite any statute, regulation, case-law, or even agency statement of consideration stating this proposition. See NRC Staff Legal Safety Brief at 9; Dominion's Memorandum Responding to the Legal Questions in the Licensing Board's January 18, 2007 Order (Feb. 8, 2007) at 9.

Meanwhile, the regulation itself is not expressed in terms of a particular site, but instead applies the 25-mrem/yr dose limit to radiation "from uranium fuel cycle operations." 40 C.F.R. § 190.10. The term, "uranium fuel cycle operations" includes many activities (milling, conversion, enrichment, fabrication, use, and reprocessing of fuel) that occur at different sites. See 40 C.F.R. § 190.02(b).

10 C.F.R. § 20.1301(a) (the per-licensee level of 100 mrem moot in most cases. Indeed, this is essentially what Dominion and the NRC Staff have asserted here.<sup>112</sup> In addition, none of NRC's regulations apply on a *per* "unit" basis, or tell us expressly what amount of radiation can be released from a "unit," such as "Unit 3," for example.

Another difficulty is the regulatory gaps that arise from the multiplicity of reactor designs included within Dominion's PPE. For example, the plain language of some of the most important regulations that NRC has specified in this ESP makes clear that it only applies to "light-water-cooled" power plant reactors. For example, 10 C.F.R. Part 50, Appendix I only covers "Numerical Guides for Design Objectives and Limiting Conditions . . . for Radioactive Material in *Light-Water-Cooled* Nuclear Power Reactors." Similarly, the EPA standard of 25 mrem, only applies to the "uranium fuel cycle," which only includes the "generation of electricity by a *light-water-cooled* nuclear power plant." See 40 C.F.R. § 190.02(b) (defining the "uranium fuel cycle"). This is problematic, because, if granted, the ESP would cover a spectrum of seven different reactor designs, including two reactor designs (the PBMR and the GT-HMR) that are *not* light-water-cooled. NRC has yet to promulgate standards for the PBMR and GT-HMR. How do we assess whether these proposed reactor designs will meet the site safety standards, when the main safety standards used by NRC do not apply to PBMRs and GT-HMRs?

The absence of standards for the gas-cooled reactors is complicated further. First, neither 10 C.F.R. Part 50, Appendix I nor 40 C.F.R. § 190.10 applies to gas-cooled reactors. Second, the NRC Staff asserts that the main remaining radiation standard — the 100-mrem limit of 10 C.F.R. § 20.1301(a)(1) — doesn't apply to *any* kind of nuclear reactor. NRC Staff Legal Environmental Brief at 23 n.15. How do we determine whether Dominion's two gas-cooled reactor designs will meet the NRC safety standards for the ESP Site?

Next, assuming *arguendo* that the 25-mrem standard of 40 C.F.R. § 190.10 and 10 C.F.R. § 20.1301(e) applies on a per-site basis, the third issue that concerns us is how this limit is to be allocated. Consider the following: Virginia Electric Power Company (VEPCO) and ODEC, the joint licensees for Units 1 and 2, are currently subject to the 25-mrem limit for the NAPS Site. Thus, under this regulation VEPCO/ODEC can emit radiation up to the 25-mrem dose. Now a different entity, Dominion,<sup>113</sup> proposes to locate additional reactors or units at the same site. We are told that, under 40 C.F.R. §§ 190.10, 20.1301(e), Dominion is limited to the same 25-mrem dose. Dominion and the NRC Staff agree that the

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<sup>112</sup> NRC Staff Legal Safety Brief at 9-10; NRC Staff Legal Brief in Response to Licensing Board's Environment-Related Questions (Mar. 1, 2007) at 23-24; Dominion's Memorandum Responding to the Legal Questions in the Licensing Board's January 18, 2007 Order (Feb. 8, 2007) at 12.

<sup>113</sup> Although Dominion and VEPCO are owned by the same company, ODEC is not.

entire NAPS Site is subject to the same 25-mrem limit, and the fact that there are two “sites” (NAPS and the ESP Site) or two different licensees does not double the maximum doses to 50 mrem.<sup>114</sup> So far, so good. But how is the 25-mrem limit to be allocated between VEPCO/ODEC and Dominion? Does each licensee get 12.5 mrem? The NRC Staff dismisses this issue, and indicates that it will handle any violations or exceedances on an *ad hoc* basis:

The Staff does not allocate doses considered among multiple reactors on the same site for any reason; rather, the dose is considered to be a cumulative dose for all operations at a given site. Consequently, the Staff would consider the cumulative contribution of the two existing reactors as well as the two proposed units in assessing compliance with the 40 C.F.R. Part 190 dose limits, but it would not assign specific proportional limits to individual units.

NRC Staff Legal Safety Brief at 9. This approach leaves the licensee, NRC, and the public in limbo. What legal standard will the NRC Staff use in allocating legal liability if the 25-mrem standard is exceeded. For example, who is liable when VEPCO/ODEC releases a 12-mrem dose and Dominion releases 14 mrem? Each, alone, would seem to be compliant with 40 C.F.R. § 190.10, and would likely so argue if charged with a violation. What if the ratio is VEPCO/ODEC with 3 mrem and Dominion with 24 mrem? Is VEPCO/ODEC legally liable for such an exceedance? What rational principle, other than a 50-50 split, should be used to allocate the 25 mrem? As a matter of regulatory clarity for the licensees and the public, it might be prudent for NRC to articulate this rational principle and/or allocate the 25-mrem limit of 10 C.F.R. § 190.10 in a permit condition at the outset.

Given that the Commission will review this Initial Decision, *supra* p. 549, the Board believes that this aspect of the ESP (multiple reactors/multiple licensees/multiple numeric limits) involves some “novel issues” that merit Commission consideration. *See* 10 C.F.R. § 2.323(f). For the first time in many years, the NRC is entertaining applications for new reactors to be added to sites where reactors already exist. Under these circumstances, this Board believes that it would be helpful for the Commission to clarify its views on the following issues:

- (1) How do the per-reactor, per-licensee, and per-site radiological limits apply when there are multiple reactors and multiple licensees being added to a site? Are they additive, increasing the amount of dose and exposure to the public? If not, how should they be applied?
- (2) How is ALARA satisfied under these circumstances?

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<sup>114</sup>NRC Staff Legal Safety Brief at 9; Dominion’s Memorandum Responding to the Legal Questions in the Licensing Board’s January 18, 2007 Order (Feb. 8, 2007) at 11-12.



(3) How can the gas-cooled reactor designs in the ESP application be deemed to meet the NRC safety regulations when there are no specific standards for them and most of the standards apply only to light-water-cooled reactors?

(4) How should the 25-mrem dose limit imposed by 10 C.F.R. § 20.1301(e) and 40 C.F.R. § 190.10 be allocated as between preexisting reactor effluents and new reactor licensees on the same site?

### **C. Prohibition of Partial ESPs and ESPs Where Adequate Information Is Lacking**

As we discussed in section II.C, *supra* pp. 560-61, the regulations establish the general rule that once an ESP is issued “the Commission may not impose new requirements . . . on . . . the site.” 10 C.F.R. § 52.39(a)(1). In addition, the Commission has stated that it will not issue “partial ESPs,” or issue them where the “operational parameters” are lacking.<sup>115</sup> 54 Fed. Reg. at 15,377-78. In cases where the information is limited, the applicant can pursue an “Early Partial Decision on Site Suitability.” *See* 10 C.F.R. Part 2, Subpart F; 10 C.F.R. Part 50, App. Q. Faced with this regulatory background, this Board identified a number of questions concerning various gaps and unresolved issues in the ESP application.<sup>116</sup>

As an initial matter, the Board recognizes that an ESP applicant is not required to provide “detailed design” information concerning each of the types of reactor designs covered by the application. This is because, at the ESP stage, the applicant often will not have selected the specific reactor design (e.g., ABWR, PWR, gas-cooled, AP1000, etc.) that it may want to build on the site. For example, in this case Dominion wants to keep its ESP options open for seven different reactor designs. In lieu of detailed design information, however, the applicant needs to provide a “plant parameter envelope” which is the set of values of plant design parameters that an ESP applicant expects will bound the design characteristics of the reactor or reactors that might be built at a selected site.” Staff Answer to Environmental Question 3. The PPE, which serves as the surrogate for the actual reactor design information, is defined in the FEIS as follows:

#### **1.1.1 Plant Parameter Envelope**

The applicant for an ESP need not provide a detailed design of a reactor or reactors and the associated facilities, but should provide sufficient bounding parameters

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<sup>115</sup> “It is just such information which both the proposed rule and the final rule would require of applicants for early site permits.” 54 Fed. Reg. at 15,378.

<sup>116</sup> *See* Board Safety Questions 111 and 116; Board Environmental Questions 1A, 1B, 1C, 1D, 3, 5A, 5B, 26, 36, 51, 107, 108, 125.

and characteristics of the reactor or reactors and the associated facilities so that an assessment of site suitability can be made. Consequently, the ESP application may refer to a plant parameter envelope (PPE) as a surrogate for a nuclear power plant and its associated facilities.

A PPE is a set of values of plant design parameters that an ESP applicant expects will bound the design characteristics of the reactor or reactors that might be constructed at a given site. The PPE values are a bounding surrogate for actual reactor design information.

FEIS at 1-3. The PPE serves in lieu of a specific reactor design.

But what if the ESP application doesn't include significant PPE values? How does this comport with the "no partial ESP" policy? How does it meet the requirement that an ESP applicant provide "adequate information?"

There are numerous examples where the Dominion ESP application fails to include significant PPE information. At the outset, the FEIS states:

In its application and in responses to requests for additional information (RAIs), Dominion did not or was unable to provide information and analysis for certain issues sufficient to allow the NRC staff to complete its analysis. For such issues, Dominion did not offer, nor did the staff identify, bases for assumptions that would allow resolution. The staff was unable to determine a unique significance level for such issues, and therefore these issues are not resolved for the North Anna ESP site.

FEIS at 1-5. Specific examples include the following:

1. The Staff stated "[b]ecause no specific design has been selected, the water treatment systems for the proposed Units 3 and 4 are not specified." FEIS at 3-7. We recognize that the specific design had not been selected, and that this explains the need for a PPE. But should Dominion have at least been required to provide a bounding PPE value?

2. The Staff stated that "[a]dequate design information to estimate liquid and gaseous radioactive effluents was available for four of the seven reactor designs considered in establishing the PPE values. The four reactors were LWRs . . . Limited information was available for liquid and gaseous effluent releases from the gas-cooled reactor designs." FEIS at 3-13. This tells us "adequate design information" for the other three designs was lacking.

3. The Staff stated that "[a]lthough Dominion chose the PPE approach in the overall ESP application, it based its evaluation of the environmental impacts of severe accidents on characteristics of the ABWR, the surrogate AP1000, and the surrogate ESBWR reactor designs with the explicit representation that these impacts would bound the impacts of other ALWR designs." FEIS at 5-89. This means there was no PPE information for the non-ALWR designs, such as the

gas-cooled designs. “The environmental impacts of severe accidents for designs not evaluated in this EIS, including gas-cooled designs, are not resolved because necessary design information is lacking.” *Id.*

4. The Staff stated that “[i]n its evaluation of uranium fuel cycle impacts for the North Anna ESP site, [Dominion] used the plant parameter envelope approach for the LWR designs, but not for the two gas-cooled reactors.” FEIS at 6-1.

5. Transportation-related “risk[s] to the public from radiation exposure . . . are not resolved for *other than LWR designs* and would need to be assessed at the CP or COL stage.” FEIS at 6-26 (emphasis added).

The Staff listed over thirty-five instances where the FEIS specified that matters such as the foregoing were unresolved. Staff Answer to Environmental Question 5. The PPE gaps were most prevalent for the two gas-cooled reactor designs.

We asked the Staff to explain why it did not require the applicant to “at least require the PPE information on these matters.” Board Environmental Question 1A. The Staff explanations depended on the subject. In some instances, such as water quality and waste streams, the Staff did file an RAI but Dominion didn’t provide the information because “design level information is not available.” Staff Answer to Environmental Question 1A. In other cases, the Staff answered that “a design was not selected.” *Id.* This begs the question, because the whole point of a PPE is to serve in lieu of a specifically selected design. With regard to gas-cooled reactors, the Staff stated that there is “insufficient information concerning these designs” and there is a “lack of verifiable information on these designs.” *Id.* In some instances, the Staff answered that “detailed” design information is not available. *Id.* But no one was asking for detailed design information because a PPE does not require it. We were only focusing on an envelope of parameters, especially in those situations where the Staff acknowledged that even the PPE was missing.

The ultimate answer to our questions seems to be — yes, there are a number of instances where significant components of the PPE are missing, but this is okay because in those instances we will treat the matter as “unresolved” and it will be addressed at the CP or COL licensing stage. While we see no regulatory prohibition to this approach, we are not sure that it comports with the Commission’s stated policy prohibiting the issuance of partial ESPs and indicating that ESPs will not be issued unless adequate information is available. How many holes or “unresolved issues” can there be in a PPE before it runs afoul of the Commission’s policy? When should the Staff decline to issue an ESP and advise the applicant to instead consider an Early Partial Decision on Site Suitability?

Given the novelty and importance of this issue, it may be appropriate for the Commission to address it when the Commission conducts its automatic review of this ESP pursuant to 10 C.F.R. § 2.340(f).

## VII. CONCLUSION

The Board has, in fulfilling the mandatory hearing obligations imposed by AEA § 189a and the case law and regulations discussed above, reviewed material portions of the record in this proceeding and has required the NRC Staff and Dominion to provide additional testimony and documentary evidence with respect to certain areas for which review indicated that the information was insufficient to allow the Board to decide the six fundamental questions (*see* Appendix A) specified for uncontested ESP proceedings. In our ruling, we have not conducted a *de novo* review and, except where noted, have relied upon and assumed, without independent investigation, the accuracy, veracity, and thoroughness of the content of the Staff documents, such as the FEIS and FSER, the Staff and Dominion answers to the Board's written safety and environmental questions, and the testimony of the witnesses during the oral evidentiary hearing. As described above, the Board determines that the NRC Staff's review of the early site permit application of Dominion Nuclear North Anna, LLC (Dominion) has been adequate, and the record of this proceeding sufficient, to support the Atomic Energy Act safety-related findings necessary for issuance of the ESP. Further, we have independently determined that the relevant requirements of the National Environmental Policy Act and NRC's NEPA regulations have been satisfied and decide that the ESP should be issued, subject to the proposed permit conditions included in Staff Exhibit 17, and subject to the permit conditions, COL action items, site characteristics, and plant parameter envelope values, representations, assumptions, and unresolved issues specified in Appendices I and J to the Staff's Final Environmental Impact Statement and Appendix A of the Final Safety Evaluation Report.

Pursuant to 10 C.F.R. § 2.1212, parties may file a petition for review of this Initial Decision in accordance with the procedures set out in 10 C.F.R. § 2.341. Any such petition for Commission review must be filed within 15 days after the Initial Decision has been served. *See* 10 C.F.R. § 2.341(b)(1). Unless otherwise authorized by law, a party to an NRC proceeding must file a petition for Commission review before seeking judicial review of an agency action.

Pursuant to 10 C.F.R. § 2.340(f), this Initial Decision is not effective until the Commission reviews it and takes final agency action.

It is so ORDERED.

THE ATOMIC SAFETY AND  
LICENSING BOARD<sup>117</sup>

Thomas S. Elleman  
ADMINISTRATIVE JUDGE

Richard F. Cole  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
June 29, 2007

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<sup>117</sup>Copies of this order were sent this date by Internet e-mail transmission to counsel for (1) Applicant Dominion; (2) the Intervenors; and (3) the NRC Staff.

## SEPARATE OPINION BY JUDGE KARLIN CONCURRING IN PART AND DISSENTING IN PART

Although I concur with my colleagues' rulings on the remainder of the Initial Decision, I must respectfully dissent from their determination that the NRC Staff adequately considered all reasonable alternatives to Dominion's proposed ESP as required by sections 102(2)(C)(iii) and 102(2)(E) of NEPA. Specifically, I conclude that, starting with Dominion's large region of interest (ROI), the NRC Staff failed to consider and search for (or demand that Dominion search for) the "best alternative sites that could reasonably be found" within the ROI, and instead short-circuited the alternatives analysis by fixating on a very small "slate of sites" proffered by Dominion. Once NRC's vision was narrowed to this short slate of three sites, the result was predetermined because none of them were "obviously superior" to the site preferred by Dominion — the North Anna ESP site. Thus, NRC's *alternative sites* analysis was, in my judgment, inconsistent with both the letter and spirit of NEPA.

In addition, given the significant incremental surface water impacts that will be caused by proposed Unit 3 (evaporation of 8707 gpm), it is my opinion that the NEPA *system design alternatives* should have included the alternative of imposing some form of water-saving measures on the two nuclear reactors that already exist on the site, as a form of offset to the impacts of the proposed new reactors. I reject the Staff's position that such an offset alternative, such as, for example, diverting some of the 1.9-million-gpm once-through cooling water from Units 1 and 2 into the cooling towers that would be constructed for Units 3 and 4, is *per se* unreasonable under NEPA. Instead, consideration of such offsets to the incremental impacts of the new reactors is reasonable and necessary under NEPA where, as here, the applicant and its affiliates seek to add new nuclear reactors at the same location of existing nuclear operations.

There is no dispute that the NEPA alternatives analysis "is the heart of the environmental impact statement." 10 C.F.R. Part 51, Subpart A, App. A, § 5; 40 C.F.R. § 1502.14; *City of Shoreacres v. Waterworth*, 420 F.3d 440, 450 (5th Cir. 2005). Likewise, the law is clear that *all reasonable alternatives* must be considered, 10 C.F.R. Part 51, Subpart A, App. A, § 5, and that the "rule of reason" applies. *Westlands Water District v. U.S. Department of Interior*, 376 F.3d 853, 868 (9th Cir. 2004). While I do not know whether a NEPA alternatives analysis that seriously searched for the "best" candidate and alternative sites within the ROI, or looked at onsite trade-offs between existing nuclear reactors and new ones, would have produced a different result, it is clear to me that the failure of the Staff to consider such alternatives fails to comply with the requirements of NEPA. Accordingly, I conclude that the ESP cannot be granted unless a supplemental EIS is performed. My reasons are explained, briefly, as follows.

First, as a factual matter it is instructive to review the NRC Staff's guidance for conducting a NEPA alternative sites analysis. This is found in section 9.3 of the NRC's Environmental Site Review Plan (ESRP) for nuclear reactors, NUREG-1555. The guidance creates the following alternatives analysis process: (1) start with the ROI, (2) identify candidate sites within the ROI, (3) select alternative sites from among the candidate sites, and (4) then analyze whether any of the alternative sites are obviously superior to the proposed site. NUREG-1555 at 9.3-1. With regard to the second step, the guidance states that *candidate sites* should be “*the best that can reasonably be found for the siting of a nuclear power plant*” within the applicant's region of interest (ROI). *Id.* (emphasis added). The NRC Staff is told to determine that there is *reasonable assurance that no potential alternative sites in this category have been omitted*. *Id.* at 9.3-10 (emphasis added). In evaluating candidate sites, the Staff must make the determination that “*no site within the appropriate study area (by this or any other acceptable and accurate procedure based on reconnaissance level data) [is] obviously superior to the applicant's proposed site*. *Id.* at 9.3-6 (emphasis added). Finally, the Staff guidance states:

*[A]ll nuclear power plant sites within the identified region of interest having an operating nuclear power plant or a construction permit issued by the NRC should be compared with the applicant's proposed site.*

*Id.* at 9.3-7 (emphasis added).

The relevant facts, as set forth in the majority opinion, make clear that the Staff, much less Dominion, failed to comply with the Staff's own guidance. First, I focus on Dominion. Dominion chose to designate a very large ROI, encompassing most of the eastern United States and a substantial portion of numerous states west of the Mississippi River. ER Figure 9.3-1; *see* Appendix B. However, within this ROI, Dominion identified only three candidate sites, two federal sites (the DOE Portsmouth, Ohio site and the DOE Savannah River, South Carolina site) and one other nuclear power plant site owned by DRI (the Surry site). ER at 3-9-6. Dominion briefly considered and rejected “a generic greenfield site” as not reasonable. *Id.* at 3-9-4. With regard to existing nuclear power plant sites, Dominion only considered two sites owned by its DRI and its subsidiaries (rejecting one of them). *Id.* at 3-9-5 to -6. Thus, Dominion quickly narrowed the field to a slate of three alternative sites. Dominion then evaluated this slate of sites and concluded that none of them were “obviously superior” to Dominion's preferred site (North Anna). ER at 3-9-6 to -11.

Turning to the activities of the NRC Staff, contrary to NUREG-1555, the *FEIS* never analyzed or even discussed whether Dominion's small slate of alternative sites represented the “best that can reasonably be found for the siting of a nuclear power plant” within the ROI. NUREG-1555 at 9.3-1. *See* Testimony of Mr.

Kugler at EH Tr. at 563-64. The Staff never examined whether any potential candidate sites had been omitted. When asked whether Surry, Savannah River, and Portsmouth were, in fact, the best candidates or alternative sites that could reasonably be found within Dominion's ROI, Mr. Kugler of the Staff demurred, citing the "special cases" exemption found in NUREG-1555 at 9.3-6. EH Tr. at 570. Later he corrected himself and agreed that the special cases exemption did not excuse the Staff from searching for the best alternative sites. *Id.* at 575. This is because the special cases provision only exempts the *proposed* site, but still requires that the candidate and alternative sites be the "best that can reasonably be found" within the ROI.<sup>1</sup> Continuing, Mr. Kugler, said that the Staff simply "used the *slate of sites* that the applicant had identified" and "determined whether the *process* that [Dominion] used to identify those sites was reasonable." EH Tr. at 572.

It is also uncontroverted that the NRC Staff failed to comply with its own guidance requiring that the proposed site be compared against "*all nuclear power plant sites within the identified region of interest.*" NUREG-1555 at 9.3-7 (emphasis added). The NRC alternatives analysis never considered any of the dozens of other nuclear power plant sites within Dominion's ROI (but not owned by DRI). Could some of these sites be among the "best that can reasonably be found for the siting of a nuclear power plant" within the ROI? Did the Staff determine that there was "reasonable assurance" that no legitimate candidate site had been "omitted?" No. Did the Staff determine that "no site within the appropriate study area" evaluated by "any other acceptable and accurate procedure" is "obviously superior to the applicant's proposed site?" No. When asked, Mr. Kugler stated that "it was not considered reasonable to consider sites that are owned by another utility as alternative sites," EH Tr. at 567, citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 536 (1977)).

It seems clear that *Seabrook* does not support a *per se* rule that consideration of sites owned by other utilities is automatically unreasonable. It neither held, stated, nor implied any such rule. To the contrary, *Seabrook* involved a tiny ROI (New Hampshire and a portion of southern Maine) wherein the NRC Staff examined the proposed site and *eighteen alternative sites*. In this context, the Commission held that the Staff's analysis of alternative sites complied with NEPA. In contrast, in the North Anna case, the Staff only considered the proposed site and three alternative sites within a twenty-plus-state ROI. And while *Seabrook* did recognize that there were numerous factors to consider in conducting the alternative site analysis under NEPA, including "possible institutional and legal

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<sup>1</sup> NUREG-1555 at 9.3-1. "For such cases, the reviewer should analyze the applicant's site selection process only as it applies to candidate sites other than the proposed site." *Id.* at 9.3-7.



obstacles associated with construction at an alternate site,” *Seabrook*, CLI-77-8, 5 NRC at 540, it did not suggest that consideration of sites owned by other utilities is *per se* unreasonable. Comparing the North Anna alternative site analysis to *Seabrook* only demonstrates how inadequate the North Anna analysis was.

The Staff’s *per se* rejection of all alternative sites owned by other utilities violates the NEPA requirement to consider all reasonable alternatives for another reason — the use of joint ventures, which are common in the nuclear industry. For example, Units 1 and 2 on the NAPS Site are owned and operated by a joint venture between VEPCO and Old Dominion Electric Cooperative (ODEC). FEIS at 2-1. Likewise, Dominion, which has no right, title, or interest in the proposed ESP Site, would have to form a joint venture of sorts with VEPCO and ODEC in order to build Units 3 and 4. Joint ventures are common within the nuclear industry and numerous NRC cases, often dealing with antitrust considerations, address the option of “joint ventures by two or more utilities.”<sup>2</sup> Indeed, as recently as June 13, 2007, PPL Corporation, the owner and operator of two nuclear power plants, expressed its interest in forming a joint venture to build an additional nuclear reactor within Dominion’s ROI. *See* Tim Mekeel, *PPL Aims To Keep Option To Build Nuclear Reactor*, Lancaster New Era (June 13, 2007).

The Staff’s position, that it is *per se* unreasonable to consider sites owned by other companies when considering the “best sites that can reasonably be found” within an ROI, leads to absurd results. First, it would mean that two different utilities, with overlapping or identical ROIs would have mutually exclusive lists of the “best sites” for nuclear reactors within the same ROI. Second, restricting the NEPA alternative site analysis essentially only to those sites owned by the applicant would mean that, even if all of them were clearly unacceptable, they would necessarily be the “best” “reasonable” options within the ROI, and NEPA could be dispensed with. Although the applicant’s general objectives properly serve to focus the alternatives analysis, they cannot dominate it, and “best” cannot be defined exclusively as “what the applicant owns or wants.” Otherwise, the NEPA alternatives analysis is vitiated.

The Dominion and NRC consideration of candidate and alternative sites *not owned* by other utilities is equally crabbed. The only such sites even considered are two federally owned sites, the DOE Savannah River site and the DOE Portsmouth site. FEIS §§ 8.6, 8.7. There is no explanation why other federally owned sites were not considered. What about other sites owned by DOE? What about the numerous power plant sites, including nuclear sites, owned and operated

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<sup>2</sup> *See Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-646, 13 NRC 1027, 1054 n.70 (1981); *Georgia Power Co.* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-18, 10 NRC 617, 619-20 (1979); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 182 (1978); *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-452, 6 NRC 892, 902 (1977).

by the Tennessee Valley Authority, a federally owned entity, whose service area overlaps with Dominion's ROI? See 16 U.S.C. § 831 *et seq.*; TVA Reservoirs and Power Plants, [http://www.tva.gov/sites/sites\\_ie2.htm](http://www.tva.gov/sites/sites_ie2.htm) (last visited June 20, 2007). What about U.S. Department of Defense facilities within Dominion's ROI? In the search for the "best [sites] that can reasonably be found" within the ROI, the NRC Staff's NEPA alternative sites analysis doesn't even discuss these options.

Ultimately, the Staff defends its NEPA alternative sites analysis by citing NUREG-1555 to the effect that all the Staff needs to do is to "determine if the selection *process* used [by the applicant] to identify candidate sites was adequate." NUREG-1555 at 9.3-9. Given that the NEPA alternatives analysis is the heart of NEPA, and the duty to examine all reasonable alternatives is imposed on NRC, *not the applicant*, this provision of NUREG-1555 improperly delegates NEPA compliance to the applicant and allows the NRC Staff to conduct a mere "appellate review" to determine whether the applicant's effort was adequate. NEPA does not require federal agencies to decide whether the applicant's ER is adequate. NEPA requires federal agencies to examine all reasonable alternatives. See NEPA § 102(2)(C)(iii), 42 U.S.C. § 4332(2)(C)(iii) ("all *agencies of the Federal Government* shall . . . [issue] a detailed statement *by the responsible official* on . . . alternatives to the proposed action"). And while no one expects NRC to send a team out into the field to survey Dominion's entire ROI for candidate or alternative sites, NRC can and should probe and push to assure that a rigorous alternatives analysis is performed. The Staff could have filed requests for additional information that would have required Dominion to develop a more thorough alternative sites analysis and to survey the ROI to assure that the best sites have not been missed. Even without leaving the office, the Staff could have reviewed maps, and its own institutional knowledge and information, to consider and possibly identify other candidate sites within Dominion's ROI that might be in lower population areas and otherwise potentially suitable or preferable. Some agencies even hire independent consultants to help to identify candidate and alternative sites, rather than just relying on the submissions of the applicant.

Even assuming *arguendo* that all that the NRC Staff needs to do is to "determine if the selection *process* used [by the applicant] to identify candidate sites was adequate," NUREG-1555 at 9.3-9, it is clear to me that the NRC Staff failed to meet this standard or to seriously scrutinize the Dominion's process here. At hearing, for example, the Staff's witness offered no detail as to how the review was conducted:

Judge Karlin: I would propose to you that if I had a proposed site A, and if you give me the ability to select the three alternative sites against which A needs to be compared, I can rig that game very quickly so that you would have to pick A.

Mr. Kugler: Yes, you could.

Judge Karlin: How do you know that didn't happen?

Mr. Kugler: That was part of our review. . . . we took a look at the process they use, and we took a look at the candidates that they came up with.

EH Tr. at 582-83. The witness went on to describe the steps the Staff employed to evaluate the three sites Dominion proposed, but offered no further testimony regarding the Staff's scrutiny of Dominion's candidate site selection process. EH Tr. at 583-84.

As far as can be determined from the testimony, the FEIS, and the parties' supplemental filings, the NRC Staff accepted, without raising a single question, Dominion's perfunctory process for identifying the best candidate and alternative sites that could reasonably be found within the ROI. No discussion at all of why Dominion did not comply with the NUREG requirement that all nuclear sites within the ROI be considered. No question as to why only DOE sites were considered. Not even a serious look at other nonnuclear power plant sites owned by Dominion and its affiliates. It is clear to me that, in reviewing the applicant's *process* for identifying the best alternative sites that could reasonably be found within the ROI, the NRC Staff failed to "rigorously explore," 40 C.F.R. § 1502.14(a), or to exercise *any* "skepticism in dealing with [the] self serving statements from the primary beneficiary of the project." *Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 683 (7th Cir. 2006).

The majority asserts that the applicant's goal serves to focus the NEPA alternatives effort. This legal proposition is correct, but I am unable to see how it makes any difference here. This is because Dominion has articulated a rather broad goal, i.e., to "generate power for sale to consumers in a competitive marketplace. Dominion would only proceed with the development of such a new facility if it is economically viable." ER at 3-9-2. This goal is general, typical, and unremarkable. The only thing worth noting is that the "marketplace" that Dominion has selected is a quite large ROI.

Given Dominion's broad goal and large ROI, decisions like *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991), *cert. denied*, 502 U.S. 994 (1991) are completely inapposite. In *Busey* the goal of the applicant, the Toledo Port Authority, was very narrow ("to launch a new cargo hub in Toledo and thereby helping to fuel the Toledo economy"), *id.*, and the Court held that the NEPA alternative sites analysis did not need to include non-Toledo sites. In contrast here, not even Dominion is asserting that its goal is so narrow, e.g., to help fuel the Louisa, Virginia economy, or that the alternatives analysis should be limited to Louisa County or even to the Commonwealth of Virginia. Dominion simply wants to generate power and sell it, at some profit, to customers within the ROI.

Further, the unassailable fact that Dominion, like all companies, wants to make a profit for its investors and will not proceed unless it deems a course of action economically viable, does not mean that the NEPA alternative sites

analysis is limited to sites owned by Dominion or sites where Dominion can make the best profit and does not guarantee Dominion a permit. As the Council on Environmental Quality has stated: “reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant” and that “[i]n determining the scope of alternatives to be considered, the emphasis is on what is ‘reasonable’ rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative.” Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,027 (Mar. 23, 1981). The environmental impacts of the siting of nuclear power plants within the United States are too important for NRC to limit the universe to those alternative sites, if any, currently owned by the applicant.

Even when the project sponsor or applicant is a *federal agency*, NEPA is clear that the project goals cannot be artificially narrowed to circumvent the NEPA alternatives analysis. See *City of New York v. U.S. Department of Transportation*, 715 F.2d 732, 743 (2d Cir. 1983) (“an agency will not be permitted to narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered”). See also *City of Carmel-By-The-Sea v. U.S. Department of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997) (“[t]he stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives and an agency cannot define its objectives in unreasonably narrow terms”); *Busey*, 938 F.2d at 196 (“an agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency’s power would accomplish the goals of the agency’s action, and the EIS would become a foreordained formality”).

When the project sponsor and applicant is a *private party*, an equal, if not greater, degree of caution should be exercised.

We have held that *blindly adopting the applicant’s goals is ‘a losing proposition’* because it does not allow for the full consideration of alternatives required by NEPA. [*Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997).] NEPA requires an agency to “exercise a degree of skepticism in dealing with the self-serving statements from the prime beneficiary of the project” and to look at the general goal of the project, rather than only those alternatives by which a particular applicant can reach its own specific goals. *Id.*

*Envtl. Law and Policy Ctr. v. NRC*, 470 F.3d at 683 (emphasis added).

Dominion seeks to limit the NRC NEPA alternatives analysis by asserting that “the possibility of Dominion building new nuclear units at an unaffiliated utility’s sites is neither reasonable, feasible, nor consistent with Dominion’s business purpose.” Dominion’s Answer to Environmental Question 121. There

is no reason, compelling or otherwise, to accept this proposition. (Dominion's proposition is a bit tautological, as it would obviously end up "affiliating" with the utility with which it teamed or formed a joint venture.) There is nothing *per se* infeasible or technically unacceptable about Dominion working with another utility or company within this ROI to achieve Dominion's purpose — to build 9000 MWt of nuclear power to serve customers within the ROI and make money in the process. Indeed, to accept Dominion's position is to render the NEPA alternatives analysis a "foreordained formality." *See Busey*, 938 F.2d at 196.

In addition to limiting alternatives to sites owned by the applicant, Dominion and the NRC gave similar short shrift to Dominion-owned sites. Other sites owned by Dominion are rejected because they "typically" lack sufficient land, or "typically" lack excess transmission capacity, or are "often" sited in more urban locations. Declaration of Marvin L. Smith at 3. This does not tell us whether any specific sites might be better or at least considered. It assumes a fact not in evidence, i.e., that the North Anna site has "excess transmission capacity." *See* note 82, *supra*. It fails to consider that Dominion might purchase additional land, adjacent to its existing brownfields sites, as a development option. These are concrete, practical, and feasible options that were not considered.

Once the Staff fixed solely on Dominion's short slate of three alternative sites, skipping any serious questioning or review as to whether it was the right slate or whether the process used by Dominion to generate it was adequate, the outcome of the alternative site analysis was foreordained. No matter how thoroughly the NRC Staff might compare the three sites against the proposed North Anna site, the result would be the same — the three alternatives are not "obviously superior" to North Anna, and therefore Dominion's preferred site became the site endorsed by the Staff in the FEIS. Neither the FEIS nor the Staff's post-hearing submission establishes that the NRC Staff rigorously, skeptically, and adequately reviewed even the process that Dominion used to preselect the short slate of three alternatives.

My dissent is also based on the fact that section 8.2 of the FEIS, entitled "System Design Alternatives," and the NRC Staff, excluded, *per se*, even considering the alternative of asking or requiring Dominion's affiliates to install additional water conservation measures on the existing nuclear power reactor Units 1 and 2, to compensate or mitigate against the significant and adverse incremental impacts that will be caused by proposed Units 3 and 4. For example, if the process cooling water for Units 1 and 2 is cooled using the once-through cooling system, this water could be cooled (as is done at other sites) using the dry cooling tower (or an enlarged version of it) that is planned for Unit 4. While this diversion of process water might be small, it would offset some of the impacts of Unit 3. When a company operates an existing facility that emits pollution and/or has adverse environmental impacts, it is common for a regulator to at least consider, and sometimes impose, additional environmental controls on the existing

units as a trade-off for obtaining approval to construct additional units. Indeed, imposing additional controls on old and otherwise “grandfathered” operations is sometimes a very cost-effective way to reduce the total pollution or environmental impact of an expanding industrial facility. It should at least be *considered* in any NEPA analysis of all reasonable alternatives. And, as the Commission has noted, “the fact that a possible alternative is beyond the Commission’s power to implement, does not absolve us of any duty to consider it.” *Seabrook*, CLI-77-8, 5 NRC at 540; 10 C.F.R. Part 51, Subpart A, App. A, § 5. It seems to me that creative nuclear engineers and environmental scientists, if properly motivated, might very well propose realistic offsets or mitigation measures that could be applied to the preexisting reactors on the same site. In any event, I see no reason to dismiss peremptorily the reasonable option of considering possible trade-offs or mitigation on the existing units as part of the NEPA alternatives analysis for the new units.<sup>3</sup>

It is for these reasons that I conclude that the NRC Staff failed to comply with NEPA § 102(2)(C)(iii) as required by NEPA Baseline Issue 1. Nor do I think that the above-stated defects have been remedied by the supplemental evidence and material that we gathered during the evidentiary hearing and/or that was submitted by Dominion and the NRC Staff after the hearing. Thus, even if we were to amend the FEIS *pro tanto*, as we are authorized to do, the conclusion is the same. The failure of the NRC Staff to rigorously look at the process whereby all possible sites within this large ROI were short-circuited to three alternative sites, is not something that can be remedied by a quick *post-facto* addendum.

Accordingly, I must also conclude that, under NEPA Baseline Issues 2 and 3, on balance the ESP should not be issued.

In closing, I note that I do not think that the denial of the ESP would necessarily require Dominion and the Staff to restart the process from scratch. It is not within the power of a Board to order or instruct the NRC Staff to redo the alternatives analysis in the FEIS and to issue a supplemental draft EIS and final EIS covering that subject. But if it were, I would do so. This would need to be done scrupulously and with public input, so that it did not simply lead to a predetermined reapproval of the North Anna site.

Alex S. Karlin, Chairman  
ADMINISTRATIVE JUDGE

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<sup>3</sup> I reject the suggestion that the NEPA alternatives analysis for ESPs is limited solely to consideration of alternative sites. The ESP regulation states that the EIS “must *include* an evaluation of alternative sites” but does *not exclude* consideration of system design alternatives. See 10 C.F.R. § 52.18 (emphasis added). The FEIS itself includes a discussion of “System Design Alternatives.” FEIS § 8.2.

## APPENDIX A

### SIX FUNDAMENTAL QUESTIONS THAT ESP BOARD MUST ANSWER IN AN UNCONTESTED MANDATORY PROCEEDING

The following are the six questions that a Board must answer when handling an uncontested proceeding for an early site permit. These are sometimes referred to as the “mandatory findings.” These findings are required by (a) the notice that the Commission published in the *Federal Register* when it issued the Notice of Hearing, *see* 68 Fed. Reg. 67,489 (Dec. 2, 2003) regarding Dominion North Anna; (b) NRC regulations, including 10 C.F.R. §§ 2.104(b) and 51.105(a)(1)-(3); and (c) *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5 (2005).

1. *Safety Issue 1:* The Director of NRR is obligated to propose a *finding* as to whether issuance of the ESP will be inimical to the common defense and security or to the health and safety of the public.

The Board must decide whether the application and the record of the proceeding contain sufficient information, and the review of application by the NRC Staff has been adequate to support a finding that the issuance of the ESP will NOT be inimical to the common defense and security or to the health and safety of the public.

2. *Safety Issue 2:* The Director of NRR is obligated to propose a *finding* as to whether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having the characteristics that fall within the parameters for the site, can be constructed without undue risk to the health and safety of the public.

The Board must decide whether the application and the record of the proceeding contain sufficient information, and the review of application by the NRC Staff has been adequate to support a finding that, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor, or reactors, having the characteristics that fall within the parameters for the site, can be constructed without undue risk to the health and safety of the public.

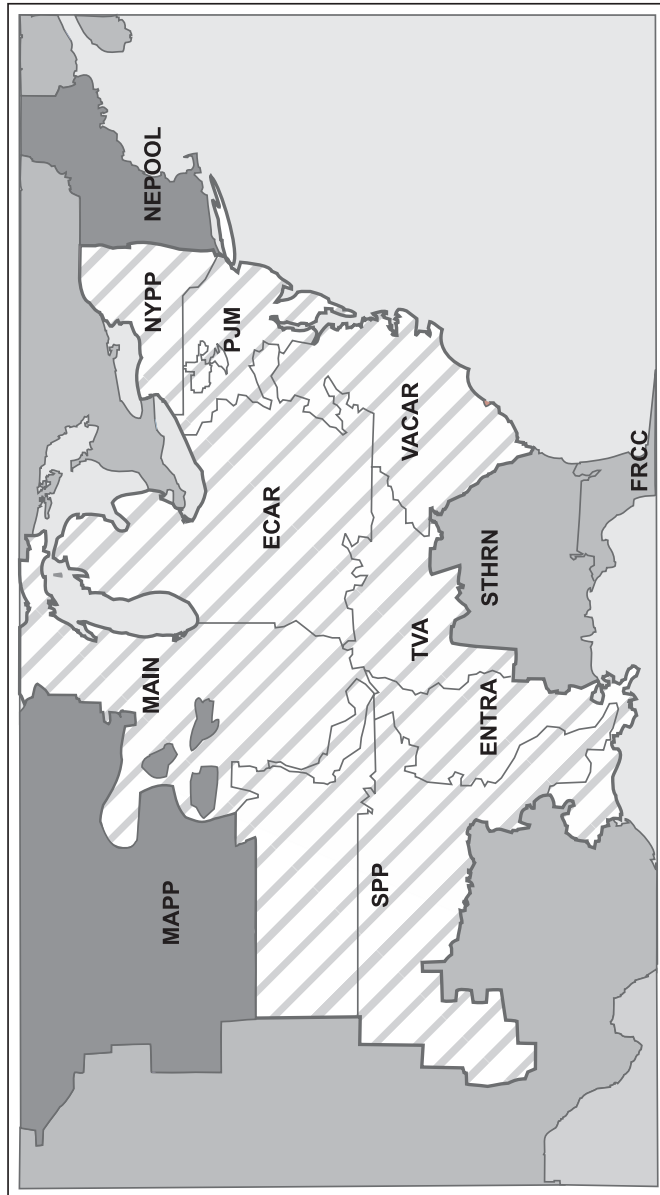
3. *NEPA Issue:* The Director of NRR is obligated to propose a *finding* as to whether, in accordance with the requirements of subpart A of 10 C.F.R. Part 51, the ESP should be issued as proposed.

The Board must decide whether the review conducted by the Commission pursuant to NEPA has been adequate.

4. *NEPA Baseline Issue 1:* The Board must decide whether the requirements of section 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have been complied with in the proceeding.
5. *NEPA Baseline Issue 2:* The Board must independently consider the final balance among the conflicting factors contained in the record of the proceeding and must determine the appropriate action to be taken.
6. *NEPA Baseline Issue 3:* The Board must determine, after considering reasonable alternatives, whether the ESP should be issued, denied, or appropriately conditioned to protect environmental values.



**APPENDIX B**  
**DOMINION'S REGION OF INTEREST**



Appendix B: Dominion's Region of Interest

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

J. E. Dyer, Director

In the Matter of

Docket No. 50-400  
(License No. NPF-63)

CAROLINA POWER & LIGHT  
COMPANY  
(Shearon Harris Nuclear Power  
Plant, Unit 1)

June 13, 2007

The Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC) take an immediate enforcement action in the form of an order revoking the operating license for the Shearon Harris Nuclear Power Plant (SHNPP) Unit 1, or impose maximum fines for each violation for each day the plant has been in violation of fire protection regulations; participate in open and public proceedings with the petitioners, Carolina Power & Light (CP&L, the licensee), and other external stakeholders in the vicinity of the SHNPP during deliberations on the petition; and resolve all violations of federal regulations before accepting a license renewal application from Carolina Power & Light for the SHNPP.

The final Director's Decision (DD) on this petition was issued on June 13, 2007. The NRC denied the Petitioners' request for an order that would revoke the SHNPP operating license or impose maximum fines for each violation for each day the plant has been in violation of fire protection regulations. The bases for this Decision are due to the fact that the Licensee has several levels of defense-in-depth in fire protection and has in place compensatory measures in accordance with NRC expectations to address noncompliances. Additionally, the Licensee is actively identifying and completing corrective actions, including plant modifications and reanalysis efforts associated with its transition to the 10 C.F.R. § 50.48(c) licensing basis. The NRC appropriately exercised its enforcement discretion under the NRC's "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48(c))." The NRC

follows existing regulatory processes, policies, and programs (e.g., the Reactor Oversight Process) to verify that the Licensee is properly implementing its fire protection program at SHNPP in accordance with the regulations.

The NRC denied the Petitioners' request to conduct public meetings in the vicinity of SHNPP. As part of the 10 C.F.R. § 2.206 petition process, a public meeting may be held to give an opportunity to petitioners to provide additional information to the PRB. The Petitioners and the NRC Staff conducted one such public meeting on November 13, 2006, at NRC Headquarters. The Staff determined that an additional public meeting was not necessary.

The NRC Staff denied the Petitioners' request to not accept the Licensee's application for license renewal at SHNPP. License renewal applications are licensing actions and are not considered under 10 C.F.R. § 2.206. If the Petitioners meet hearing request and intervention criteria, they have an opportunity in the licensing proceedings pursuant to 10 C.F.R. § 2.309 to raise issues and concerns relevant to license renewal at SHNPP.

## **DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

### **I. INTRODUCTION**

By letter dated September 20, 2006, as supplemented by documents dated September 21, October 30, and November 29, 2006, and February 8, 2007, Mr. John D. Runkle, on behalf of the North Carolina Waste Awareness and Reduction Network, Nuclear Information and Resource Services, the Union of Concerned Scientists, NC Fair Share, and Students United for a Responsible Global Environment (the Petitioners) filed a petition pursuant to Title 10, section 2.206, of the *Code of Federal Regulations* (10 C.F.R.). The Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC):

- (1) Take an immediate enforcement action in the form of an order revoking the operating license for Shearon Harris Nuclear Power Plant (SHNPP or the Licensee) Unit 1, Docket No. 50-400, License No. NPF-63, or impose maximum fines for each violation for each day the plant has been in violation of fire protection regulations;
- (2) Participate in open and public proceedings with the Petitioners, the Licensee Carolina Power & Light, and other external stakeholders in the vicinity of SHNPP during deliberations on the petition;
- (3) Resolve all violations of federal regulations before accepting a license renewal application from Carolina Power & Light for SHNPP.

As the basis for this request, the Petitioners discussed several fire safety violations at SHNPP that they believe could affect the safe operation of the plant and safe shutdown of the plant in emergency situations. The Petitioners' concerns primarily focused on noncompliances, the risk associated with the noncompliances, reliance on compensatory measures, the NRC's policy on the use of enforcement discretion regarding certain fire protection issues, and intentional acts of sabotage or terrorism.

On October 10, 2006, the NRC's Petition Review Board (PRB) met to discuss the Petitioners' request for immediate action to revoke the operating license for SHNPP. The PRB denied the Petitioners' request for immediate action based on the Staff's determination that operation of the plant posed no immediate threat to public health and safety. The NRC advised the attorney for the Petitioners of this decision by phone on October 17, 2006.

During a public meeting at NRC Headquarters on November 13, 2006, the Petitioners further explained and supported their petition by providing additional information to the PRB. The NRC treated the transcript of this meeting as a supplement to the petition.

In a December 4, 2006, letter, the NRC also informed the Petitioners that it had received their request and referred the issues in the petition to the NRC Office of Nuclear Reactor Regulation for appropriate action as well as to the NRC Office of the Inspector General for consideration of the allegations of NRC wrongdoing.

The NRC Staff sent a copy of the proposed Director's Decision (DD) to the Petitioners and to the Licensee for comment by letters dated April 2, 2007. The NRC Staff received comments on May 1, 2007, from both the attorney for the Petitioners and from the Licensee of SHNPP. The NRC Staff considered the comments and addressed them in an enclosure to the transmittal letter for this DD.

All publicly available documents related to this petition are available in the NRC's Agencywide Documents Access and Management System (ADAMS). The petition is under Accession Nos. ML062640550 and ML062830089, the transcript is under ML063210488, and the supplements are under ML062980107, ML063200168, ML063450098, and ML070510497. The comments from the attorney for the Petitioners are under ML071230046 and comments from the Licensee are under ML071270210. The NRC Staff's response to comments is under ML071490145 and the final DD is under ML071490145.

These documents are also available at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1-F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records are accessible from the ADAMS Public Electronic Reading Room on the NRC Web site <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737 or by e-mail to [pdr@nrc.gov](mailto:pdr@nrc.gov).

The procedure for instituting a proceeding to modify, suspend, or revoke a license or to take other action against a licensee or other person subject to the jurisdiction of the Commission appears in 10 C.F.R. § 2.202, “Orders.”<sup>1</sup> The administrative procedure used in assessing civil penalties is set forth in 10 C.F.R. § 2.205, “Civil Penalties.”<sup>2</sup>

Management Directive 8.11, “Review Process for 10 CFR 2.206 Petitions,” issued October 2000 (ML041770328), outlines the procedure used by the NRC to process a petition filed under 10 C.F.R. § 2.206. This procedure aims to provide appropriate participation by Petitioners in, and opportunities for the public to observe, NRC’s decisionmaking activities related to a 10 C.F.R. § 2.206 petition.

## II. DISCUSSION

The Petitioners raised several concerns in support of their request for enforcement action. The NRC Staff placed these concerns into five categories (noncompliances, risk from noncompliances, compensatory measures, enforcement discretion, and intentional acts) and addresses each in this section. This section also addresses the Petitioners’ request for NRC Staff participation in open proceedings in the vicinity of SHNPP and the request for the NRC to deny the Licensee’s license renewal application for SHNPP.

### A. Noncompliances

The Petitioners provided a detailed historical perspective of the fire protection chronology at SHNPP. The Petitioners are primarily concerned with noncompliances associated with fire barriers, use of operator manual actions, and unanalyzed separation of circuits.

#### 1. Fire Barriers

The NRC’s concern with the performance of fire barriers for protecting electrical cables at nuclear power plants (NPPs) began with the failure of Thermo-

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<sup>1</sup>The NRC is authorized to make orders immediately effective if required to protect the public health, safety, or interest, or if the violation is willful.

<sup>2</sup>This regulation provides that the NRC initiate the civil penalty process by issuing a notice of violation and proposed imposition of a civil penalty. The agency provides the licensee or other person an opportunity to contest in writing the proposed imposition of a civil penalty. After evaluating the response, the NRC may mitigate, remit, or impose the civil penalty. The agency will provide an opportunity for a hearing if a civil penalty is imposed. The maximum civil penalty amount is \$130,000 per violation per day, adjusted for inflation by the Debt Collection Act of 1996.

Lag to pass performance tests conducted by an NPP licensee in October 1989. The NRC addressed this concern by conducting additional fire testing of Thermo-Lag, and issuing a series of generic communications to NPP licensees, including SHNPP. The generic communications included Information Notice (IN) 91-47, "Failure of Thermo-Lag Fire Barrier Material To Pass Fire Endurance Test," dated August 6, 1991, as the first in a series of INs issued between 1991 and 1995 on performance test failures and installation deficiencies related to Thermo-Lag fire barrier systems; Bulletin 92-01, "Failure of Thermo-Lag 330 Fire Barrier System To Maintain Cabling in Wide Cable Trays and Small Conduits Free from Fire Damage," dated June 24, 1992, supplemented on August 28, 1992; Generic Letter (GL) 92-08, "Thermo-Lag 330-1 Fire Barriers," dated December 17, 1992, requesting that NPP licensees provide information regarding the use of Thermo-Lag fire barriers; and Supplement 1 to GL 86-10, "Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used To Separate Redundant Safe Shutdown Trains Within the Same Fire Area," dated March 25, 1994.

Based on the NRC's generic communications, licensees reviewed their fire protection safe shutdown plans to determine whether corrective actions were needed. By letter dated August 29, 1997, the SHNPP Licensee notified the NRC that it had completed Thermo-Lag resolution activities (corrective actions) for SHNPP.

Subsequently, NRC Inspection Report 50-400/99-13 (ML003685341), dated February 3, 2000, identified issues at SHNPP associated with engineering evaluations for some of the Thermo-Lag fire barriers. By letter dated April 16, 2002 (ML021060517), the NRC issued a violation to SHNPP for the Thermo-Lag issues. In addition to the Thermo-Lag issues, the NRC inspection report included an unresolved item to track questions regarding Hemyc and MT fire barriers installed at SHNPP. The Staff addresses Hemyc and MT fire barrier issues later in this section.

In response to the Thermo-Lag fire barrier issues, the Licensee implemented additional corrective actions at SHNPP. The Licensee completed major modifications for many of the corrective actions. For example, the Licensee conducted fire testing, performed engineering evaluations, rerouted safe-shutdown cables to eliminate reliance on some Thermo-Lag fire barriers, installed fire detection in a fire area, and modified an existing wall to a 3-hour-rated fire barrier. NRC regulations provide for the acceptable use of fire detection and suppression to supplement 1-hour-rated fire barriers as one means to minimize the potential for fire damage in the unlikely event of a fire.

The SHNPP resident inspectors, regional inspectors, and regional specialists performed supplemental inspections as part of the Reactor Oversight Process to ensure that the Licensee was dealing appropriately with identified issues. As part of these supplemental inspections, the NRC reviewed the Licensee's corrective actions to address Thermo-Lag fire barriers at SHNPP. In a series of inspections

documented in reports dated August 12, 2002 (ML022250189), September 9, 2002 (ML022530113), October 4, 2002 (ML022800665), January 31, 2003 (ML030350561), and November 18, 2003 (ML033380523), the NRC determined that the corrective actions were appropriate except for one action that resulted in a noncited violation (NCV), as documented in the inspection report dated November 18, 2003. The NCV related to the use of inadequate operator manual actions to correct some of the Thermo-Lag fire barrier issues. The NRC determined that the NCV was of very low safety significance and the Licensee implemented corrective actions by assigning an additional operator to be available to perform safe shutdown actions. The *Use of Operator Manual Actions* section of this DD contains additional discussion of operator manual actions. In a letter dated May 1, 2007 (ML071270210), the Licensee specified that it had completed plant modifications to resolve the issue with Thermo-Lag fire barriers associated with the NCV. Any use of operator manual actions have been analyzed as adequate.

NRC resident inspectors assigned to SHNPP can review any completed plant modifications and licensee-implemented operator manual actions as part of the Reactor Oversight Process. NPP resident inspectors perform several baseline-level, onsite inspections each quarter as part of the Reactor Oversight Process. Additionally, they perform at least six inspections every quarter and spot-check fire protection systems and compensatory measures during routine plant status checks.

In 2004, the NRC amended its fire protection rule in 10 C.F.R. § 50.48(c) to allow NPP licensees to voluntarily adopt a risk-informed and performance-based fire protection program. In a risk-informed approach, risk insights, along with other factors such as defense-in-depth, are instrumental in focusing licensee and regulatory attention on design and operational issues commensurate with their importance. To this end, the rule provides for use of fire probabilistic risk assessments (PRAs) to identify risk-significant fire protection issues.

By letter dated June 10, 2005 (ML051720404), the Licensee informed the NRC of its intent to make the transition to 10 C.F.R. § 50.48(c) at SHNPP. In this letter, the Licensee stated it would seek a license amendment for the transition with a proposed date of May 2008. By letter dated September 19, 2005 (ML052140391), the NRC designated SHNPP as a transition pilot plant. During the transition of SHNPP to 10 C.F.R. § 50.48(c), the Licensee is reanalyzing its fire protection program and is developing a fire PRA. Because this voluntary program necessitates a reanalysis of its existing programs and development of a plant-specific fire PRA, the NRC determined that the Licensee should have an extended period of time to implement 10 C.F.R. § 50.48(c). As discussed in the *Enforcement Discretion* section of this DD, the NRC adopted an enforcement discretion policy for licensees voluntarily adopting 10 C.F.R. § 50.48(c). According to current NRC enforcement discretion (71 Fed. Reg. 19,905 (Apr. 18, 2006)), the Licensee

has until June 2008 to submit a license amendment for transition to 10 C.F.R. § 50.48(c).

On May 12, 2005, Nuclear Information and Resource Service *et al.*, submitted a 10 C.F.R. § 2.206 petition requesting that the NRC take enforcement actions including the collection of information from NPPs to determine the extent of inoperable fire barriers. On January 20, 2006, the NRC issued DD-06-1, “Director’s Decision Under 10 C.F.R. § 2.206,” 63 NRC 133, granting, in part, that the NRC would determine the extent of condition of inoperable fire barriers through the use of generic communications. Accordingly, on April 10, 2006, the NRC issued GL 2006-03, “Potentially Nonconforming Hemyc and MT Fire Barrier Configurations,” to address, among other things, the performance of Hemyc and MT fire barriers at a number of NPPs, including SHNPP.

The Licensee responded to GL 2006-03 for SHNPP by letters dated April 28 and June 9, 2006 (ML061240052 and ML061710062, respectively). In those letters, the Licensee stated that it relies on Hemyc and MT fire barriers and that it plans to disposition any nonconforming conditions in accordance with 10 C.F.R. § 50.48(c). The Licensee also stated that compensatory measures will remain in place until it resolves nonconforming conditions.

SHNPP has completed plant modifications to correct some of its fire protection noncompliances. For example, one major corrective action completed by the Licensee involves the replacement of charging system electrical cable with approximately 2300 feet of fire-resistive cable (ML061140227). The Licensee is not required to submit docketed information on the resolution of each fire protection noncompliance during its transition to 10 C.F.R. § 50.48(c), but it is required to implement and maintain compensatory measures for remaining noncompliances. Licensees may implement compensatory measures, such as fire watches and operator manual actions, in accordance with their technical specifications, license conditions, and approved fire protection program to enable continued plant operations while corrective actions are completed.

In summary, the Licensee is addressing fire barrier nonconforming conditions at SHNPP through 10 C.F.R. § 50.48(c). In the interim, the Licensee will maintain compensatory measures until it resolves nonconforming conditions. The NRC verifies fire barrier compliance and the adequacy of compensatory measures through its Reactor Oversight Process.

## **2. Use of Operator Manual Actions**

In 2003, the NRC initiated rulemaking that would have amended Appendix R, “Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979,” to 10 C.F.R. Part 50, “Domestic Licensing of Production and Utilization Facilities,” to allow licensees to use acceptable operator manual actions in lieu of the separation or fire barrier requirements in paragraph III.G.2



of Appendix R. In 2005, the NRC published a proposed rule for comment that would have allowed the use of feasible and reliable operator manual actions in conjunction with fire detection and automatic fire suppression systems. In 2006, following public comments on the proposed rule, the NRC determined that the rule would not meet the agency rulemaking goal of increased effectiveness and efficiency. On March 6, 2006, the NRC published a notice in the *Federal Register* (71 Fed. Reg. 11,196) withdrawing the proposed rule.

On June 30, 2006, following withdrawal of the proposed rule, the NRC issued Regulatory Issue Summary (RIS) 2006-10, "Regulatory Expectations with Appendix R paragraph III.G.2 Operator Manual Actions," describing the Staff's expectations for the use of operator manual actions. For operator manual actions used in lieu of required fire barriers, RIS 2006-10 stated that licensees should implement compensatory measures and complete corrective actions for missing or degraded fire barriers as required by regulations.

In Revision 9 to Licensee Event Report (LER) 2002-004, "Unanalyzed Condition Due to Inadequate Separation of Associated Circuits," dated October 28, 2005 (ML053070550), which was submitted before RIS 2006-10, the Licensee reported the use of operator manual actions in lieu of separation (fire barriers) for some control cabling at SHNPP. The Licensee stated that it had initiated corrective actions, such as a complete validation of the safe shutdown analysis. The Licensee implemented compensatory measures, such as a compensatory fire watch and operator manual actions, in the interim while performing corrective actions. Licensees may implement compensatory measures in accordance with the technical specifications, license conditions, and approved fire protection program to enable continued plant operations while they are completing corrective actions. The NRC verifies compliance with the regulations and adequacy of compensatory measures and corrective actions through its Reactor Oversight Process.

In summary, consistent with NRC expectations for the use of operator manual actions, the Licensee initiated corrective actions for the use of manual actions credited in lieu of fire barriers and has indicated that it will maintain compensatory measures until SHNPP is in compliance.

### ***3. Unanalyzed Separation of Circuits***

Beginning in 1997, the NRC Staff noticed that a series of industrywide LERs were identifying plant-specific problems related to potential fire-induced electrical circuit failures. The NRC treated the issue generically and, in 1998, initiated interaction with stakeholders to understand and resolve the issue. The NRC documented these issues in IN 99-17, "Problems Associated with Post-Fire Safe-Shutdown Circuit Analyses," dated June 3, 1999. In 2001, the Electric Power Research Institute and the Nuclear Energy Institute performed a series

of cable functionality tests to increase the understanding of fire-induced circuit failures.

The NRC and interested stakeholders worked together to better understand the possible and probable modes of circuit failures. On December 29, 2004, the NRC issued RIS 2004-03, Revision 1, ‘Risk-Informed Approach for Post-Fire Safe-Shutdown Associated Circuit Inspections,’ which provided guidance to NRC inspectors on circuit configurations that are likely to fail in a fire and circuit configurations that have little or no likelihood of failing. The NRC also issued RIS 2005-30, ‘Clarification of Post-Fire Safe-Shutdown Circuit Regulatory Requirements,’ dated December 20, 2005, which clarified regulatory expectations for post-fire safe-shutdown circuits. The NRC completed cable fire testing in 2006 to increase the understanding of fire-induced circuit failures.

The NRC Staff is also currently working with external stakeholders to address the potential for fire-induced circuit failures to cause multiple spurious actuations. As directed by the Commission in the Staff Requirements Memorandum related to SECY-06-0196, ‘Issuance of Generic Letter 2006-XX, ‘Post-Fire Safe-Shutdown Circuits Analysis Spurious Actuations,’ ’ issued September 11, 2006 (ML063490140), the NRC Staff is working to develop or endorse guidelines that address multiple spurious actuations. The Commission provided guidance that immediate regulatory action was not needed because of the availability of several levels of defense-in-depth in fire protection.

When the Licensee reported circuit issues in Revision 0 to LER 2002-004, the Licensee placed these issues in its corrective action program and implemented compensatory measures. The Licensee completed some corrective actions and the remainder are pending the transition to a performance-based, risk-informed fire protection licensing basis at SHNPP, pursuant to 10 C.F.R. § 50.48(c). During the transition, the Licensee is reanalyzing fire-induced circuit failures and developing a fire PRA that can evaluate these failures in an integrated fashion. The NRC considers a fire PRA to be an effective tool for identifying risk-significant circuit configurations and prioritizing corrective actions.

In summary, the NRC is working toward generic resolution of the issue of fire-induced circuit failures causing multiple spurious actuations. The Licensee has taken some corrective actions to address fire-induced circuit failures at SHNPP and has indicated it will maintain compensatory measures while it completes corrective actions.

## **B. Risk from Noncompliances**

The Petitioners are concerned about the risk resulting from noncompliances at SHNPP, and point out that the cumulative risk is not known. The Petitioners’ supplemental letter dated February 8, 2007, stated that the Licensee erroneously

assumed that its fire barriers were 100% effective in SHNPP Individual Plant Examination for External Events (IPEEE) results.

NRC inspectors and Staff have two tools available for performing risk assessments of operating conditions at NPPs. They can use the significance determination process (SDP) or the accident sequence precursor (ASP) analysis to determine the safety significance of noncompliances associated with inspection findings.

NRC inspectors used the SDP to determine the risk significance associated with the Thermo-Lag fire barrier inspection finding. They documented the risk assessment in an NRC letter dated April 16, 2002 (ML021060517). In that letter the NRC characterized the finding as “white” (i.e., an issue with low to moderate increased importance to safety, which may require additional NRC inspections). By letter dated October 4, 2002 (ML022800665), the NRC reevaluated the Thermo-Lag inspection finding by considering some of the completed corrective actions. In that letter, the NRC determined that the risk significance of the inspection finding was reduced to “green” (i.e., very low safety significance). The *Fire Barriers* section of this DD discusses the Licensee’s actions concerning the disposition of the fire barriers.

The NRC Staff used an ASP analysis to determine the risk significance associated with the unanalyzed plant conditions identified in Revision 9 to LER 2002-004. An NRC memorandum dated January 27, 2006 (ML060240525) summarized the ASP analysis. According to the NRC ASP Program, which identifies, documents, and ranks events at NPPs, the unanalyzed circuit conditions identified in LER 2002-004 were not significant risk contributors. To address some of the unanalyzed conditions resulting from inadequate separation of associated circuits, the Licensee proposed, and the NRC Staff approved by letter dated May 1, 2006 (ML061140227), the use of fire-resistive electrical cables in some fire areas. The *Unanalyzed Separation of Circuits* section of this DD discusses the Licensee’s actions to address fire-induced circuit failures.

As discussed in the *Fire Barriers* section of this DD, the Licensee is transitioning SHNPP to 10 C.F.R. § 50.48(c). As part of the transition process, the Licensee is developing a state-of-the-art fire PRA. The fire PRA is an analytical tool that will enable the Licensee to determine the cumulative risk of fire protection noncompliances, enable a more accurate fire risk assessment than that provided by the IPEEE, and prioritize resources to address risk-significant fire protection issues.

Since SHNPP is part of the pilot plant effort, the NRC Staff is observing the Licensee’s progress and efforts in developing the plant-specific fire PRA. The NRC Staff documented these observations in trip report summaries available to the public in ADAMS (ML060240605, ML061530462, ML070920043, ML070330336). The NRC Staff has opened to the public the technical meetings

between the NRC Staff and industry experts whenever possible (public meetings were held on May 31 and June 1, 2007).

In summary, NRC has determined that the risk significance associated with the Thermo-Lag fire barrier inspection finding was very low and with the unanalyzed conditions resulting from inadequate separation of associated circuits was not significant. The Licensee has completed corrective action to address some of the fire barrier issues and fire-induced circuit failures and will maintain compensatory measures at SHNPP until it has resolved all remaining issues. In addition, the Licensee is developing a fire PRA as part of the SHNPP transition to 10 C.F.R. § 50.48(c).

### **C. Compensatory Measures**

The Petitioners are concerned that the Licensee's reliance on compensatory measures at SHNPP contradicts prudent regulatory practices, is not equivalent to compliance, cannot have an indefinite time frame, and in some cases is unapproved.

The NRC Staff agrees that compensatory measures, such as fire watches and operator manual actions, are not a substitute for demonstrating permanent compliance with the regulations. Fire protection at NPPs uses the concept of defense-in-depth to achieve the required degree of reactor safety by using echelons of administrative controls, fire protection systems, design features, and safe shutdown capability. When one echelon is degraded or weakened by a noncompliance or plant condition, an adequate compensatory measure can act as a temporary substitute. When a licensee or an NRC inspector identifies a noncompliance or other condition, licensees are given the flexibility to implement a compensatory measure in accordance with the technical specifications, license conditions, and approved fire protection program to enable continued plant operations while completing corrective actions. Furthermore, the NRC has determined that enforcement discretion is warranted for noncompliances, provided that compensatory measures are implemented while licensees complete the transition to 10 C.F.R. § 50.48(c). A formal policy outlines the conditions for enforcement discretion and then specifies the time frame (see the *Enforcement Discretion* section of this DD). The NRC uses guidance in the Inspection Manual, Part 9900, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," Section 7, "Corrective Action" to evaluate a licensee's use of compensatory measures until final resolution of noncompliances.

The Licensee implemented compensatory measures upon discovery of the initial unanalyzed circuit conditions in 2002. The Licensee implemented compensatory measures, including a compensatory fire watch and operator manual actions, as required by its approved fire protection program, to address the

noncompliances and conditions (e.g., unanalyzed circuit condition and Hemyc and MT fire barriers). These compensatory measures were in place before the Licensee's transition to 10 C.F.R. § 50.48(c). The time frame for compensatory measures as an interim action is detailed in the interim enforcement discretion policy for plants transitioning to 10 C.F.R. § 50.48(c) discussed in *Federal Register* notices dated June 16, 2004, January 14, 2005, and April 18, 2006. During the SHNPP transition to 10 C.F.R. § 50.48(c), the NRC is verifying the Licensee's implementation of the fire protection program, including compensatory measures, through the Reactor Oversight Process.

In summary, licensees have the flexibility to implement compensatory measures in accordance with the technical specifications, license conditions, and an approved fire protection program. The Licensee had implemented compensatory measures at SHNPP before transition began and will continue these measures throughout the transition to 10 C.F.R. § 50.48(c). The NRC is verifying implementation of the fire protection program through the Reactor Oversight Process.

#### **D. Enforcement Discretion**

The Petitioners are concerned that the NRC's enforcement policy, which allows the NRC to exercise enforcement discretion for certain violations of the requirements in 10 C.F.R. § 50.48, "Fire Protection," results in a delay in correcting noncompliances at SHNPP. The Petitioners also state that they did not have an opportunity to comment on the Licensee's reliance on compensatory measures.

The Licensee first reported circuit issues in 2002 in Revision 0 to LER 2002-004. The Licensee placed these issues in its corrective action program and implemented compensatory measures in accordance with SHNPP's approved fire protection program. As stated before, licensees may implement compensatory measures in accordance with their fire protection program to enable continued plant operation while corrective actions are completed, an approach that recognizes the concept of defense-in-depth. In addition, the Licensee has already accomplished some corrective actions and the remainder are pending transition to 10 C.F.R. § 50.48(c).

The NRC's "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 C.F.R. § 50.48(c))" is available on the NRC public Web site at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforc-pol.pdf>. As stated in that policy, the NRC will normally not take enforcement action for a violation of 10 C.F.R. § 50.48(b) (or the requirements in a fire protection license condition) involving a problem related to engineering, design, implementing procedures, or installation, if the violation is documented in an inspection report and it meets certain criteria including the Licensee's voluntary initiative to adopt the risk-informed performance-based fire protection program

included under 10 C.F.R. § 50.48(c). This enforcement discretion is allowed for a specified period of time as defined by a revision to the enforcement policy (71 Fed. Reg. 19,905). During the reanalysis that is part of the transition process, the NRC Staff anticipates that licensees may identify noncompliances of NRC requirements; however, if licensees meet the conditions outlined in the enforcement discretion policy, the NRC may exercise enforcement discretion.

The Licensee has voluntarily initiated adoption of 10 C.F.R. § 50.48(c) at SHNPP and is currently transitioning to this new rule. During the transition process, licensees actively reevaluate their fire protection programs and develop fire PRAs. In this way, the transition encourages licensees to identify fire protection issues and determine their risk significance. This reevaluation enables licensees to focus their resources on the most risk-significant issues and resolve those that are low significance. Licensees are not required to identify their compensatory actions to the public; however, the Licensee provided some information in its response to GL 2006-03 (see *Fire Barriers* section). The NRC provides the results of its reviews of fire issues, including compensatory measures, in its inspection reports.

In summary, the NRC has an enforcement discretion policy applicable to licensees that are transitioning NPPs to 10 C.F.R. § 50.48(c) with a defined time frame for implementation. The NRC published the original policy and subsequent revisions in the *Federal Register* for public comment. The Licensee has initiated, and in some cases completed, corrective actions for noncompliances during its transition to 10 C.F.R. § 50.48(c) at SHNPP.

#### **E. Intentional Acts**

The Petitioners are concerned about the challenge to fire safety at SHNPP posed by acts of sabotage or terrorism. The Petitioners state that it is reasonable now for the NRC to consider terrorist acts.

The NRC Staff is addressing terrorist acts and other industrywide security issues in a proposed rulemaking entitled Power Reactor Security Requirements (RIN 3150-AG63; 71 Fed. Reg. 62,664 (2006)). The Staff is also addressing these issues on a plant-specific basis. The NRC is performing a detailed review of each plant's specific plans and strategies for responding to a wide range of events (including the impact of an aircraft) which were required in an order issued in February 2002.

The NRC has indicated in public statements that classified studies have confirmed that commercial NPPs are robust and the likelihood of a radioactive release affecting public health and safety is low. Such studies include analyses of the ability of NPPs to withstand damage to, or loss of, large areas of the plant caused by a range of postulated attacks that could result in large fires and explosions. After examining a number of emergency scenarios involving

operating reactors, spent fuel pools, and dry-cask storage installations, the NRC has concluded that the basis used to develop NPP emergency plans remains valid. The agency is confident that the public near those facilities can be adequately protected should an attack occur.

In summary, the NRC is considering terrorist acts and is working toward enhancing strategies to mitigate intentional acts; however, the NRC has concluded that the existing planning basis used to develop NPP emergency plans remains valid and is confident that the public near those facilities will be adequately protected should an attack occur.

#### **F. Open Proceedings**

The Petitioners requested open and public proceedings, including hearings in the vicinity of SHNPP, during NRC's deliberations on this petition.

NRC MD 8.11 describes the review process used by NRC Staff for petitions filed pursuant to 10 C.F.R. § 2.206. MD 8.11 directs the NRC Staff in the processing of 10 C.F.R. § 2.206 petitions, including meetings between a petitioner and the PRB. Part IV(3) of MD 8.11 states that the NRC Staff will convene a technical review meeting whenever it believes that such a meeting would be beneficial to its review of a petition. As part of the 10 C.F.R. § 2.206 process, the NRC Staff conducted a public meeting at NRC Headquarters on November 13, 2006, with the Petitioners, the Licensee, and the external stakeholders. The meeting summary and transcript are available in ADAMS (ML063380323 and ML063210488, respectively).

The NRC received letters requesting its participation in a public meeting on March 22, 2007, in the vicinity of the SHNPP from North Carolina State Senator Mrs. Ellie Kinnaird; Mayor of the Town of Carborro, Mr. Mark Chilton; Mayor of the Town of Chapel Hill, Mr. Kevin Foy; and the Chairman of the Board of Orange County Commissioners, Mr. Moses Carey, Jr. The Chairman of the NRC responded to these requests in letters dated March 19, 2007 (ML070660213, ML070660649, ML070740287, and ML070660634, respectively). In those responses, he conveyed information on the NRC's 10 C.F.R. § 2.206 process including a discussion of the November 13, 2006, public meeting. Additionally, in accordance with the 10 C.F.R. § 2.206 process, the Staff provided an opportunity to petitioners, the Licensee, and other members of the public to comment on the NRC's proposed DD. The NRC Staff considers all comments received during the 30-day comment period before making its final decision and issuing a final DD.

In summary, the NRC followed MD 8.11 for processing 10 C.F.R. § 2.206 petitions. The NRC accepted and considered all information that Petitioners or other members of the public submitted.

### **G. License Renewal**

The Petitioners requested that the NRC not accept the Licensee's application to extend the SHNPP operating license for an additional 20 years.

A petition filed pursuant to 10 C.F.R. § 2.206 provides members of the public with the means to request NRC enforcement-related action (i.e., modification, suspension, or revocation of a license, or other appropriate enforcement-related action), as distinguished from licensing or rulemaking actions. Because a licensee applying to extend its operating license is submitting a licensing action, the NRC cannot address the Petitioners' request under 10 C.F.R. § 2.206. The NRC's license renewal process relies on two key principles. The first principle is that the NRC's existing regulatory processes are adequate to ensure the safety of operating plants. The second principle is that the current licensing basis is adequate and carries forward into the period of extended operation.

The NRC relies on current regulatory processes to handle any issues that impact current operation of plants (e.g., the fire protection requirements contained in 10 C.F.R. § 50.48), and those regulatory processes carry forward into the renewal term. The Petitioners, if they meet hearing request and intervention criteria, will have an opportunity in proceedings pursuant to 10 C.F.R. § 2.309, "Hearing Requests, Petitions To Intervene, Requirements for Standing, and Contentions," to raise issues and concerns relevant to license renewal for SHNPP.

On May 19, 2007, Mr. John D. Runkle, on behalf of the North Carolina Waste Awareness and Reduction Network and the Nuclear Information and Resource Service, filed a petition for leave to intervene and request for a hearing with respect to license renewal of the SHNPP in accordance with 10 C.F.R. § 2.309 (ML071430566). The request is pending consideration before the Atomic Safety and Licensing Board.

### **III. CONCLUSION**

The NRC denies the Petitioners' request for an order that would revoke the SHNPP operating license or impose maximum fines for each violation for each day the plant has been in violation of fire protection regulations. The Licensee continues to have available several levels of defense-in-depth in fire protection and has in place compensatory measures in accordance with NRC expectations to address noncompliances. Additionally, the Licensee is actively identifying and completing corrective actions, including plant modifications and reanalysis efforts associated with its transition to the 10 C.F.R. § 50.48(c) licensing basis. The NRC appropriately exercised its enforcement discretion under the NRC's "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48(c))." The NRC follows existing regulatory processes, policies, and programs (e.g., the Reactor Oversight Process) to verify



that the Licensee is properly implementing its fire protection program at SHNPP in accordance with the regulations.

The NRC denies the Petitioners' request to conduct public meetings in the vicinity of SHNPP. As part of the 10 C.F.R. § 2.206 petition process, a public meeting may be held to give an opportunity to petitioners to provide additional information to the PRB. The Petitioners and the NRC Staff conducted one such public meeting on November 13, 2006, at NRC Headquarters. The NRC issued a proposed Director's Decision for comment on April 2, 2007. Under the 10 C.F.R. § 2.206 petition process, the public was given the opportunity to submit comments and supplemental information, without a public meeting. Additional information was received from the Petitioners and the Licensee by letters dated May 1, 2007. The NRC Staff considered these comments before making its decision and issuing this final DD. The NRC Staff's response to the comments is contained in an enclosure to the transmittal letter for this DD. Based on the above, the Staff determined that an additional public meeting was not necessary.

The NRC Staff denies the Petitioners' request to not accept the Licensee's application for license renewal at SHNPP. A petition filed pursuant to 10 C.F.R. § 2.206 gives members of the public the means to request NRC enforcement-related action (i.e., modification, suspension, or revocation of a license, or other appropriate enforcement-related action), as distinguished from licensing or rulemaking. License renewal applications are licensing actions and are not considered under 10 C.F.R. § 2.206. If the Petitioners meet hearing request and intervention criteria, they will have an opportunity in the licensing proceedings pursuant to 10 C.F.R. § 2.309 to raise issues and concerns relevant to license renewal at SHNPP.

As provided in 10 C.F.R. § 2.206(c), the Staff will file a copy of this DD with the Secretary of the Commission for the Commission to review. As provided for by this regulation, the Decision will constitute the final action of the Commission 25 days after the date of the Decision unless the Commission, on its own motion, institutes a review of the Decision within that time.

FOR THE NUCLEAR REGULATORY  
COMMISSION

James T. Wiggins, Acting Director  
Office of Nuclear Reactor  
Regulation

Dated at Rockville, Maryland,  
this 13th day of June 2007.

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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 119 (2006)  
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 121 (2006)  
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007)  
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 128-34 (2007)  
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 129-30 (2007)  
NEPA does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities; CLI-07-9, 65 NRC 141 (2007)  
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 131 (2007)  
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- American Rivers v. Federal Energy Regulatory Commission*, 201 F.3d 1186, 1195 n.15 (9th Cir. 2000)  
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- Andrew Siemaszko*, CLI-06-12, 63 NRC 495, 502 (2006)  
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- Andrew Siemaszko*, CLI-06-12, 63 NRC 495, 503 (2006)  
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- Andrew Siemaszko*, CLI-06-12, 63 NRC 495, 504 (2006)  
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NRC is loath to permit a criminal defendant to use its procedures to do an end run around rules  
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- Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC  
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although a board may appropriately view a petitioner's supporting information in a light favorable to  
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although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their  
pleadings, such parties must still meet the basic requirements of the contention admissibility rules,  
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- Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC  
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- Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC  
149, 156 (1991)  
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- Atlas Corp.* (Moab, Utah Facility), LBP-97-9, 45 NRC 414, 426-27, *aff'd*, CLI-97-8, 46 NRC 21 (1997)  
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- Babcock & Wilcox* (Apollo, Pennsylvania Fuel Fabrication Facility), LBP-92-35, 36 NRC 355, 358 n.9 (1992)  
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- Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 101 (1984)  
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- Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 NRC 39, *passim*, *motion to vacate denied*, CLI-98-15, 48 NRC 45, 51 (1998), *aff'd sub nom. National Whistleblower Center v. NRC*, 208 F.3d 256 (D.C. Cir. 2000), *cert. denied*, 531 U.S. 1070 (2001)  
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- Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 NRC 39, 41 (1998), *motion to vacate denied*, CLI-98-15, 48 NRC 45 (1998)  
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- Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-15, 48 NRC 45, 52 (1998), *aff'd sub nom. National Whistleblower Center v. NRC*, 208 F.3d 256 (D.C. Cir. 2000), *cert. denied*, 531 U.S. 1070 (2001)  
the Commission has used *sua sponte* review as a vehicle to set a specific timetable; CLI-07-1, 65 NRC 4 (2007)
- Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 NRC 774, 792-94 (1978)  
NRC hearings on safety issues concern the adequacy of the license application, not the NRC Staff's work, but NRC hearings on NEPA issues focus entirely on the adequacy of the Staff's work; CLI-07-17, 65 NRC 395 (2007)
- Bullcreek v. NRC*, 359 F.3d 536 (D.C. Cir. 2004)  
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- Burbank Anti-Noise Group v. Goldschmidt*, 622 F.2d 115, 116-17 (9th Cir. 1980), *cert. denied*, 450 U.S. 965 (1981)  
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- California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982)  
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- Calvert Cliffs' Coordinating Committee, Inc. v. AEC*, 449 F.2d 1109, 1118 (D.C. Cir. 1971)  
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- Carolina Power & Light Co.* (H.B. Robinson, Unit 2), ALAB-569, 10 NRC 557, 558 (1979)  
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- addressing the merits of the intervenor's contention until the EPA had issued its own decision in a parallel case; CLI-07-16, 65 NRC 388 (2007)
- Carolina Power & Light Co.* (H.B. Robinson, Unit 2), ALAB-569, 10 NRC 557, 559 (1979)  
even if a licensing board disagrees with EPA on the thermal impact issue, it is nevertheless required by law to consider the EPA's decision as binding; CLI-07-16, 65 NRC 388 (2007)
- Carolina Power & Light Co.* (H.B. Robinson, Unit 2), ALAB-569, 10 NRC 557, 561 (1979)  
Congress, in enacting the Clean Water Act, removed the broad responsibility of multiple federal agencies for water quality standards and placed that responsibility solely in the hands of the EPA; CLI-07-16, 65 NRC 388 (2007)
- NRC may not undercut EPA by undertaking its own analyses and reaching its own conclusions on water quality issues already decided by EPA; CLI-07-16, 65 NRC 388 (2007)
- Carolina Power & Light Co.* (H.B. Robinson, Unit 2), ALAB-569, 10 NRC 557, 561 n.14 (1979)  
NRC abstinence from setting water quality standards is fully consistent with congressional general intent that the Clean Water Act is to be implemented in a way that will avoid needless duplication and unnecessary delays at all levels of government; CLI-07-16, 65 NRC 389 (2007)
- Carolina Power & Light Co.* (H.B. Robinson, Unit 2), ALAB-569, 10 NRC 557, 562 (1979)  
NRC is required to take EPA's considered decisions at face value; CLI-07-16, 65 NRC 388 (2007)
- Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986)  
NUREGs and regulatory guides serve as guidance, do not prescribe requirements, are not substitutes for regulations, and are not binding authority; LBP-07-6, 65 NRC 440 n.31 (2007)
- Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-00-11, 51 NRC 297, 299 (2000)  
the Commission's supervisory authority does not constitute grounds for a party's own request for appellate review; CLI-07-1, 65 NRC 6 n.23 (2007)
- Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir.), *cert. denied*, 502 U.S. 994 (1991)  
an agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality; LBP-07-9, 65 NRC 608 n.96, 637, 638 (2007)
- the goal of the applicant was very narrow, i.e., to launch a new cargo hub thereby helping to fuel the local economy, and thus the NEPA alternative sites analysis did not need to include nonlocal sites; LBP-07-9, 65 NRC 636 (2007)
- Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 199 (D.C. Cir.), *cert. denied*, 502 U.S. 994 (1991)  
a project's goal is to be determined by the applicant, not the agency; LBP-07-9, 65 NRC 607 (2007)
- Citizens Awareness Network, Inc. v. NRC*, 391 F.3d 338 (1st Cir. 2004)  
NRC's new contention admission procedures comply with the relevant provisions of the Administrative Procedure Act and the Commission has furnished an adequate explanation for the changes; LBP-07-4, 65 NRC 303 n.96 (2007)
- Citizens Awareness Network, Inc. v. NRC*, 391 F.3d 338, 343, 351 (1st Cir. 2004)  
cross-examination is available under Subpart L whenever it is required for a full and fair adjudication of the facts; LBP-07-4, 65 NRC 303 n.96 (2007)
- Citizens Bank of Maryland v. Strumpf*, 516 U.S. 16, 20 (1995)  
the language of a regulation should not be construed to destroy itself; LBP-07-6, 65 NRC 464 (2007)
- City of Bridgeton v. Federal Aviation Administration*, 212 F.3d 448, 458 (8th Cir. 2000)  
the environmental impact statement need not consider an infinite range of alternatives, only reasonable or feasible ones; LBP-07-9, 65 NRC 607 (2007)
- City of Carmel-By-The-Sea v. U.S. Department of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997)  
the stated goal of a project necessarily dictates the range of reasonable alternatives and an agency cannot define its objectives in unreasonably narrow terms; LBP-07-9, 65 NRC 608 n.96, 637 (2007)
- City of Grapevine v. U.S. Department of Transportation*, 17 F.3d 1502, 1506 (D.C. Cir.), *cert. denied*, 513 U.S. 1043 (1994)  
the agency's alternative analysis should be based around the applicant's goals, including the applicant's economic goals; LBP-07-9, 65 NRC 608 (2007)

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- City of New York v. U.S. Department of Transportation*, 715 F.2d 732, 742 (2d Cir. 1983)  
which alternatives are considered reasonable is determined by a project's goals; LBP-07-9, 65 NRC 607 (2007)
- City of New York v. U.S. Department of Transportation*, 715 F.2d 732, 743 (2d Cir. 1983)  
an agency will not be permitted to narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered; LBP-07-9, 65 NRC 608 n.96, 637 (2007)
- City of Shoreacres v. Waterworth*, 420 F.3d 440, 450 (5th Cir. 2005)  
the "heart" of the environmental impact statement is the alternatives analysis; LBP-07-9, 65 NRC 603, 631 (2007)
- Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993)  
a hearing requestor must allege a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision; LBP-07-5, 65 NRC 345 (2007)
- Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-84-1, 24 NRC 64, 99 (1986)  
NRC has traditionally read the language "authorized by law" to be the functional equivalent of "not prohibited by law"; LBP-07-6, 65 NRC 464 (2007)
- Combustion Engineering, Inc.* (Hematite Fuel Fabrication Facility), LBP-89-23, 30 NRC 140, 145 (1989)  
one does not acquire standing as a consequence of being a member of a legislative tribunal; LBP-07-5, 65 NRC 351 (2007)
- Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-11, 21 NRC 609, 615 (1985)  
nothing precludes an individual from seeking to intervene both on his/her own behalf and as a representative of others; CLI-07-19, 65 NRC 427 n.17 (2007)
- Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-20, 21 NRC 1732, 1741 (1985)  
consideration of the merits of a contention at the admissibility stage is improper; LBP-07-3, 65 NRC 264 n.8 (2007)
- Commonwealth Edison Co.* (Carroll County Site), ALAB-60-1, 12 NRC 18, 24 (1980)  
a contention is not cognizable unless it is material to matters that fall within the scope of the proceeding for which the licensing board has been delegated jurisdiction; LBP-07-4, 65 NRC 304 (2007)
- Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 623 (1981)  
it is not sufficient to rely on the standing of one petitioner because Commission practice requires each party to separately establish standing; CLI-07-18, 65 NRC 412 (2007)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), ALAB-61-6, 12 NRC 419, 426-27 (1980)  
a contention is not cognizable unless it is material to matters that fall within the scope of the proceeding for which the licensing board has been delegated jurisdiction; LBP-07-4, 65 NRC 304 (2007)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 191 (1999), *petition for review denied*, *Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000)  
a bare allegation that the member of an organization lives 50 miles from a passive structure presents no obvious potential of offsite radiological consequences for purpose of proximity-based standing; CLI-07-21, 65 NRC 522 (2007)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999)  
not all organizations with governmental ties are entitled to participate in NRC proceedings as a local governmental body (county, municipality, or other subdivision); CLI-07-18, 65 NRC 413 (2007)
- Consolidated Edison Co. of New York* (Indian Point, Unit 2), CLI-81-7, 13 NRC 448, 449-50 (1981)  
NRC obeyed its FWPCA duties by deciding to accept as dispositive EPA determinations concerning one aspect of the overall environmental impact; CLI-07-16, 65 NRC 388 (2007)



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- Consolidated Edison Co. of New York* (Indian Point, Units 1 and 2), CLI-01-8, 53 NRC 225, 228, 230-31 (2001)  
applicants are directed to provide petitioners with access to the unredacted version of the license transfer application pursuant to a confidentiality agreement; CLI-07-18, 65 NRC 415 n.53 (2007)
- Consolidated Edison Co. of New York* (Indian Point, Units 1 and 2), CLI-01-8, 53 NRC 225, 228, 231 (2001)  
following release of sensitive information, petitioners must file revised contentions within 20 days; CLI-07-18, 65 NRC 416 (2007)
- Consolidated Edison Co. of New York* (Indian Point, Unit 2), LBP-83-5, 17 NRC 134, 136 (1983)  
although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleadings, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not “fill in” any missing support, but, rather, are legally required to deny the contention; LBP-07-4, 65 NRC 340 n.286 (2007)
- Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-21, 65 NRC 519 (2007)  
petitioners seeking reconsideration of a Commission order must demonstrate that the Commission has committed clear error, must do so by raising new arguments, and must not previously have been able to make those arguments; CLI-07-22, 65 NRC 527 (2005)
- Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-452, 6 NRC 892, 902 (1977)  
joint ventures are common within the nuclear industry and thus merit consideration in the alternatives analysis; LBP-07-9, 65 NRC 634 (2007)
- Curators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 98 (1995)  
NUREGs and regulatory guides serve as guidance, do not prescribe requirements, are not substitutes for regulations, and are not binding authority; LBP-07-6, 65 NRC 440 n.31 (2007)
- Curators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 121 & n.67 (1995)  
NRC hearings on safety issues concern the adequacy of the license application, not the NRC Staff’s work, but NRC hearings on NEPA issues focus entirely on the adequacy of the NRC Staff’s work; CLI-07-17, 65 NRC 395 (2007)
- Curators of the University of Missouri* (TRUMP-S Project), CLI-95-8, 41 NRC 386, 397 (1995)  
regulatory guides and Staff review plans are worth noting, but they do not have the force of law and are not binding on the board’s determination as to whether applicant’s testing program satisfies the legal standards; LBP-07-2, 65 NRC 173 (2007)
- Curators of the University of Missouri* (TRUMP-S Project), LBP-90-30, 32 NRC 95, 103 (1990)  
intervenor may not act as private attorneys-general and raise issues that are of concern to them but do not affect them directly; CLI-07-18, 65 NRC 411 n.35 (2007)
- Department of Transportation v. Public Citizen*, 541 U.S. 752, 754 (2004)  
because the Federal Motor Carrier Safety Administration has no ability to prevent cross-border operations, it lacks the power to act on whatever information might be contained in an EIS and could not act on whatever input the public could provide; CLI-07-16, 65 NRC 387 n.77 (2007)
- Department of Transportation v. Public Citizen*, 541 U.S. 752, 767 (2004)  
a reasonably close causal relationship between federal agency action and environmental consequences is necessary to trigger NEPA; CLI-07-8, 65 NRC 129, 130 (2007)  
NEPA’s causation requirement is analogous to the tort law concept of proximate cause; CLI-07-8, 65 NRC 130 (2007)  
the claimed impact of a terrorist attack is too attenuated to find the proposed federal action of a license renewal to be the proximate cause of that impact; CLI-07-8, 65 NRC 129 (2007)  
the proximate cause test is required for NRC licensing decisions; CLI-07-8, 65 NRC 130 (2007)
- Department of Transportation v. Public Citizen*, 541 U.S. 752, 770 (2004)  
when an agency has no ability to prevent a certain effect due to its limited statutory authority, it cannot be considered a legally relevant cause of the effect; LBP-07-4, 65 NRC 330 n.246 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 217-18 (2003)  
petitioner’s argument that “any increase in dose, no matter the amount, and regardless of whether the change complies with NRC radiological dose requirements, is unacceptable,” amounts to an attack on NRC dosage regulations; LBP-07-3, 65 NRC 266 n.12 (2007)

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- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), LBP-03-12, 58 NRC 75, 83, 93-94, *aff'd*, CLI-03-14, 58 NRC 207 (2003)  
when a contention alleges that increases in radioactive releases create higher doses, but does not provide information or expert opinion to dispute the conclusion that the higher doses would still be under NRC regulatory limits, and no evidence has been presented to show that the higher levels will cause harm, sufficient information to show that a material dispute exists has not been provided and the contention making these claims should not be admitted; LBP-07-3, 65 NRC 266 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-02-27, 56 NRC 367, 371 (2002)  
a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility; LBP-07-3, 65 NRC 269 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001)  
petitioner must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view, and explain why it disagrees with the applicant; LBP-07-4, 65 NRC 306 (2007)  
the contention rule is strict by design, having been toughened in 1989 because in prior years licensing boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation; LBP-07-4, 65 NRC 303 (2007); LBP-07-5, 65 NRC 352 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 364 (2001)  
a contention may not attack a regulation unless the proponent requests a waiver from the Commission; CLI-07-3, 65 NRC 18 n.15 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 636 (2004)  
the Commission does not look with favor on amended or new contentions filed after the initial filing; CLI-07-20, 65 NRC 504 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 637 (2004)  
the Commission regularly affirms board decisions on the admissibility of contentions where the appellant points to no error of law or abuse of discretion; CLI-07-20, 65 NRC 503 n.20 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 560-61 (2005)  
the Commission has specifically excluded emergency planning from license renewal proceedings because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal; LBP-07-4, 65 NRC 336 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 570 (2005)  
licensing boards lack the authority to supervise the NRC Staff in the performance of its nonadjudicatory duties; CLI-07-16, 65 NRC 385 n.69 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), LBP-04-15, 60 NRC 81, 90, *aff'd*, CLI-04-36, 60 NRC 631 (2004)  
the scope of safety and environmental issues relevant to license renewal are discussed; LBP-07-4, 65 NRC 307 (2007)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), LBP-04-15, 60 NRC 81, 93 n.55, *aff'd*, CLI-04-36, 60 NRC 631, 638-39 (2004)  
NRC obeyed its FWPCA duties by deciding to accept as dispositive EPA determinations concerning one aspect of the overall environmental impact; CLI-07-16, 65 NRC 388 (2007)
- Dubois v. U.S. Department of Agriculture*, 102 F.3d 1273, 1290 (1st Cir. 1996)  
in following the rule of reason test, both the applicant and the agency consider all alternatives that are feasible and reasonably apparent at the time of drafting the environmental impact statement; LBP-07-9, 65 NRC 607, 611, 612 (2007)

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- Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-01-13, 53 NRC 478, 480 (2001)  
the Commission has used *sua sponte* review as a vehicle to customize its procedures for individual adjudications; CLI-07-1, 65 NRC 4 (2007)
- Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-01-13, 53 NRC 478, 484-86 (2001)  
the Commission has used *sua sponte* review as a vehicle to set a specific timetable; CLI-07-1, 65 NRC 4 (2007)
- Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-7, 55 NRC 205, 213 (2002)  
the Commission customarily does not entertain interlocutory appeals due in large part to its general unwillingness to engage in piecemeal interference in ongoing licensing board proceedings; CLI-07-1, 65 NRC 3 (2007)
- Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-24, 56 NRC 335, 338-39 (2002)  
a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility; LBP-07-3, 65 NRC 269 (2007)
- Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 422 (2001)  
although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleadings, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not “fill in” any missing support, but, rather, are legally required to deny the contention; LBP-07-4, 65 NRC 340 n.286 (2007)  
if a petitioner neglects to provide the requisite support for its contentions, it is not within the board’s power to make assumptions of fact that favor the petitioner, nor may the board supply information that is lacking; LBP-07-3, 65 NRC 253 (2007)
- Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-6, 59 NRC 62, 67, 74 (2004)  
the Commission has used *sua sponte* review as a vehicle to address unappealed orders or to provide guidance to a licensing board; CLI-07-1, 65 NRC 4 (2007)
- Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-11, 59 NRC 203, 208 (2004)  
appeals of rejected contentions are permitted only where a petitioner claims that the board wrongly rejected all contentions; CLI-07-2, 65 NRC 11 (2007)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-01-20, 54 NRC 211, 214 (2001)  
the evidentiary hearing should not commence until after completion of the final safety evaluation report and final environmental impact statement, unless the licensing board in its discretion finds that starting the hearing with respect to safety issues prior to the issuance of the FSAR will expedite the proceeding without adversely impacting the Staff’s ability to complete its evaluations in a timely manner; CLI-07-17, 65 NRC 395 (2007)
- Duke Energy Corp.* (McGuire Nuclear Energy Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 364 (2002)  
terrorism contentions are, by their very nature, directly related to security and are therefore, under NRC license renewal rules, unrelated to the detrimental effects of aging, and consequently are beyond the scope of, not material to, and inadmissible in, a license renewal proceeding; CLI-07-8, 65 NRC 129 (2007); CLI-07-9, 65 NRC 141 (2007)
- Duke Energy Corp.* (McGuire Nuclear Energy Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 365 (2002)  
as a general matter, NEPA imposes no legal duty on the NRC to consider intentional malevolent acts in conjunction with commercial power reactor license renewal applications because the environmental effect caused by third-party miscreants is simply too far removed from the natural or expected consequences of agency action to require a study under NEPA; CLI-07-8, 65 NRC 129 (2007)  
particularly in the case of a license renewal application, where reactor operation will continue for many years regardless of the Commission’s ultimate decision, it is sensible not to devote resources to the likely impact of terrorism during the license renewal period, but instead to concentrate on

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- how to prevent a terrorist attack in the near term at the already licensed facilities; CLI-07-8, 65 NRC 134 (2007)
- Duke Energy Corp.* (McGuire Nuclear Energy Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382-84 (2002)
- a contention of "omission" that has been cured can be dismissed as moot; CLI-07-8, 65 NRC 127 (2007); CLI-07-11, 65 NRC 150 n.8 (2007)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 363-64 (2002)
- the Commission has specifically excluded emergency planning from license renewal proceedings because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal; LBP-07-4, 65 NRC 336 (2007)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 363-65 (2002)
- the scope of safety and environmental issues relevant to license renewal is discussed; LBP-07-4, 65 NRC 306 (2007)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 365-66 (2002)
- a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility; LBP-07-3, 65 NRC 269 (2007)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 379 (2002)
- although licensing boards generally are to litigate "contentions" rather than "bases," it has been recognized that the reach of a contention necessarily hinges upon its terms coupled with its stated bases; LBP-07-3, 65 NRC 255 (2007)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382-83 (2002)
- when a contention alleges the omission of particular information or an issue from an application, and the information is later supplied by the applicant or considered by the Staff in a draft EIS, the contention is moot; LBP-07-2, 65 NRC 157 n.7 (2007)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 429 (2003)
- petitioners have an obligation to examine the application and publicly available information, and to set forth their claims at the earliest possible moment; CLI-07-18, 65 NRC 413-14 n.46 (2007)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 and 3), CLI-98-17, 48 NRC 123, 125 (1998)
- the scope of safety and environmental issues relevant to license renewal is discussed; LBP-07-4, 65 NRC 307 (2007)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999)
- NRC procedural rules include the need for a petitioner to show at least some minimal factual and legal foundation in order to trigger a full adjudicatory hearing, which must be focused on real disputes susceptible of resolution in an adjudication; LBP-07-4, 65 NRC 340 n.286 (2007)
- the contention rule is strict by design, having been toughened in 1989 because in prior years licensing boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation; LBP-07-4, 65 NRC 303 (2007)
- the strict contention rule serves multiple interests; LBP-07-4, 65 NRC 304 (2007)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 335 (1999)
- threshold admissibility requirements for contentions should not be turned into a fortress to deny intervention; CLI-07-18, 65 NRC 414 (2007)
- Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790-91 (1985)
- a contention is not cognizable unless it is material to matters that fall within the scope of the proceeding for which the licensing board has been delegated jurisdiction; LBP-07-4, 65 NRC 304 (2007)
- all proffered contentions must be within the scope of the proceeding as defined by the Commission in its initial hearing notice and order referring the proceeding to the licensing board; LBP-07-3, 65 NRC 253 (2007)

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- Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 668-69 (1990)  
a provision of a regulation should not be read in a way that is inconsistent with its purpose;  
LBP-07-6, 65 NRC 464 (2007)
- Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 NRC 257, 272-74, 351-59 (2006)  
a detailed summary of relevant case law on contention admissibility is presented; LBP-07-4, 65 NRC 302 n.89 (2007)
- Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 NRC 257, 288, 294-300 (2006)  
new and significant information about a Category 1 issue is not a proper subject for a contention, absent a waiver of section 51.53(c)(3)(i); LBP-07-4, 65 NRC 311 n.134 (2007)
- Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 NRC 257, 323-41 (2006)  
a contention involving certain emergency evacuation issues was admitted because it was in the context of three of the specific input data for the severe accident mitigation alternatives analysis that license renewal applicants are required to perform; LBP-07-4, 65 NRC 336 n.277 (2007)
- Entergy Nuclear Operation Inc.* (Pilgrim Nuclear Power Station), CLI-07-2, 65 NRC 10, 11 (2007)  
if the Commission's supervisory authority constituted grounds for a party's own request for appellate review, there would be no limit to the kinds of arguments parties could legitimately present on appeal, and particularly on interlocutory appeal, a result at odds with the Commission's oft-expressed intent to limit the availability of such appeals; CLI-07-1, 65 NRC 7 (2007)
- Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-06-8, 63 NRC 235, 238 (2006)  
if a board determines after full adjudication that the license amendment should not have been granted, it may be revoked or conditioned; LBP-07-2, 65 NRC 159 (2007)
- Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-07-3, 65 NRC 13, 20 (2007)  
a contention seeking ER analysis of long-term effects of high-density spent fuel pool storage inappropriately challenges rule-based generic environmental findings for reactor life extension proceedings; LBP-07-3, 65 NRC 267-68 (2007)  
only Category-2 environmental issues must be addressed in an Environmental Report and may therefore be litigated at an adjudicatory hearing; CLI-07-16, 65 NRC 390 (2007)  
petitioners seeking to challenge a rule or regulation must first request a waiver or exception to the application of a rule in a particular adjudicatory proceeding; LBP-07-3, 65 NRC 268 (2007)
- Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), LBP-06-5, 63 NRC 116, 125 (2006)  
weighing the affidavits of competing experts is not appropriate at the summary disposition stage; LBP-07-2, 65 NRC 158 (2007)
- Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131, 155-59 (2006)  
new and significant information about a Category 1 issue is not a proper subject for a contention, absent a waiver of section 51.53(c)(3)(i); LBP-07-4, 65 NRC 311 n.134 (2007)
- Envirocare of Utah v. NRC*, 194 F.3d 72 (D.C. Cir. 1999)  
interest in the promotion of economic use of energy falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 411 n.32 (2007)
- Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 681 (7th Cir. 2006)  
a request for judicial review must be brought immediately after a decision is final; CLI-07-13, 65 NRC 214 (2007)
- Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 682 (7th Cir. 2006)  
deferral of the NEPA analysis of the need for power until the combined operating license stage does not violate NEPA; LBP-07-9, 65 NRC 604 (2007)  
reviewing courts must decide a narrow issue as to whether the agency action was arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; LBP-07-9, 65 NRC 602 n.92 (2007)

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- Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 683 (7th Cir. 2006)  
a narrower project goal and subsequently narrower collection of alternatives was approved partly because the applicant was in no position to implement the additional alternatives; LBP-07-9, 65 NRC 608 (2007)  
in reviewing the applicant's process for identifying the best alternative sites that could reasonably be found within the region of interest, the Staff must rigorously explore and exercise skepticism in dealing with the self-serving statements from the primary beneficiary of the project; LBP-07-9, 65 NRC 636 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-04-31, 60 NRC 461, 466 (2004)  
the Commission customarily does not entertain interlocutory appeals due in large part to its general unwillingness to engage in piecemeal interference in ongoing licensing board proceedings; CLI-07-1, 65 NRC 3 (2007)  
the Commission generally disfavors interlocutory, piecemeal appeals; CLI-07-2, 65 NRC 12 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-04-31, 60 NRC 461, 467 (2004)  
claims that a board has wrongly rejected a contention are commonplace and cannot, without more, be said to affect a proceeding's 'basic structure; CLI-07-2, 65 NRC 12 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-04-31, 60 NRC 461, 468 (2004)  
appeals of rejected contentions are permitted only where a petitioner claims that the board wrongly rejected all contentions; CLI-07-2, 65 NRC 11 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5 (2005)  
the procedures to be followed by the licensing board when an application for a construction permit is uncontested are described; LBP-07-6, 65 NRC 437 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 21-22 (2005)  
in uncontested proceedings, boards must narrow their inquiry to those topics or sections in Staff documents that they deem most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-1, 65 NRC 35-36 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 30 (2005)  
on NEPA baseline issues, the board has a special responsibility and the scope of the board's review is significantly different; LBP-07-9, 65 NRC 555 (2007)
- Exelon Generation Co. LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 33 n.32 (2005)  
on AEA Safety Issue 1, the board must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of the early site permit will be inimical to the common defense and security or to the health and safety of the public; LBP-07-9, 65 NRC 556, 598 (2007)  
on AEA Safety Issue 2, the board must decide whether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors having the characteristics that fall within the parameters for the site can be constructed without undue risk to the health and safety of the public; LBP-07-9, 65 NRC 557, 599-600 (2007)
- Exelon Generation Co. LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 35 n.40 (2005)  
although Appendix A to Part 2 was rescinded, the licensing board may still rely on it as an authoritative expression of the Commission's policy; LBP-07-9, 65 NRC 554 n.23 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005)  
in a mandatory hearing, the licensing board's role in evaluating the record and the adequacy of the Staff's review is analogous to that of an appellate court applying the substantial-evidence test; LBP-07-9, 65 NRC 555, 598 (2007)  
in uncontested proceedings, boards should inquire whether the NRC Staff performed an adequate review and make findings with reasonable support in logic and fact; LBP-07-1, 65 NRC 35 (2007); LBP-07-6, 65 NRC 437 (2007)  
mandatory hearings do not involve a *de novo* review of the NRC Staff's findings, but rather whether the safety and environmental record is sufficient to support license issuance; CLI-07-5, 65 NRC 111 n.9 (2007); LBP-07-1, 65 NRC 35 (2007); LBP-07-6, 65 NRC 437 (2007)

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- Exelon Generation Co. LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39-40 (2005)  
Staff's underlying technical and factual findings are not open to board reconsideration unless, after a review of the record, the board finds the NRC Staff review inadequate or its findings insufficient; LBP-07-9, 65 NRC 555 (2007)
- Exelon Generation Co. LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 40 (2005)  
a licensing board's sufficiency review is not to be a rubber stamp, but instead must carefully probe NRC Staff findings by asking appropriate questions and by requiring supplemental information; LBP-07-9, 65 NRC 555 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 45 (2005)  
on NEPA baseline issues, a board must independently determine whether the applicable requirements of NEPA have been complied with and, after considering the final balance among conflicting factors, independently determine whether the license should be issued, denied, or appropriately conditioned to protect the environment; LBP-07-1, 65 NRC 37 (2007); LBP-07-6, 65 NRC 438 (2007); LBP-07-9, 65 NRC 555, 559-60, 598, 614 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 48 (2005)  
at the early site permit stage the boards' reasonable alternatives responsibilities are limited and focus on the consideration and comparison of alternative sites; LBP-07-1, 65 NRC 36 n.14 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP site), CLI-05-29, 62 NRC 801, 808 (2005)  
the contention rule is strict by design; LBP-07-5, 65 NRC 352 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-29, 62 NRC 801, 811 (2005)  
licensing boards do not sit to flyspeck environmental documents or to add details or nuances; LBP-07-3, 65 NRC 266 n.13 (2007)  
there may be mistakes in the draft environmental impact statement, but in an NRC adjudication, it is intervenors' burden to show their significance and materiality; LBP-07-3, 65 NRC 266 n.13 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-06-20, 64 NRC 15, 21 (2006)  
the Commission has used *sua sponte* review as a vehicle to provide guidance to a licensing board; CLI-07-1, 65 NRC 5 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-06-20, 64 NRC 15, 21-22 (2006)  
in uncontested proceedings, boards must narrow their inquiry to those topics or sections in Staff documents that they deem most important and should concentrate on portions of the documents that do not, on their face, adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-6, 65 NRC 437 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203, 205 (2007)  
an initial decision is not effective until the Commission completes its review and takes final agency action; LBP-07-9, 65 NRC 549, 616 (2007)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-06-28, 64 NRC 460, 495 (2006)  
permit condition language precluding "any and all" releases is so broad as to be unachievable as a practical matter and therefore may be unenforceable as a legal matter; CLI-07-14, 65 NRC 218 n.8 (2007)
- Exelon Generation Co., LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 579 & n.4 (2005)  
intervenors may not act as private attorneys-general and raise issues that are of concern to them but do not affect them directly; CLI-07-18, 65 NRC 411 (2007)
- Exelon Generation Co., LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580-81 (2005)  
application of the proximity presumption is determined on a case-by-case basis, considering the obvious potential for offsite radiological consequences, or lack thereof, and taking into account the nature of the proposed action and the significance of the radioactive source; CLI-07-19, 65 NRC 426 (2007); CLI-07-21, 65 NRC 521 (2007)
- Exelon Generation Co., LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580-83 (2005)  
there is no obvious potential for offsite consequences from an ISFSI transfer sufficient to justify applying a presumption of standing based on proximity; CLI-07-19, 65 NRC 426 (2007)

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- Exelon Generation Co., LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 582 (2005)  
proximity-based standing in license transfer proceedings has been denied to petitioners residing within 40 miles; CLI-07-21, 65 NRC 523 (2007)
- Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)  
allegations of unaccounted costs are no more than bare assertions and fail to provide the required supporting facts or expert opinion; LBP-07-5, 65 NRC 348 (2007)  
neither mere speculation nor bare or conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention; LBP-07-3, 65 NRC 253 (2007)
- Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 204-05 (2003)  
simply attaching material or documents as a basis for a contention, without setting forth an explanation of that information's significance, is inadequate to support the admission of the contention; LBP-07-3, 65 NRC 254 (2007)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 2), ALAB-435, 6 NRC 541 (1977)  
once an adequate alternatives analysis is done, the applicant's proposed site will be rejected only when an alternative site is obviously superior; LBP-07-9, 65 NRC 591 (2007)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989)  
an individual may satisfy the standing requirements by demonstrating that his or her residence is within the geographical area that might be affected by an accidental release of fission products, and in proceedings involving nuclear power plants this area has been defined as being within a 50-mile radius of such a plant; CLI-07-19, 65 NRC 426 (2007); LBP-07-3, 65 NRC 249-50 (2007); LBP-07-4, 65 NRC 294 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 528, *aff'd in relevant part*, CLI-91-13, 34 NRC 185, 187-88 (1991)  
organizations seeking to intervene in their own right must satisfy the same standing requirements as individuals seeking to intervene; CLI-07-18, 65 NRC 411 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 530, *aff'd*, CLI-91-13, 34 NRC 185 (1991)  
nothing precludes an individual from seeking to intervene both on his/her own behalf and as a representative of others; CLI-07-19, 65 NRC 427 n.17 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-00-23, 52 NRC 327, 329 (2000)  
all proffered contentions must be within the scope of the proceeding as defined by the Commission in its initial hearing notice and order referring the proceeding to the licensing board; LBP-07-3, 65 NRC 253 (2007)  
the scope of safety and environmental issues relevant to license renewal is discussed; LBP-07-4, 65 NRC 307 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3 (2001)  
challenges to findings in a generic environmental impact statement are not admissible absent a waiver of the NRC's generic finding or a successful petition for rulemaking; CLI-07-3, 65 NRC 16 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 6-13 (2001)  
the scope of safety and environmental issues relevant to license renewal is discussed; LBP-07-4, 65 NRC 306 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 7 (2001)  
in developing 10 C.F.R. Part 54, the Commission sought to develop a process that would be both efficient, avoiding duplicative assessments where possible, and effective, allowing the NRC Staff to focus its resources on the most significant safety concerns at issue during the renewal term; LBP-07-4, 65 NRC 307 (2007)  
issues and concerns involved in an extended 20 years of operation are not identical to the issues reviewed when a reactor facility is first built and licensed; LBP-07-4, 65 NRC 308 (2007)



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- requiring a full reassessment of safety issues that were thoroughly reviewed when the facility was first licensed and continue to be routinely monitored and assessed by ongoing agency oversight and agency-mandated licensee programs would be both unnecessary and wasteful; LBP-07-4, 65 NRC 308 (2007)
- the detrimental effects of aging and related time-limited issues are described; LBP-07-4, 65 NRC 309 (2007)
- the NRC license renewal safety review focuses upon those potential detrimental effects of aging that are not routinely addressed by ongoing regulatory oversight programs; LBP-07-4, 65 NRC 308 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 7-8, 21-23 (2001)
- a license renewal proceeding focuses on those detrimental effects of aging that are not addressed as a matter of ongoing agency oversight and enforcement; CLI-07-3, 65 NRC 20 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 9 (2001)
- it is unnecessary or inappropriate to throw open the full gamut of provisions in a plant's current licensing basis to re-analysis during the license renewal review; LBP-07-4, 65 NRC 308 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 9-10 (2001)
- emergency planning is excluded from license renewal proceedings because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal; LBP-07-4, 65 NRC 336 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 10 (2001)
- the focus of license renewal review is on plant systems, structures, and components for which current regulatory activities and requirements may not be sufficient to manage the effects of aging in the period of extended operation; LBP-07-4, 65 NRC 309 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 10 n.2 (2001)
- an issue can be related to plant aging and still not warrant review at the time of a license renewal application, if an aging-related issue is adequately dealt with by regulatory processes on an ongoing basis; LBP-07-4, 65 NRC 309 (2007)
- if a structure or component is already required to be replaced at mandated, specified time periods, it would fall outside the scope of license renewal review; LBP-07-4, 65 NRC 309 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 11 (2001)
- Category 1 issues involve environmental effects that are essentially similar for all plants, and thus they need not be assessed repeatedly on a site-specific basis, plant-by-plant; LBP-07-4, 65 NRC 311 (2007)
- Category 2, or plant specific, issues involve environmental impact severity levels that might differ significantly from one plant to another, or impacts for which additional plant-specific mitigation measures should be considered; LBP-07-4, 65 NRC 311 (2007)
- issues on which the Commission can draw generic conclusions applicable to all existing nuclear power plants, or to a specific subgroup of plants are identified as "Category 1" issues; LBP-07-4, 65 NRC 311 (2007)
- license renewal applicants must address environmental issues for which the Commission was not able to make generic environmental findings; LBP-07-4, 65 NRC 311 (2007)
- the generic environmental impact statement for license renewal was part of an amendment of the requirements of Part 51 undertaken by the Commission to establish environmental review requirements for license renewals that were both efficient and more effectively focused; LBP-07-4, 65 NRC 311 (2007)

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- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 11-13 (2001)  
the opportunity and procedures for presenting new and significant information that could undermine the findings in the GEIS, including asking for a rule waiver or filing a petition for rulemaking to change the GEIS finding, are outlined; CLI-07-3, 65 NRC 20 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 12 (2001)  
if petitioner believes there is reason to depart from the license renewal generic environmental impact statement and related regulations, its remedy is a petition for rulemaking to modify our rules or a petition for a waiver of our rules based on special circumstances; CLI-07-8, 65 NRC 133 (2007)  
new and significant information about a Category 1 issue is not a proper subject for a contention, absent a waiver of section 51.53(c)(3)(i); LBP-07-4, 65 NRC 311 n.134 (2007)  
Staff's supplemental environmental impact statement is specific to the particular site involved and provides the Staff's independent assessment of the applicant's environmental report; LBP-07-4, 65 NRC 312 (2007)  
the impact of extended operation on endangered or threatened species varies from one location to another, and is thus included within Category 2; LBP-07-4, 65 NRC 312 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 15 (2001)  
*pro se* litigants are not exempt from our contention pleading requirements; CLI-07-20, 65 NRC 502 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 19 (2001)  
only Category-2 environmental issues must be addressed in an environmental report and may therefore be litigated at an adjudicatory hearing; CLI-07-16, 65 NRC 390 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 21-22 (2001)  
no discussion of mitigation alternatives is needed in a license renewal application for a Category 1 issue; CLI-07-3, 65 NRC 21 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 22 (2001)  
for all issues designated as Category 1, the Commission has concluded that (generally) additional site-specific mitigation alternatives are unlikely to be beneficial; CLI-07-3, 65 NRC 21 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-90-16, 31 NRC 509, 521 & n.12 (1990)  
an allegation that some aspect of a license application is "inadequate" or "unacceptable" does not give rise to a genuine dispute unless it is supported by facts and a reasoned statement of why the application is unacceptable in some material respect; LBP-07-4, 65 NRC 306 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 146, 148 (2001), *aff'd on other grounds*, CLI-01-17, 54 NRC 3 (2001)  
for proximity-based standing, frequency of contact must reflect regular interaction with the zone of harm, not merely occasional contact; CLI-07-21, 65 NRC 524 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 146-50 (2001)  
an individual may satisfy the standing requirements by demonstrating that his or her residence is within the geographical area that might be affected by an accidental release of fission products, and in proceedings involving nuclear power plants this area has been defined as being within a 50-mile radius of such a plant; LBP-07-4, 65 NRC 294 (2007)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 159 (2001)  
contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking are inadmissible; LBP-07-3, 65 NRC 252 (2007)

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- Friends of the Earth v. Hintz*, 800 F.2d 822, 833 (9th Cir. 1986)  
agencies are not required to conduct a further study of alternatives or to independently find possible sites overlooked by the applicant; LBP-07-9, 65 NRC 609 (2007)
- General Electric Co.* (GE Test Reactor, Vallecitos Nuclear Center), LBP-79-28, 10 NRC 578, 582-83 (1979)  
one does not acquire standing as a consequence of being a member of a legislative tribunal;  
LBP-07-5, 65 NRC 351 (2007)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-10, 42 NRC 1, 3 (1995)  
petitioners are precluded from using discovery as a device to uncover additional information supporting the admissibility of contentions; CLI-07-18, 65 NRC 416 (2007)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995)  
in assessing a petition to determine whether the elements for standing are met, boards are to construe the petition in favor of the petitioner; LBP-07-3, 65 NRC 250 (2007)  
when determining whether a petitioner has established the necessary "interest" under Commission rules, licensing boards are to look to judicial concepts of standing for guidance; LBP-07-4, 65 NRC 293 (2007)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305, *vacated in part and remanded on other grounds*, CLI-95-10, 42 NRC 1, *and aff'd in part*, CLI-95-12, 42 NRC 111 (1995)  
a board cannot be expected to sift through reams of data to determine whether a contention is admissible; LBP-07-3, 65 NRC 262-63 n.6 (2007)  
although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleadings, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not "fill in" any missing support, but, rather, are legally required to deny the contention; LBP-07-4, 65 NRC 340 n.286 (2007)  
if a petitioner neglects to provide the requisite support for its contentions, it is not within the board's power to make assumptions of fact that favor the petitioner, nor may the board supply information that is lacking; LBP-07-3, 65 NRC 253 (2007)  
it is the petitioner's obligation to present factual information and/or expert opinion necessary to support its contention; LBP-07-3, 65 NRC 253 (2007)
- Georgia Power Co.* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-18, 10 NRC 617, 619-20 (1979)  
joint ventures are common within the nuclear industry and thus merit consideration in the alternatives analysis; LBP-07-9, 65 NRC 634 (2007)
- Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), CLI-93-16, 38 NRC 25, 35 (1993)  
significant contacts with an affected area can be sufficient to establish standing, even when full-time residence within the 50-mile zone is not shown; LBP-07-4, 65 NRC 296 (2007)
- Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), LBP-93-5, 37 NRC 96, *aff'd*, CLI-93-16, 38 NRC 25 (1993)  
in a license transfer proceeding, standing was granted to a petitioner living within 35 miles of the licensed facility; CLI-07-21, 65 NRC 521 (2007)
- GPU Nuclear Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000)  
for an organization to qualify for the proximity presumption, a bare assertion that a member lives within 50 miles is not sufficient; LBP-07-4, 65 NRC 296 (2007)  
to establish representational standing, an organization must show that at least one of its members may be affected by the licensing action and, accordingly, would have standing to sue in his or her own right, must identify that member by name and address, and must show that the organization is authorized to request a hearing on behalf of that member; CLI-07-18, 65 NRC 409 (2007); LBP-07-4, 65 NRC 294 (2007)
- GPU Nuclear Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 211 (2000)  
if applicants and petitioners cannot agree on the terms of a confidentiality and nondisclosure agreement, then they shall inform the presiding officer, indicate specifically the areas where they disagree, and then move the presiding officer for issuance of a protective order; CLI-07-18, 65 NRC 416 (2007)

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- Ground Zero Center for Non-Violent Action v. U.S. Department of the Navy*, 383 F.3d 1082, 1090 (9th Cir. 2004)  
NRC's decision to use its Atomic Energy Act authority to require all of its power reactor licensees to take precautionary measures against improbable, but potentially destructive, terrorist attacks does not compel the agency to analyze the consequences of successful attacks at particular sites under NEPA; CLI-07-8, 65 NRC 131 n.31 (2007)
- Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 226 (1974)  
proximity standing has been recognized where a petitioner engages in normal, everyday activities in the vicinity of a facility; CLI-07-21, 65 NRC 524 (2007)
- Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49, 59 (1987)  
a provision of a regulation should not be read in a way that is inconsistent with its purpose; LBP-07-6, 65 NRC 464 (2007)
- Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 389-90, *reconsideration denied*, ALAB-539, 9 NRC 422 (1979)  
if an organization does not identify the members it purportedly represents, the Commission cannot determine whether the organization actually does represent members who consider that they will be affected by the licensing action or, rather, is simply seeking the vindication of its own value preference; CLI-07-18, 65 NRC 410 (2007)
- Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 396, *reconsideration denied*, ALAB-539, 9 NRC 422 (1979)  
without written authorization for representation, the Commission would have no concrete indication that, in fact, the member wishes to have the organization represent its interests in the proceeding; CLI-07-18, 65 NRC 410 (2007)
- Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-544, 9 NRC 630 (1979)  
if an organization does not identify the members it purportedly represents, the Commission cannot determine whether the organization actually does represent members who consider that they will be affected by the licensing action or, rather, is simply seeking the vindication of its own value preference; CLI-07-18, 65 NRC 410 (2007)
- Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-98-9, 47 NRC 326, 332 (1998)  
the Commission has used *sua sponte* review as a vehicle to decide whether to disqualify a presiding officer; CLI-07-1, 65 NRC 4 (2007)
- Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-98-16, 48 NRC 119, 120 (1998)  
the Commission has used *sua sponte* review as a vehicle to provide guidance to a licensing board; CLI-07-1, 65 NRC 5 (2007)
- Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-1, 49 NRC 1, 2 (1999)  
the Commission has used *sua sponte* review as a vehicle to address unappealed orders or to set a specific timetable; CLI-07-1, 65 NRC 4 (2007)
- Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-18, 49 NRC 411, 412 (1999)  
the Commission has used *sua sponte* review as a vehicle to customize its procedures for individual adjudications; CLI-07-1, 65 NRC 4 (2007)
- Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 54 (2001)  
the ER discussion of the no-action alternative can be brief and can incorporate by reference other sections of the ER discussing the project's adverse consequences; LBP-07-3, 65 NRC 259 (2007)
- Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 55 (2001)  
agencies need only discuss those alternatives that are reasonable and will bring about the ends of the proposed action; LBP-07-9, 65 NRC 603 (2007)  
an agency must be guided by an applicant's goals, including economic goals, in its environmental impact statement; LBP-07-9, 65 NRC 608, 611 (2007)

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- it is not the Staff's job to either change the applicant's project goals or search independently for alternatives in addition to the reasonable ones submitted by the applicant; LBP-07-9, 65 NRC 611 (2007)
- when reviewing a discrete license application filed by a private applicant, a federal agency may appropriately accord substantial weight to the preferences of the applicant and/or sponsor in the siting and design of the project; LBP-07-9, 65 NRC 608 (2007)
- International Uranium (USA) Corp.* (Receipt of Material from Tonawanda, New York), LBP-98-21, 48 NRC 137, 142 n.7 (1998)
- a board cannot be expected to sift through reams of data to determine whether a contention is admissible; LBP-07-3, 65 NRC 263 n.6 (2007)
- International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001)
- general policy interests alone are not sufficient to establish organizational standing, but rather, a petitioner seeking to show standing in this way must demonstrate a discrete institutional injury to the organization itself; CLI-07-18, 65 NRC 412 (2007); LBP-07-4, 65 NRC 296 (2007)
- Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), CLI-99-5, 49 NRC 199, 200 (1999)
- the Commission has used *sua sponte* review as a vehicle to address unappealed issues; CLI-07-1, 65 NRC 4 (2007)
- Kelley v. Selin*, 42 F.3d 1501, 1508 (6th Cir. 1995)
- to qualify for standing, a petitioner must allege a concrete and particularized injury that is fairly traceable to the challenged action and likely to be redressed by a favorable decision; LBP-07-4, 65 NRC 294 (2007)
- Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976)
- NRC is required to take a hard look at the potential environmental impacts of a license renewal; CLI-07-16, 65 NRC 376 (2007)
- Limerick Ecology Action v. NRC*, 869 F.2d 719, 743-44 (3d Cir. 1989)
- substantial practical difficulties impede meaningful NEPA-terrorism review; CLI-07-8, 65 NRC 131 n.29 (2007)
- Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-88-9, 28 NRC 567, 569 (1988)
- the Commission has the authority to enter case-specific procedural orders to facilitate the efficient resolution of issues before a licensing board; LBP-07-3, 65 NRC 277 (2007)
- Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-88-9, 28 NRC 567, 569-71 (1988)
- the Commission has used *sua sponte* review as a vehicle to set a specific timetable; CLI-07-1, 65 NRC 4 (2007)
- Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), DD-90-8, 32 NRC 469, 488 (1990)
- NRC has traditionally read the language "authorized by law" to be the functional equivalent of "not prohibited by law"; LBP-07-6, 65 NRC 464 (2007)
- Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 89 (1998)
- NRC hearings on safety issues concern the adequacy of the license application, not the NRC Staff's work, but NRC hearings on NEPA issues focus entirely on the adequacy of the NRC Staff's work; CLI-07-17, 65 NRC 395 (2007)
- Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 98 (1998)
- the environmental report discussion of the no-action alternative can be brief and can incorporate by reference other sections of the ER discussing the project's adverse consequences; LBP-07-3, 65 NRC 259-60 (2007)
- Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 100, 107-08 (1998)
- environmental justice contentions must be based on the specific characteristics of a particular minority community; LBP-07-3, 65 NRC 263 (2007)
- Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 106 (1998)
- adverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny; LBP-07-3, 65 NRC 262 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-3, 59 NRC 10, 16 (2004)
- the Commission will endeavor to identify efficiencies, and provide pertinent resources, to further reduce the time the agency needs to complete reviews and reach decisions in licensing uranium enrichment facilities; CLI-07-17, 65 NRC 397 (2007)

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- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-3, 59 NRC 10, 16-21 (2004)  
the Commission has the authority to enter case-specific procedural orders to facilitate the efficient resolution of issues before a licensing board; LBP-07-3, 65 NRC 277 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-3, 59 NRC 10, 17 (2004)  
the board may start the evidentiary hearing without the final EIS or SER; LBP-07-3, 65 NRC 278 (2007)  
threshold environmental legal and policy issues need not await issuance of the final environmental impact statement; CLI-07-17, 65 NRC 396 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-25, 60 NRC 223, 224,  
*reconsideration denied*, CLI-04-35, 60 NRC 619 (2004)  
although a board will take into account any information from reply briefs that legitimately amplifies issues presented in original petitions, it will not consider instances of what essentially constitute untimely attempts to amend the original petitions; LBP-07-4, 65 NRC 301 (2007)  
because new or amended issues in reply briefs were not accompanied by any attempt to address the late- and new-filing factors of section 2.309(c), (f)(2), they were not considered in determining the admissibility of the contentions; LBP-07-4, 65 NRC 301 (2007)  
the licensing board declined to consider new, purportedly material information in support of the contentions that was first submitted as part of a reply pleading; LBP-07-4, 65 NRC 299 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-25, 60 NRC 223, 225,  
*reconsideration denied*, CLI-04-35, 60 NRC 619 (2004)  
a petitioner may in instances of exigent or unavoidable circumstances file a request for an extension of time to file an original hearing petition and contentions; LBP-07-4, 65 NRC 301 n.83 (2007)  
a reply to an answer may not be used as a vehicle to raise new arguments or claims not found in the original contention or be used to cure an otherwise deficient contention; LBP-07-4, 65 NRC 299 (2007)  
it is appropriate for a reply to respond to the legal, logical, and factual arguments presented in the answers, so long as new issues are not raised; LBP-07-4, 65 NRC 302 n.87 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 623 (2004)  
a petitioner may in instances of exigent or unavoidable circumstances file a request for an extension of time to file an original hearing petition and contentions; LBP-07-4, 65 NRC 301 n.83 (2007)  
NRC rules do not allow use of reply briefs to provide, for the first time, the necessary threshold support for contentions; LBP-07-4, 65 NRC 300 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 625 (2004)  
although a board will take into account any information from reply briefs that legitimately amplifies issues presented in original petitions, it will not consider instances of what essentially constitute untimely attempts to amend the original petitions; LBP-07-4, 65 NRC 301 n.83 (2007)  
the Commission remanded to the licensing board a request to consider several previously rejected contentions under the late- and new-filing criteria of 10 C.F.R. 2.309(c), (f)(2), despite the fact that the petitioner had addressed such criteria for the first time only in its interlocutory appeal to the Commission; LBP-07-4, 65 NRC 301 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 626-27 (2004)  
a state may participate either as an interested governmental entity or as a party with its own contentions, but not both; CLI-07-13, 65 NRC 215 n.16 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-5, 61 NRC 22, 34-35 (2005)  
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- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-06-15, 63 NRC 687, 707 n.91 (2006)  
any board merits litigation-based findings have the effect of amending or supplementing the final environmental impact statement; LBP-07-3, 65 NRC 277 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-06-22, 64 NRC 37, 39 & n.8 (2006)  
the decommissioning funding required for the most costly component, disposition of depleted uranium tails, is predicated on transferring DU to DOE, which is a plausible strategy allowed by statute; LBP-07-6, 65 NRC 453 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-04-14, 60 NRC 40, 56 (2004)  
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- Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-04-14, 60 NRC 40, 58 (2004)  
because new or amended issues in reply briefs were not accompanied by any attempt to address the late- and new-filing factors of section 2.309(c), (f)(2), they were not considered in determining the admissibility of the contentions; LBP-07-4, 65 NRC 301 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 395-96 (2005)  
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- Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 396 n.1 (2005)  
the licensing board proceeded to litigate the merits of environmental contentions based on the draft environmental impact statement, instead of awaiting the final EIS; LBP-07-3, 65 NRC 277 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-06-8, 63 NRC 241, *aff'd*, CLI-06-15, 63 NRC 687 (2006)  
disposal of large quantities of depleted uranium at the EnergySolutions site is consistent with the performance objectives in the NRC regulations, and environmental impacts will be small; LBP-07-6, 65 NRC 475 (2007)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-06-17, 63 NRC 747 (2006)  
this proceeding, although contested, was completed within 30 months, including the mandatory hearing; CLI-07-5, 65 NRC 111 n.9 (2007)
- Lujan v. Defenders of Wildlife*, 504 U.S. 555, 561 (1992)  
a hearing requestor must allege a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision; LBP-07-5, 65 NRC 345 (2007)
- Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), LBP-82-4, 15 NRC 199, 204 (1982)  
proximity standing has been recognized where a petitioner has regular contact in the vicinity of the facility; CLI-07-21, 65 NRC 524 (2007)
- Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), LBP-82-4, 15 NRC 199, 204 n.7 (1982)  
proximity standing has been recognized at close distances where a petitioner frequently engages in substantial business and related activities in the vicinity of the facility; CLI-07-21, 65 NRC 524 (2007)
- Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989)  
NRC may not permit construction or operation of new reactors unless and until it has taken into account any changed circumstances and new and significant information; LBP-07-3, 65 NRC 267 (2007)
- Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989)  
by focusing government and public attention on the environmental effects of proposed agency action, NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to be corrected; LBP-07-4, 65 NRC 310 n.125 (2007)
- Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 772-75 (1983)  
a reasonably close causal relationship between federal agency action and environmental consequences is necessary to trigger NEPA; CLI-07-8, 65 NRC 129 (2007)  
the claimed impact of a terrorist attack is too attenuated to find the proposed federal action of a license renewal to be the proximate cause of that impact; CLI-07-8, 65 NRC 129 (2007)
- Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 773-74 (1983)  
the effects that must be considered in an environmental impact statement are those that are caused by the action and there must be a reasonably close causal relationship between the proposed action and an alleged environmental effect or impact before that effect need be considered; LBP-07-4, 65 NRC 330 n.246 (2007)
- Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)  
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- Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 776 (1983)  
the scope of the agency's consideration of alternatives must remain manageable if NEPA's goal of ensuring a fully informed and well-considered decision is to be accomplished; LBP-07-9, 65 NRC 607 n.94 (2007)
- Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983)  
an organization's promotion of the public interest, environmental protection, and consumer protection are broad interests shared with many others and too general to constitute a protected interest under the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 411 n.33 (2007)  
interest in the promotion of economic use of energy falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 411 n.32 (2007)
- National Whistleblower Center v. NRC*, 208 F.3d 256, 262-63 (2000); *City of West Chicago v. NRC*, 701 F.2d 632, 647 (1983)  
the Commission has the authority to enter case-specific procedural orders to facilitate the efficient resolution of issues before the board; CLI-07-17, 65 NRC 397 (2007)
- Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 838 (1972)  
NRC is required to take a hard look at the potential environmental impacts of a license renewal; CLI-07-16, 65 NRC 376 (2007)
- New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 98 (1st Cir. 1978)  
except for its overall NEPA balancing, the NRC can limit its analysis of aquatic impacts to those determined by the EPA; LBP-07-3, 65 NRC 260 (2007)  
NRC obeyed its FWPCA duties by deciding to accept as dispositive EPA determinations concerning one aspect of the overall environmental impact; CLI-07-16, 65 NRC 388 (2007)
- New York v. Kleppe*, 429 U.S. 1307, 1311 (1974)  
NEPA requires only a discussion of reasonably foreseeable impacts and its application is subject to the rule of reason; LBP-07-9, 65 NRC 603 (2007)
- Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), CLI-73-28, 6 AEC 995 (1973)  
the Commission has used *sua sponte* review as a vehicle to address unappealed orders; CLI-07-1, 65 NRC 4 (2007)
- Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Units 1 and 2), CLI-99-30, 50 NRC 333, 340-41 & n.5 (1999)  
to demonstrate standing in a license transfer proceeding, the petitioner must identify an interest in the proceeding and specify the facts pertaining to that interest; CLI-07-18, 65 NRC 409 (2007)
- Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Units 1 and 2), CLI-99-30, 50 NRC 333, 342 (1999)  
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- North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-98-18, 48 NRC 129, 130 (1998)  
the Commission has used *sua sponte* review as a vehicle to address unappealed orders or an issue of wide implication; CLI-07-1, 65 NRC 4 (2007)
- North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 219 (1999)  
the contention rule is strict by design and does not permit the filing of a vague, unparticularized contention, unsupported by affidavit, expert, or documentary support; LBP-07-5, 65 NRC 352 (2007)
- North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 225 (1999)  
if applicants and petitioners cannot agree on the terms of a confidentiality and nondisclosure agreement, then they shall inform the presiding officer, indicate specifically the areas where they disagree, and then move the presiding officer for issuance of a protective order; CLI-07-18, 65 NRC 416 (2007)
- North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-27, 50 NRC 257, 268 (1999)  
if applicants and petitioners cannot agree on the terms of a confidentiality and nondisclosure agreement, then they shall inform the presiding officer, indicate specifically the areas where they disagree, and then move the presiding officer for issuance of a protective order; CLI-07-18, 65 NRC 416 (2007)



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- Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Units 1, 2, and 3), CLI-00-18, 52 NRC 129, 132 (2000)  
there is no obvious potential for offsite consequences from an ISFSI transfer sufficient to justify applying a presumption of standing based on proximity; CLI-07-19, 65 NRC 426 (2007)
- Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Units 1, 2, and 3), CLI-00-18, 52 NRC 129, 132-33 (2000)  
proximity-based standing in license transfer proceedings has been denied to petitioners residing within 5-10 miles; CLI-07-21, 65 NRC 523 (2007)
- Northern States Power Co.* (Pathfinder Atomic Plant), LBP-89-30, 30 NRC 311, 316 (1989)  
it would be detrimental to the process to have a person appear in a proceeding individually and to be represented by an organization; CLI-07-19, 65 NRC 426 n.17 (2007)
- Nuclear Management Co., LLC* (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 754 (2005)  
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- Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006)  
replies must focus narrowly on the legal or factual arguments first presented in the original petition or raised in the answers to it; LBP-07-4, 65 NRC 302 n.87 (2007)
- Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-07-9, 65 NRC 139, 141-42 (2007)  
a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility; LBP-07-3, 65 NRC 269 (2007)
- Ohio Edison Co.* (Perry Nuclear Power Plant, Unit 1), CLI-91-15, 34 NRC 269, 271 (1991), *reconsidered* denied, CLI-92-6, 35 NRC 86, 88 (1992)  
the Commission has used *sua sponte* review as a vehicle to suspend a proceeding; CLI-07-1, 65 NRC 4 (2007)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-02-16, 55 NRC 317, 336-37 (2002)  
not all organizations with governmental ties are entitled to participate in NRC proceedings as a local governmental body (county, municipality, or other subdivision); CLI-07-18, 65 NRC 413 (2007)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-93-1, 37 NRC 5, 29-30 (1993)  
contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking are inadmissible; LBP-07-3, 65 NRC 252 (2007)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006)  
to succeed, a petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid; CLI-07-21, 65 NRC 521 (2007); CLI-07-22, 65 NRC 527 (2005)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 402 (2006)  
new arguments may not be raised in a motion for reconsideration; CLI-07-22, 65 NRC 527 (2005)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), LBP-02-23, 56 NRC 413, 439-41 (2002), *petition for review denied*, CLI-03-12, 58 NRC 185, 191 (2003)  
the materiality requirement often dictates that any contention alleging deficiencies or errors in an application also indicate some significant link between the claimed deficiency and either the health and safety of the public or the environment; LBP-07-3, 65 NRC 254 (2007)
- Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Unit 3), ALAB-532, 9 NRC 279 (1979)  
NRC may not undercut EPA by undertaking its own analyses and reaching its own conclusions on water quality issues already decided by EPA; CLI-07-16, 65 NRC 388 (2007)
- Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Unit 3), ALAB-532, 9 NRC 279, 283 (1979)  
NRC abstinence from setting water quality standards is fully consistent with congressional general intent that the Clean Water Act is to be implemented in a way that will avoid needless duplication and unnecessary delays at all levels of government; CLI-07-16, 65 NRC 389 (2007)

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- Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20, *aff'd in part on other grounds*, CLI-74-32, 8 AEC 217 (1974)  
an adjudication is not the proper forum for challenging applicable statutory requirements or the basic structure of the agency's regulatory process; LBP-07-3, 65 NRC 252 (2007)  
any contention that amounts to an attack on applicable statutory requirements must be rejected by a licensing board as outside the scope of the proceeding; LBP-07-4, 65 NRC 305 (2007)
- Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974), *rev'd in part*, CLI-74-32, 8 AEC 217 (1974), *rev'd in part*, *York Committee for a Safe Environment v. NRC*, 527 F.2d 812 (D.C. Cir. 1975)  
threshold admissibility requirements for contentions should not be turned into a fortress to deny intervention; CLI-07-18, 65 NRC 414 (2007)
- Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 & n.33, *aff'd in part on other grounds*, CLI-74-32, 8 AEC 217 (1974)  
a contention that simply states the petitioner's views about what regulatory policy should be does not present a litigable issue; LBP-07-3, 65 NRC 253 (2007)  
Commission regulations are not open to challenge in NRC adjudicatory proceedings; LBP-07-5, 65 NRC 361 (2007)
- Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 292 (2000)  
an intervention petitioner must also raise at least one admissible contention; CLI-07-18, 65 NRC 408 (2007)  
applicants are directed to provide petitioners with access to the unredacted version of the license transfer application pursuant to a confidentiality agreement; CLI-07-18, 65 NRC 415 n.53 (2007)
- Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 293 (2000)  
any organization seeking representational standing must also show that at least one of its members may be affected by the Commission's approval of the transfer, must identify that member, and must demonstrate that the member has (preferably by affidavit) authorized the organization to represent him or her and to request a hearing on his or her behalf; CLI-07-18, 65 NRC 409 (2007)  
to demonstrate standing in a license transfer proceeding, the petitioner must identify an interest in the proceeding and specify the facts pertaining to that interest; CLI-07-18, 65 NRC 409 (2007)
- Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 295 (2000)  
contentions must meet five admissibility standards in license transfer proceedings; CLI-07-18, 65 NRC 414 (2007)  
the Commission will not accept the filing of a vague, unparticularized contention, unsupported by alleged fact or expert opinion and documentary support; CLI-07-18, 65 NRC 414 (2007)  
threshold admissibility requirements for contentions should not be turned into a fortress to deny intervention; CLI-07-18, 65 NRC 414 (2007)
- Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 296-319 (2000)  
the Commission may decide the admissibility of late-filed contentions based on previously unavailable information or defer ruling on them, considering the need for access to redacted information and other relevant factors; CLI-07-18, 65 NRC 414 n.46 (2007)
- Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 300 (2000)  
following release of sensitive information, petitioners must file revised contentions within 20 days; CLI-07-18, 65 NRC 416 (2007)
- Port Authority of the State of New York* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 300 n.23 (2000)  
when critical information has been submitted to the NRC under a claim of confidentiality and was not available to petitioners when framing their issues, it is appropriate to defer ruling on the admissibility of an issue until the petitioner has had an opportunity to review this information and submit a properly documented issue; CLI-07-18, 65 NRC 413 n.46 (2007)

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- Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), ALAB-333, 3 NRC 804, 806 n.6 (1976)  
intervenor may not act as private attorneys-general and raise issues that are of concern to them but do not affect them directly; CLI-07-18, 65 NRC 411 (2007)
- Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979)  
any contention that falls outside the specified scope of the proceeding must be rejected; LBP-07-3, 65 NRC 253 (2007)
- Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85, 89 (1974)  
a contention that attacks a Commission rule, or that seeks to litigate a matter that is, or clearly is about to become, the subject of a rulemaking, is inadmissible; LBP-07-3, 65 NRC 252 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-98-13, 48 NRC 26, 31-32 (1998)  
significant contacts with an affected area can be sufficient to establish standing, even when full-time residence within the 50-mile zone is not shown; LBP-07-4, 65 NRC 296 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-98-13, 48 NRC 26, 32 (1998), *petition for review docketed*, No. 05-1419 (D.C. Cir. Nov. 7, 2005)  
proximity standing has been recognized where a petitioner has regular contact in an area near a licensed facility, or otherwise has visits of a length and nature showing an ongoing connection and presence; CLI-07-21, 65 NRC 524 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999), and CLI-98-13, 48 NRC 26, 30-31 (1998), *petition for review filed sub nom. Ohngo Gaudadeh Devia v. NRC*, No. 05-1419 (D.C. Cir. Nov. 7, 2005)  
neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-07-18, 65 NRC 409 (2007)  
the interests that the representative organization seeks to protect must be germane to its own purpose; CLI-07-18, 65 NRC 409 (2007)  
the member of a petitioning organization seeking representation must qualify for standing in his or her own right; CLI-07-18, 65 NRC 409 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323-25 (1999)  
significant contacts with an affected area can be sufficient to establish standing, even when full-time residence within the 50-mile zone is not shown; LBP-07-4, 65 NRC 296 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 324 (1999)  
proximity standing has been recognized where a petitioner has regular contact in an area near a licensed facility, or otherwise has visits of a length and nature showing an ongoing connection and presence; CLI-07-21, 65 NRC 524 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999)  
failure of a contention to meet any of the pleading requirements of section 2.309(f)(1) is grounds for its dismissal; LBP-07-3, 65 NRC 252 (2007); LBP-07-4, 65 NRC 303 (2007); LBP-07-7, 65 NRC 512 (2007)  
full compliance with the Commission's Rules of Practice is a condition precedent to the grant of a request for hearing on a materials license amendment; LBP-07-5, 65 NRC 344 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-21, 52 NRC 261, 265 (2000)  
the Commission regularly affirms board decisions on the admissibility of contentions where the appellant points to no error of law or abuse of discretion; CLI-07-20, 65 NRC 503 n.20 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 265 (2001)  
ISFSI failure would not pose nearly the same radioactive consequences as a reactor failure; CLI-07-21, 65 NRC 523 (2007)

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- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-26, 54 NRC 376, 381 (2001)  
permitting litigation on the merits of environmental contentions to proceed following issuance of the draft EIS, rather than awaiting the final EIS, could promote the Commission's dual goals of public safety and timely adjudication; LBP-07-3, 65 NRC 277 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-20, 56 NRC 147, 153-55 (2002)  
NRC has incorporated environmental justice goals into its reviews under NEPA and issued its own policy statement; LBP-07-9, 65 NRC 617 n.101 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-20, 56 NRC 147, 154 (2002)  
in accord with the environmental justice executive order, the NRC has obligated itself to address only the disproportionate distribution of high and adverse effects in its NEPA analysis; LBP-07-3, 65 NRC 266 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340 (2002)  
NEPA does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities; CLI-07-8, 65 NRC 129 (2007); CLI-07-10, 65 NRC 146 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 343-44 (2002)  
a NEPA-driven review of the risks of terrorism would be largely superfluous in a license renewal proceeding, given that the NRC has undertaken extensive efforts to enhance security at nuclear facilities; CLI-07-8, 65 NRC 130 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 346-57 (2002)  
a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility; LBP-07-3, 65 NRC 269 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002)  
NEPA does not call for examination of every conceivable aspect of federally licensed projects; LBP-07-3, 65 NRC 266 n.13 (2007)  
the claimed impact of a terrorist attack is too attenuated to find the proposed federal action of a license renewal to be the proximate cause of that impact; CLI-07-8, 65 NRC 129 (2007); CLI-07-10, 65 NRC 147 (2007)  
the environmental effect caused by third-party miscreants is simply too far removed from the natural or expected consequences of agency action to require a study under NEPA; CLI-07-10, 65 NRC 147 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 350-51 (2002)  
substantial practical difficulties impede meaningful NEPA-terrorism review; CLI-07-8, 65 NRC 131 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 352 (2002)  
NEPA's dual purpose is to ensure that federal officials fully take into account the environmental consequences of a federal action before reaching major decisions and to inform the public, Congress, and other agencies of those consequences; LBP-07-9, 65 NRC 603 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 354-57 (2002)  
protecting sensitive security information in the quintessentially public NEPA and adjudicatory process presents obstacles to litigating terrorism-related issues; CLI-07-8, 65 NRC 131 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-03-5, 57 NRC 279, 284 (2003)  
the Commission has used *sua sponte* review as a vehicle to address unappealed issues; CLI-07-1, 65 NRC 4 (2007)

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- Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 146 (2004)  
in considering alternatives under NEPA, an agency must take into account the needs and goals of the parties involved in the application; LBP-07-9, 65 NRC 608 (2007)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-3, 53 NRC 84, 99 (2001)  
although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleading, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not “fill in” any missing support, but rather are legally required to deny the contention; LBP-07-4, 65 NRC 340 n.286 (2007)
- Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976)  
a contention is not cognizable unless it is material to matters that fall within the scope of the proceeding for which the licensing board has been delegated jurisdiction; LBP-07-4, 65 NRC 304 (2007)
- Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 182 (1978)  
joint ventures are common within the nuclear industry and thus merit consideration in the alternatives analysis; LBP-07-9, 65 NRC 634 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-366, 5 NRC 39, 48, *aff’d*, CLI-77-8, 5 NRC 503, 508 (1977), *aff’d*, *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir.), *cert. denied*, 439 U.S. 1046 (1978)  
to discharge heated water into the ocean from a nuclear facility, the licensee needs an NPDES permit from the water supply and pollution control commission; CLI-07-16, 65 NRC 377 n.17 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-366, 5 NRC 39, 49, *aff’d*, CLI-77-8, 5 NRC 503, 508 (1977), *aff’d*, *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir.), *cert. denied*, 439 U.S. 1046 (1978)  
the issue of state NPDES permits is not properly before an appeal board; CLI-07-16, 65 NRC 388 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 70 (1977)  
for purposes of its NEPA evaluation, NRC must accept the cooling system approved by EPA; CLI-07-16, 65 NRC 388 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988), *aff’d sub nom. Massachusetts v. NRC*, 924 F.2d 311 (D.C. Cir.), *cert. denied*, 502 U.S. 899 (1991)  
although licensing boards generally are to litigate “contentions” rather than “bases,” it has been recognized that the reach of a contention necessarily hinges upon its terms coupled with its stated bases; LBP-07-3, 65 NRC 255 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 516-17 (1977), *aff’d sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 95-96 (1st Cir. 1978)  
the Commission has used *sua sponte* review as a vehicle to address an issue of wide implication; CLI-07-1, 65 NRC 4 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 521 n.20 (1977), *aff’d*, *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir.), *cert. denied*, 439 U.S. 1046 (1978)  
EPA’s determinations on aquatic impacts were accepted as dispositive, despite the fact that the EPA decision was under judicial review at the time; CLI-07-16, 65 NRC 384 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 528 (1977)  
NEPA is only procedural in nature and, after requiring that an agency consider all reasonable alternatives, does not require that the most environmentally benign site be chosen; LBP-07-9, 65 NRC 591 (2007)  
once an adequate alternatives analysis is done, the applicant’s proposed site will be rejected only when an alternative site is obviously superior; LBP-07-9, 65 NRC 591 (2007)

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- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 536 (1977)  
under the NEPA rule of reason, consideration of eighteen alternatives in a small region of interest is enough; LBP-07-9, 65 NRC 590 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 540 (1977)  
the fact that a possible alternative is beyond the Commission's power to implement, does not absolve the Commission of any duty to consider it; LBP-07-9, 65 NRC 637 (2007)  
there are numerous factors to consider in conducting the alternative site analysis under NEPA, including possible institutional and legal obstacles associated with construction at an alternate site; LBP-07-9, 65 NRC 633, 639 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 24 (1978)  
NRC abstinence from setting water quality standards is fully consistent with congressional general intent that the Clean Water Act is to be implemented in a way that will avoid needless duplication and unnecessary delays at all levels of government; CLI-07-16, 65 NRC 389 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 24-25 (1978)  
to discharge heated water into the ocean from a nuclear facility, the licensee needs an NPDES permit from the water supply and pollution control commission; CLI-07-16, 65 NRC 377 n.17 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 26 (1978)  
when enacting section 511(c)(2) of the Clean Water Act, Congress specifically intended to deprive the NRC's predecessor agency (the Atomic Energy Commission) of authority over pollutant discharges; CLI-07-16, 65 NRC 377 n.20 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 26-27 (1978)  
NRC abstinence from setting water quality standards is fully consistent with congressional general intent that the Clean Water Act is to be implemented in a way that will avoid unnecessary delays at all levels of government in the form of relitigation of the same issues; CLI-07-16, 65 NRC 389 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 26 (1978)  
the permitting agency determines what cooling system a nuclear power facility may use, and NRC factors the impacts resulting from use of that system into the NEPA cost-benefit analysis; CLI-07-16, 65 NRC 389 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 27 n.41 (1978)  
EPA's determinations on aquatic impacts were accepted as dispositive, despite the fact that the EPA decision was under judicial review at the time; CLI-07-16, 65 NRC 384 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-17, 8 NRC 179, 181 (1978)  
EPA's determinations on aquatic impacts were accepted as dispositive, despite the fact that the EPA decision was under judicial review at the time; CLI-07-16, 65 NRC 384 (2007)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1656 (1982)  
contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking are inadmissible; LBP-07-3, 65 NRC 252 (2007)  
in the absence of a regulatory gap, an attempt to advocate stricter requirements than those imposed by the regulations will result in a rejection of the contention, the latter as an impermissible collateral attack on the Commission's rules; LBP-07-3, 65 NRC 266 n.12 (2007)
- Quivira Mining Co.* (Ambrosia Lake Facility, Grants, New Mexico), CLI-98-11, 48 NRC 1, 5-6 (1998)  
when determining whether a petitioner has established the necessary "interest" under Commission rules, licensing boards are directed by Commission precedent to look to judicial concepts of standing for guidance; LBP-07-4, 65 NRC 293 (2007)
- Quivira Mining Co.* (Ambrosia Lake Facility, Grants, New Mexico), CLI-98-11, 48 NRC 1, 6 (1998)  
to establish standing, the requisite injury may be either actual or threatened, but must arguably lie within the zone of interests protected by the statutes governing the proceeding; LBP-07-4, 65 NRC 294 (2007)

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- River Road Alliance, Inc. v. Corps of Engineers of U.S. Army*, 764 F.2d 445, 452-53 (7th Cir. 1985)  
agencies are not obliged to create alternatives to a project in an EIS and may instead rely upon the applicant's list of alternatives; LBP-07-9, 65 NRC 609, 611 (2007)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 87, 97 (1983)  
NEPA's dual purpose is to ensure that federal officials fully take into account the environmental consequences of a federal action before reaching major decisions and to inform the public, Congress, and other agencies of those consequences; LBP-07-9, 65 NRC 603 (2007)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989)  
agencies must include in every recommendation or report on major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on the environmental impact of the proposed action; LBP-07-4, 65 NRC 309 (2007)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)  
the statutory requirement that a federal agency contemplating a major action prepare such an environmental impact statement serves NEPA's action-forcing purpose in two important respects; LBP-07-4, 65 NRC 309-10 (2007)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989)  
if the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs; LBP-07-4, 65 NRC 310 (2007)  
NEPA itself does not mandate particular results, but simply prescribes the necessary process; LBP-07-4, 65 NRC 310 (2007)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351-52 (1989)  
the EIS will discuss the extent to which adverse effects can be avoided because without such a discussion, neither the agency nor other interested groups or individuals can properly evaluate the severity of the adverse effects; LBP-07-4, 65 NRC 312 n.139 (2007)
- Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-48 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994)  
any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed; LBP-07-3, 65 NRC 254 (2007)
- San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016 (9th Cir. 2006), *cert. denied*, 127 S. Ct. 1124 (2007)  
NRC cannot, under NEPA, categorically refuse to consider the consequences of a terrorist attack against a spent fuel storage facility; CLI-07-9, 65 NRC 141 (2007); CLI-07-10, 65 NRC 145 (2007)  
the Commission precedent that a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility is not applicable to independent spent fuel storage installation licensing proceedings in the Ninth Circuit; LBP-07-3, 65 NRC 269 (2007)  
this decision nowhere says or implies that the NRC cannot consider spent fuel pool or other environmental issues generically; CLI-07-3, 65 NRC 21 n.31 (2007)
- San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1028 (9th Cir. 2006)  
NRC's categorical refusal to consider the environmental effects of a terrorist attack is unreasonable under NEPA; CLI-07-11, 65 NRC 148 (2007)
- San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1031-32 (9th Cir. 2006)  
in its terrorism review, NRC Staff may rely, where appropriate, on qualitative rather than quantitative considerations; CLI-07-11, 65 NRC 150 (2007)
- Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 & n.22 (1994)  
for proximity-based standing, frequency of contact must reflect regular interaction with the zone of harm, not merely occasional contact; CLI-07-21, 65 NRC 524 (2007)
- Sierra Club v. Morton*, 405 U.S. 727, 734-35 (1972)  
an organization's promotion of the public interest, environmental protection, and consumer protection are broad interests shared with many others and too general to constitute a protected interest under the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 411 (2007)
- Sierra Club v. Morton*, 405 U.S. 727, 739-40 (1972)  
if an organization does not identify the members it purportedly represents, the Commission cannot determine whether the organization actually does represent members who consider that they will be

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- affected by the licensing action or, rather, is simply seeking the vindication of its own value preference; CLI-07-18, 65 NRC 410 (2007)
- Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997)  
blindly adopting the applicant's goals is a losing proposition because it does not allow for the full consideration of alternatives required by NEPA; LBP-07-9, 65 NRC 637 (2007)
- Society for the Protection of New Hampshire Forests v. Site Evaluation Committee*, 115 N.H. 163, 171, 337 A.2d 778, 785 (1975)  
to discharge heated water into the ocean from a nuclear facility, the licensee needs an NPDES permit from the water supply and pollution control commission; CLI-07-16, 65 NRC 377 n.17 (2007)
- Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 21 (1998)  
prior to NRC's 2004 revision of Part 2, it had approved early hearings on safety issues but not on environmental issues; CLI-07-17, 65 NRC 394 (2007)
- Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 23 (1998)  
where appropriate, the Commission will exercise its authority to instruct the board to certify novel license renewal issues to it; CLI-07-1, 65 NRC 5 (2007)
- Steel Co. v. Citizens for a Better Environment*, 523 U.S. 83, 102-04 (1998)  
to qualify for standing, a petitioner must allege a concrete and particularized injury that is fairly traceable to the challenged action and likely to be redressed by a favorable decision; LBP-07-4, 65 NRC 294 (2007)
- System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-07-10, 65 NRC 144, 146 (2007)  
an appeals court ruling does not constitute new information on which a party can file a new contention; CLI-07-9, 65 NRC 142 (2007)  
any new contention on the subject of terrorism in this proceeding would be inexcusably late; CLI-07-9, 65 NRC 142 (2007)
- System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-07-10, 65 NRC 144, 146-47 (2007)  
a NEPA analysis is not the vehicle for exploring questions about the potential for a terrorist attack upon a proposed nuclear facility; LBP-07-3, 65 NRC 269 (2007)
- System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-07-14, 65 NRC 216, 217 (2007)  
regarding an early site permit application, any gaps and questions concerning groundwater transport and hydrology safety issues are acceptable and deferred until the construction permit or combined license stage; LBP-07-9, 65 NRC 601 (2007)
- System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), LBP-07-1, 65 NRC 27, 36 n.14 (2007)  
benefit-cost analysis can be postponed until the reactor licensing stage; LBP-07-9, 65 NRC 559 n.31 (2007)
- Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1 and 2), LBP-76-10, 3 NRC 209, 216 (1976)  
a board cannot be expected to sift through reams of data to determine whether a contention is admissible; LBP-07-3, 65 NRC 263 n.6 (2007)
- Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1), LBP-02-14, 56 NRC 15 (2002)  
occasional contact with an affected area is not sufficient to establish standing; LBP-07-4, 65 NRC 296 (2007)
- Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1), LBP-02-14, 56 NRC 15, 26 (2002)  
for proximity-based standing, frequency of contact must reflect regular interaction with the zone of harm, not merely occasional contact; CLI-07-21, 65 NRC 524 (2007)  
the agency has denied proximity-based standing where contact has been limited to mere occasional trips to areas located close to reactors; CLI-07-21, 65 NRC 524 (2007)



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- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1421 n.4 (1977)  
a claim of residence within 50 miles of a facility might entitle petitioner to a presumption of standing based on proximity in a reactor construction permit or operating license proceeding; CLI-07-19, 65 NRC 426 (2007)
- Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702, 704 (1978)  
to discharge heated water into the ocean from a nuclear facility, the licensee needs an NPDES permit from the water supply and pollution control commission; CLI-07-16, 65 NRC 377 n.17 (2007)
- Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702, 709-10 (1978)  
NRC abstinence from setting water quality standards is fully consistent with congressional general intent that the Clean Water Act is to be implemented in a way that will avoid needless duplication and unnecessary delays at all levels of government; CLI-07-16, 65 NRC 389 (2007)
- Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702, 712 (1978)  
the effect of Clean Water Act § 511(c)(2) is to require federal licensing agencies to accept as dispositive EPA's determinations respecting the discharge of pollutants; CLI-07-16, 65 NRC 377 n.20 (2007)  
Congress, in enacting the Clean Water Act, removed the broad responsibility of multiple federal agencies for water quality standards and placed that responsibility solely in the hands of the EPA; CLI-07-16, 65 NRC 388 (2007)
- Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702, 712 n.47 (1978)  
when enacting this section, Congress specifically intended to deprive the NRC's predecessor agency (the Atomic Energy Commission) of authority over pollutant discharges; CLI-07-16, 65 NRC 377 n.20 (2007)
- Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702, 715 (1978)  
NRC may not undercut EPA by undertaking its own analyses and reaching its own conclusions on water quality issues already decided by EPA; CLI-07-16, 65 NRC 388 (2007)
- Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992)  
a contention that does not directly controvert a position taken by the applicant in the application is subject to dismissal; LBP-07-3, 65 NRC 254 (2007); LBP-07-4, 65 NRC 306 (2007)
- U.S. Army* (Jefferson Proving Ground Site), LBP-06-6, 63 NRC 167, 185-86 (2006)  
having granted a hearing request on the strength of one admissible contention, it is appropriate, in the interest of the economical use of the board's resources, to defer consideration of the remaining contentions pending the Staff's completion of its technical review of the proposal under scrutiny and its issuance of the SER and EIS or EA; LBP-07-5, 65 NRC 359-60 (2007); LBP-07-8, 65 NRC 536 (2007)
- U.S. Army* (Jefferson Proving Ground Site), LBP-06-27, 64 NRC 438 (2006)  
contentions initially submitted by the hearing requestor required substantial alteration as a result of the outcome of the technical review; LBP-07-8, 65 NRC 536 (2007)  
the admissibility of proposed contentions may be determined after the Staff has issued the materials license amendment; CLI-07-20, 65 NRC 502 (2007)
- United States Department of Energy* (Clinch River Breeder Reactor Plant), CLI-82-83, 16 NRC 412, 422-25 (1982)  
NRC has traditionally read the language "authorized by law" to be the functional equivalent of "not prohibited by law; LBP-07-6, 65 NRC 464 (2007)
- United States Energy Research and Development Administration* (Clinch River Breeder Reactor Plant), CLI-76-13, 4 NRC 67, 76 (1976)  
the Commission has used *sua sponte* review as a vehicle to address an issue of wide implication; CLI-07-1, 65 NRC 4 (2007)

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- United States v. Mendoza*, 464 U.S. 154, 160 (1984)  
under preclusion doctrines, a court of appeals decision may prevent the government from relitigating the same issue with the same party, but it still leaves the government free to litigate the same issue in the future with other litigants; CLI-07-8, 65 NRC 129 n.14 (2007)
- United States v. Stauffer Chemical Co.*, 464 U.S. 165, 173 (1984)  
under preclusion doctrines, a court of appeals decision may prevent the government from relitigating the same issue with the same party, but it still leaves the government free to litigate the same issue in the future with other litigants; CLI-07-8, 65 NRC 129 n.14 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-04-30, 60 NRC 426, 432 (2004)  
threshold environmental legal and policy issues need not await issuance of the final environmental impact statement; CLI-07-17, 65 NRC 396 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433 (2006)  
the issue of consideration of threshold environmental legal and policy issues prior to issuance of the final environmental impact statement became moot because no contentions were admitted; CLI-07-17, 65 NRC 396 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 439 n.32 (2006)  
the Commission regularly affirms board decisions on the admissibility of contentions where the appellant points to no error of law or abuse of discretion; CLI-07-20, 65 NRC 503 n.20 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 455-56 (2006)  
supporting information is to be provided at the time the contention is filed, not at a later date or on appeal; CLI-07-20, 65 NRC 504 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 458 (2006)  
the purpose of an appeal is to point out errors made in the board's decision, not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the board; CLI-07-20, 65 NRC 504 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451 (2006)  
the issue of consideration of threshold environmental legal and policy issues prior to issuance of the final environmental impact statement became moot because no contentions were admitted; CLI-07-17, 65 NRC 396 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 456-57 (2006)  
*pro se* litigants are not exempt from NRC contention pleading requirements; CLI-07-20, 65 NRC 502 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 458 (2006)  
new information, not part of the original contention, may not be introduced for the first time on appeal; CLI-07-8, 65 NRC 133 (2007)
- USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 467 (2006)  
the NEPA analysis of alternatives should not ignore the stated purposes of the project and the applicant's needs; LBP-07-9, 65 NRC 608-09 (2007)
- Utahns for Better Transportation v. U.S. Department of Transportation*, 305 F.3d 1152, 1172 (10th Cir. 2002)  
an agency is not obligated to consider unreasonable alternatives, including those whose effect cannot be reasonably ascertained, and whose implementation is deemed remote and speculative; LBP-07-9, 65 NRC 607 (2007)
- Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 551 (1978)  
an agency is not obligated to consider unreasonable alternatives, including those whose effect cannot be reasonably ascertained, and whose implementation is deemed remote and speculative; LBP-07-9, 65 NRC 607 (2007)  
the detailed statement of alternatives in the environmental impact statement cannot be found wanting simply because the agency failed to include every alternative device and thought conceivable by the mind of man; LBP-07-9, 65 NRC 607 (2007)
- Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 48 (1989), *vacated in part on other grounds and remanded*, CLI-90-4, 31 NRC 333 (1990)  
material provided in support of a contention will be carefully examined by the board to confirm that on its face it does supply an adequate basis for the contention; LBP-07-3, 65 NRC 254 (2007)

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- Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 (2000)  
a declaration in support of petitioner's standing based on geographic proximity must include a specific statement of distance from the licensed facility; CLI-07-18, 65 NRC 413 n.43 (2007)  
any organization seeking representational standing must also show that at least one of its members may be affected by the Commission's approval of the transfer, must identify that member, and must demonstrate that the member has (preferably by affidavit) authorized the organization to represent him or her and to request a hearing on his or her behalf; CLI-07-18, 65 NRC 409 (2007); LBP-07-3, 65 NRC 250 (2007)
- Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163-64 (2000)  
the longest specific distance for which proximity-based standing has been granted in a license transfer case is 6 to 6-1/2 miles; CLI-07-21, 65 NRC 523 (2007)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979)  
close proximity to a facility has always been deemed to be enough, standing alone, to establish the requisite interest to confer standing; LBP-07-4, 65 NRC 294 (2007)
- Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), LBP-79-7, 9 NRC 330, 338 (1979)  
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- Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 3 and 5), CLI-77-11, 5 NRC 719, 722 (1977)  
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- Weinberger v. Catholic Action of Hawaii*, 454 U.S. 139 (1981)  
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- Westlands Water District v. U.S. Department of Interior*, 376 F.3d 853, 868 (9th Cir. 2004)  
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- Wilderness Society v. Griles*, 824 F.2d 4, 11 (D.C. Cir. 1987)  
to establish standing, the requisite injury may be either actual or threatened, but must arguably lie within the zone of interests protected by the statutes governing the proceeding; LBP-07-4, 65 NRC 294 (2007)
- Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1263 (1982)  
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- Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996)  
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- Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 9-11 (1996)  
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- Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 210 (1998)  
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- Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90, *rev'd in part on other grounds*, CLI-96-7, 43 NRC 235 (1996)  
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- 10 C.F.R. 2.104(b)(1)(iv)  
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- 10 C.F.R. 2.104(b)(2)(i)  
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- 10 C.F.R. 2.104(b)(3)  
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- 10 C.F.R. 2.104(b)(3)(i)-(iii)  
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- 10 C.F.R. 2.104(b)(3)(ii)  
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- 10 C.F.R. 2.202(c)(1)  
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- 10 C.F.R. 2.202(c)(2)(i)  
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10 C.F.R. 2.204

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10 C.F.R. 2.205

NRC initiates the civil penalty process by issuing a notice of violation and proposed imposition of a civil penalty; DD-07-3, 65 NRC 646 (2007)

10 C.F.R. 2.206

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petitioners' request that NRC condemn and stop the use of the two ISFSI concrete pads holding dry spent fuel storage casks because of the potential for amplification of earthquakes is denied; DD-07-2, 65 NRC 366-70 (2007)

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10 C.F.R. 2.309

an organization, like an individual, is considered a "person"; CLI-07-18, 65 NRC 411 (2007)

10 C.F.R. 2.309(a)

to intervene in NRC proceedings, in addition to satisfying the standing requirement, a petitioner must also advance at least one contention that meets the admissibility standards in section 2.309(f)(1); CLI-07-18, 65 NRC 408 (2007); LBP-07-4, 65 NRC 302 (2007); LBP-07-5, 65 NRC 345 (2007)

10 C.F.R. 2.309(b)(1)

following release of sensitive information, petitioners must file revised contentions within 20 days; CLI-07-18, 65 NRC 416 (2007)

10 C.F.R. 2.309(b)(3)(iii)

contentions must be filed with the original petition within 60 days of notice of the proceeding in the *Federal Register*, unless a longer period is therein specified, an extension is granted, or the contentions meet certain criteria for late-filed or new contentions based on information that is available only at a later time; LBP-07-4, 65 NRC 303 n.95 (2007)

10 C.F.R. 2.309(c)

contentions must be filed with the original petition within 60 days of notice of the proceeding in the *Federal Register*, unless a longer period is therein specified, an extension is granted, or the contentions meet certain criteria for late-filed or new contentions based on information that is available only at a later time; LBP-07-4, 65 NRC 303 n.95 (2007)

even if the current admitted contentions are resolved before the FEIS is issued so as to conclude the contested portion of the proceeding, petitioners could timely seek to litigate contentions regarding FEIS data or conclusions that differ significantly from the ER or the DEIS; LBP-07-3, 65 NRC 277 n.25 (2007)

except to the extent necessary to elucidate and explain specific rulings regarding various pieces of information, in determining the admissibility of a contention, the board has not considered any information in petitioner's reply other than that which would constitute legitimate amplification,

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- appropriate responses to arguments raised in the answers, or properly late- or newly filed material; LBP-07-4, 65 NRC 302 (2007)
- if petitioners cannot show that their new or revised contentions could not have been submitted without the requested access to the redacted information in the license transfer application, then they will have to meet not only the contention pleading requirements, but also the late-filing requirements; CLI-07-18, 65 NRC 415 (2007)
- the Commission may decide the admissibility of late-filed contentions based on previously unavailable information or defer ruling on them, considering the need for access to redacted information and other relevant factors; CLI-07-18, 65 NRC 414 n.46 (2007)
- 10 C.F.R. 2.309(d)  
an intervention petitioner must demonstrate standing; CLI-07-19, 65 NRC 425 (2007)
- 10 C.F.R. 2.309(d)(1)  
a hearing requestor must set forth his or her interest in the proceeding, as well as the possible effect that any order or decision entered therein might have upon that interest; LBP-07-5, 65 NRC 345 (2007)
- 10 C.F.R. 2.309(d)(1)(ii)-(iv)  
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- 10 C.F.R. 2.309(d)(2)  
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- 10 C.F.R. 2.309(f)  
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- 10 C.F.R. 2.309(f)(1)  
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- 10 C.F.R. 2.309(f)(1)(i)  
although a certain amount of latitude might appropriately be extended to *pro se* litigants, there nonetheless must be a substantial endeavor to meet the clear regulatory requirements for a hearing request; LBP-07-5, 65 NRC 352 (2007)  
*pro se* litigants are not exempt from the contention pleading requirements; CLI-07-20, 65 NRC 502 (2007)
- 10 C.F.R. 2.309(f)(1)(i)-(vi)  
to be admitted, contentions must satisfy six pleading requirements; LBP-07-3, 65 NRC 252 (2007); LBP-07-5, 65 NRC 345 (2007)
- 10 C.F.R. 2.309(f)(1)(iii)  
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- 10 C.F.R. 2.309(f)(1)(iii)-(iv)  
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- 10 C.F.R. 2.309(f)(1)(iv)  
to be admissible, contentions must assert an issue of law or fact that is material to the outcome of a licensing proceeding, meaning that the subject matter of the contention must impact the grant or denial of a pending license application; LBP-07-3, 65 NRC 254, 263, 264, 267 (2007)  
when a contention alleges that increases in radioactive releases create higher doses, but does not provide information or expert opinion to dispute the conclusion that the higher doses would still be under NRC regulatory limits, and no evidence has been presented to show that the higher levels will cause harm, sufficient information to show that a material dispute exists has not been provided and the contention making these claims should not be admitted; LBP-07-3, 65 NRC 266 (2007)
- 10 C.F.R. 2.309(f)(1)(v)  
a general, unsupported argument is not only insufficient to provide the necessary factual or expert opinion support for a contention, but also is so vague as to fail to demonstrate a disagreement with the applicant; LBP-07-3, 65 NRC 263 (2007)  
a nonselective citation is not consistent with petitioners' obligation to provide analyses and expert opinion supporting their contention; LBP-07-3, 65 NRC 263 (2007)  
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although a certain amount of latitude might appropriately be extended to *pro se* litigants, there nonetheless must be a substantial endeavor to meet the clear regulatory requirements for a hearing request; LBP-07-5, 65 NRC 352 (2007)  
it is the petitioner's obligation to present factual information and/or expert opinion necessary to support its contention; LBP-07-3, 65 NRC 253 (2007)  
*pro se* litigants are not exempt from our contention pleading requirements; CLI-07-20, 65 NRC 502 (2007)
- 10 C.F.R. 2.309(f)(1)(vi)  
a decommissioning plan must address economic considerations, and a contention that seeks to raise issues in that sphere must include references to specific portions of the plan that the petitioner disputes in order to demonstrate a genuine dispute; LBP-07-5, 65 NRC 347 (2007)  
a general, unsupported argument is not only insufficient to provide the necessary factual or expert opinion support for a contention, but also is so vague as to fail to demonstrate a disagreement with the applicant; LBP-07-3, 65 NRC 263 (2007)  
all properly formulated contentions must focus on the license application in question, challenging either specific portions of or alleged omissions from the application (including the Safety Analysis Report and the Environmental Report) so as to establish that a genuine dispute exists with the applicant on a material issue of law or fact; LBP-07-3, 65 NRC 254 (2007)  
by failing to point to specific parts of the ER's discussion of the no-action alternative that petitioners find inadequate and to provide support for that dispute, petitioners have failed to provide sufficient information to show that a genuine dispute exists with the applicant; LBP-07-3, 65 NRC 260 (2007)  
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the mere posing of questions does not provide sufficient support to admit a contention; LBP-07-4, 65 NRC 324 (2007)  
when a contention alleges that increases in radioactive releases create higher doses, but does not provide information or expert opinion to dispute the conclusion that the higher doses would still be under NRC regulatory limits, and no evidence has been presented to show that the higher levels will cause harm, sufficient information to show that a material dispute exists has not been provided and the contention making these claims should not be admitted; LBP-07-3, 65 NRC 266 (2007)
- 10 C.F.R. 2.309(f)(2)  
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- contentions must be filed with the original petition within 60 days of notice of the proceeding in the *Federal Register*, unless a longer period is therein specified, an extension is granted, or the contentions meet certain criteria for late-filed or new contentions based on information that is available only at a later time; LBP-07-4, 65 NRC 303 n.95 (2007)
- even if the current admitted contentions are resolved before the FEIS is issued so as to conclude the contested portion of the proceeding, petitioners could timely seek to litigate contentions regarding FEIS data or conclusions that differ significantly from the ER or the DEIS; LBP-07-3, 65 NRC 277 n.25 (2007)
- except to the extent necessary to elucidate and explain specific rulings regarding various pieces of information, in determining the admissibility of a contention, the board has not considered any information in petitioner's reply other than that which would constitute legitimate amplification, appropriate responses to arguments raised in the answers, or properly late- or newly filed material; LBP-07-4, 65 NRC 302 (2007)
- on issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report; CLI-07-10, 65 NRC 146 (2007)
- the Commission may decide the admissibility of late-filed contentions based on previously unavailable information or defer ruling on them, considering the need for access to redacted information and other relevant factors; CLI-07-18, 65 NRC 414 n.46 (2007)
- would-be intervenors must file contentions at the outset of the proceeding, on the basis of the applicant's environmental report; CLI-07-9, 65 NRC 142 (2007)
- 10 C.F.R. 2.309(f)(2)(i)  
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- 10 C.F.R. 2.309(h)(1)  
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- 10 C.F.R. 2.309(h)(2)  
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- 10 C.F.R. 2.309(i)  
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- 10 C.F.R. 2.311(b)-(d)  
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- 10 C.F.R. 2.315  
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- 10 C.F.R. 2.315(c)  
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- 10 C.F.R. 2.316, 2.319  
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- 10 C.F.R. 2.319(l)  
outside the context of petitions for interlocutory review, the Commission may also take interlocutory review of questions or rulings that a licensing board refers to the Commission; CLI-07-1, 65 NRC 4 n.10 (2007)
- 10 C.F.R. 2.323(b)  
any motion, other than one made orally on the record during a hearing or as otherwise directed by the presiding officer, must contain a certification that the movant has made a sincere effort to contact the other parties and resolve the matter, and that this effort was unsuccessful; LBP-07-4, 65 NRC 297 n.54 (2007)
- 10 C.F.R. 2.323(e)  
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- 10 C.F.R. 2.323(f)  
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- 10 C.F.R. 2.323(f)(1)  
outside the context of petitions for interlocutory review, the Commission may also take interlocutory review of questions or rulings that a licensing board certifies to the Commission; CLI-07-1, 65 NRC 4 n.10 (2007)
- 10 C.F.R. 2.325  
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- 10 C.F.R. 2.329  
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- 10 C.F.R. 2.332(d)  
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- 10 C.F.R. 2.335  
a contention that attacks a Commission rule, or that seeks to litigate a matter that is, or clearly is about to become, the subject of a rulemaking, is inadmissible; LBP-07-3, 65 NRC 252 (2007)  
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- challenges to findings in a generic environmental impact statement are not admissible absent a waiver of the NRC's generic finding; CLI-07-3, 65 NRC 16 (2007)
- if petitioner believes there is reason to depart from the license renewal generic environmental impact statement and related regulations, its remedy is a petition for rulemaking to modify the rules or a petition for a waiver of the rules based on special circumstances; CLI-07-8, 65 NRC 133 (2007)
- 10 C.F.R. 2.335(a)
- a contention that challenges any Commission rule is outside the scope of the proceeding because, absent a waiver, no rule or regulation of the Commission is subject to attack in any adjudicatory proceeding; CLI-07-3, 65 NRC 18 n.15 (2007); CLI-07-16, 65 NRC 383 (2007); LBP-07-3, 65 NRC 267 (2007); LBP-07-4, 65 NRC 305 (2007); LBP-07-5, 65 NRC 361 (2007)
- 10 C.F.R. 2.335(b)
- a rule can be waived in a particular license proceeding only when special circumstances are such that the application of the rule or regulation would not serve the purposes for which the rule or regulation was adopted; CLI-07-3, 65 NRC 18 n.15, 20 (2007); LBP-07-3, 65 NRC 268 (2007)
- 10 C.F.R. 2.340(f)
- an initial decision authorizing a construction permit is considered stayed pending Commission action; CLI-07-12, 65 NRC 205 (2007); LBP-07-9, 65 NRC 549, 616, 628, 629 (2007)
- before an early site permit can be made effective, the Commission must review and approve the licensing board's initial decision authorizing its issuance; CLI-07-7, 65 NRC 122 (2007)
- 10 C.F.R. 2.340(f)(2)
- before an early site permit can be made effective, the Commission must review and approve the Atomic Safety and Licensing Board's initial decision authorizing its issuance; CLI-07-4, 65 NRC 24 (2007)
- 10 C.F.R. 2.341(b)(1)
- filing of a petition for review is mandatory for a party to exhaust its administrative remedies before seeking judicial review; LBP-07-2, 65 NRC 192 (2007)
- 10 C.F.R. 2.341(f)(1)
- presiding officers are authorized to certify novel issues to the Commission; CLI-07-1, 65 NRC 4 (2007)
- 10 C.F.R. 2.341(f)(2)
- in exceptional instances, the Commission may in its discretion grant a petition for interlocutory review, where a party demonstrates that a ruling threatens it with immediate and serious irreparable impact or affects the basic structure of the proceeding in a pervasive or unusual manner; CLI-07-2, 65 NRC 12 (2007)
- 10 C.F.R. 2.341(f)(2)(i)
- a petition seeking review of an order granting or denying an abeyance motion meets NRC's standard for interlocutory review because the appealed order would have an immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer's final decision; CLI-07-6, 65 NRC 115 (2007)
- 10 C.F.R. 2.341(f)(2)(i)-(ii)
- petitioner must demonstrate that the licensing board's ruling at issue either threatens the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer's final decision or affects the basic structure of the proceeding in a pervasive or unusual manner; CLI-07-1, 65 NRC 4 n.10 (2007)
- 10 C.F.R. 2.345(b)
- a petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid; CLI-07-21, 65 NRC 521 (2007); CLI-07-22, 65 NRC 527 (2005)
- a petitioner cannot satisfy standing requirements by offering a vague claim of 50-mile proximity in an initial petition and later using a petition for reconsideration to fill in gaps with more specific information that was available all along; CLI-07-21, 65 NRC 522 (2007)
- 10 C.F.R. 2.390(b)
- material submitted as confidential financial information may be withheld from public disclosure; CLI-07-18, 65 NRC 415 (2007)
- 10 C.F.R. Part 2, Subpart F
- an applicant may obtain early partial decisions on site suitability issues for prospective construction permit sites; LBP-07-9, 65 NRC 561, 562, 626 (2007)

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- 10 C.F.R. 2.606(b)(2)  
the main differences between an early partial decision and an early site permit are that the early partial decision lasts only 5 years and resolves only those site suitability issues that the applicant specifically asks to resolve, whereas the early site permit lasts for 20 years and once it is issued it covers the site; LBP-07-9, 65 NRC 562 (2007)
- 10 C.F.R. 2.710  
summary disposition is a procedure used when there are no genuine issues as to any material fact and the party is entitled to a decision as a matter of law; CLI-07-1, 65 NRC 9 (2007)
- 10 C.F.R. 2.710(d)(2)  
to be granted summary disposition, a party must show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law; CLI-07-1, 65 NRC 7 n.25 (2007)
- 10 C.F.R. 2.714(a)(3), 2.714(b)(1)  
the current version of contention admissibility rules no longer incorporates these provisions, which permitted the supplementation of petitions and the filing of contentions after the original filing of petitions; LBP-07-4, 65 NRC 303 n.95 (2007)
- 10 C.F.R. 2.715(c)  
an advisory body that lacks executive or legislative responsibilities is so far removed from having the representative authority to speak and act for the public that it does not qualify as a governmental entity; CLI-07-18, 65 NRC 412 n.37 (2007)
- 10 C.F.R. 2.802  
if petitioner believes there is reason to depart from the license renewal generic environmental impact statement and related regulations, its remedy is a petition for rulemaking to modify the rules or a petition for a waiver of the rules based on special circumstances; CLI-07-3, 65 NRC 16 (2007); CLI-07-8, 65 NRC 133 (2007)  
only a party to the proceedings, or an interested governmental entity participating under 10 C.F.R. 2.315, may file a request to stay proceedings pending a rulemaking; CLI-07-13, 65 NRC 215 (2007)  
outside the adjudicatory context, a petitioner may file a petition for rulemaking; LBP-07-4, 65 NRC 305 (2007)
- 10 C.F.R. 2.802(d)  
a petitioner who has filed a petition for rulemaking may request the Commission to suspend all or any part of any licensing proceeding to which the petitioner is a party, pending disposition of the petition for rulemaking; CLI-07-3, 65 NRC 22 n.37 (2007)
- 10 C.F.R. 2.1202(a)  
Staff may issue a license amendment despite the pendency of a hearing; CLI-07-20, 65 NRC 501 (2007)
- 10 C.F.R. 2.1202(b)(2)  
in a Subpart L proceeding, the Staff elects whether or not to be a party to some or all contentions; CLI-07-20, 65 NRC 501 n.8 (2007)
- 10 C.F.R. 2.1204(b)(3)  
NRC's new contention admission procedures comply with the relevant provisions of the Administrative Procedure Act and the Commission has furnished an adequate explanation for the changes; LBP-07-4, 65 NRC 303 n.96 (2007)  
the opportunity for cross-examination under Subpart L is equivalent to the opportunity for cross-examination under the Administrative Procedure Act; LBP-07-4, 65 NRC 303 n.96 (2007)
- 10 C.F.R. 2.1205  
challenges to the merits of contentions must await either motions for summary disposition or an evidentiary hearing; LBP-07-5, 65 NRC 362 (2007)  
summary disposition is a procedure used when there are no genuine issues as to any material fact and the party is entitled to a decision as a matter of law; CLI-07-1, 65 NRC 9 (2007)
- 10 C.F.R. 2.1306(b)(2)  
the "issues" in license transfer proceedings constitute "contentions" under section 2.309(f) and must therefore meet the standards for admissibility set forth in that regulation; CLI-07-18, 65 NRC 405-06 n.7 (2007)

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- 10 C.F.R. 2.1316(b), (c)  
the Staff ordinarily does not participate as a party in the adjudicatory portion of license transfer proceedings; CLI-07-18, 65 NRC 406 n.8 (2007)
- 10 C.F.R. 2.1319(a)  
the Commission may designate one or more Commissioners or any other person permitted by law to preside at a license transfer proceeding; CLI-07-18, 65 NRC 417 (2007)
- 10 C.F.R. Part 2, Appendix A, § I.a (2004)  
although Appendix A was rescinded, the licensing board may still rely on it as an authoritative expression of the Commission's policy; LBP-07-9, 65 NRC 554 n.23 (2007)
- 10 C.F.R. 20.1003  
in the context of radiation protection, ALARA means making every reasonable effort to maintain exposure to radiation as far below the dose limits set out in Part 20 as is possible, consistent with the licensed activity that is undertaken; LBP-07-6, 65 NRC 469 n.187 (2007)
- 10 C.F.R. 20.1101  
the elements of an acceptable ALARA program are discussed; LBP-07-6, 65 NRC 469 (2007)  
the occupational radiation protection measures that a uranium enrichment facility must address are discussed; LBP-07-6, 65 NRC 467 (2007)
- 10 C.F.R. 20.1101(b)  
in the context of radiation protection, ALARA means making every reasonable effort to maintain exposure to radiation as far below the dose limits set out in Part 20 as is possible, consistent with the licensed activity that is undertaken; LBP-07-6, 65 NRC 469 (2007)
- 10 C.F.R. 20.1301  
each licensee and each licensed operation must comply with the annual dose limit of 100 mrem to members of the public and an effluent concentration limit specified in 10 C.F.R. Part 20, Appendix B, Table 2; LBP-07-9, 65 NRC 584 (2007)
- 10 C.F.R. 20.1301(a)(1)  
some of NRC's radiation standards for members of the public apply on a per-license basis; LBP-07-9, 65 NRC 623 (2007)
- 10 C.F.R. 20.1301(e)  
some radiation standards that NRC uses for members of the public appear to apply on a per-site basis; LBP-07-9, 65 NRC 623 (2007)  
this provision is neither reactor- nor site-specific, and applies to doses resulting from exposures to planned discharges of radioactive materials, except radon and its daughters, to the general environment from uranium fuel cycle operations; LBP-07-9, 65 NRC 584 (2007)
- 10 C.F.R. 20.1302  
each licensee and each licensed operation must comply with the annual dose limit of 100 mrem to members of the public and an effluent concentration limit specified in 10 C.F.R. Part 20, Appendix B, Table 2; LBP-07-9, 65 NRC 584 (2007)
- 10 C.F.R. 20.1601(a)  
use of conspicuously posted signs, in conjunction with the applicant's radiation work permit program, is an acceptable alternative; LBP-07-6, 65 NRC 469 (2007)
- 10 C.F.R. 20.1904  
a request for an exemption from radiation labeling requirements is approved; LBP-07-6, 65 NRC 467 (2007)
- 10 C.F.R. 20.1905(c)  
containers are exempted from labeling requirements if they are attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the established limits; LBP-07-6, 65 NRC 468 (2007)
- 10 C.F.R. 20.2003  
fluids that meet the concentration limits and other requirements can be pumped to the sanitary sewer system; LBP-07-6, 65 NRC 480 (2007)
- 10 C.F.R. 20.2202, 20.2206(b)  
recordkeeping and reporting commitments for occupational exposure to radiation exceeding the dose limits are described; LBP-07-6, 65 NRC 470 (2007)

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- 10 C.F.R. 30.4  
a “curie” is the amount of radioactive material that disintegrates at the rate of 37 billion atoms per second; LBP-07-9, 65 NRC 579 n.63 (2007)
- 10 C.F.R. 30.32  
a license application must include information demonstrating that the equipment, facilities, and procedures to be used at the proposed facility are adequate to protect health and minimize danger to life and property; LBP-07-6, 65 NRC 439 (2007)
- 10 C.F.R. 30.33  
in conducting their sufficiency review of safety matters, boards must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support the required findings; LBP-07-6, 65 NRC 437 (2007)
- 10 C.F.R. 30.38  
licensee shall specify the respects in which it desires its license to be amended and the grounds for the amendment; CLI-07-15, 65 NRC 232 (2007)
- 10 C.F.R. 40.4  
because pyrochlore contains more than 0.05% by weight uranium and thorium, it is subject to NRC regulation as a source material; LBP-07-5, 65 NRC 344 (2007)
- 10 C.F.R. 40.14  
an exemption can be granted if it is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest; LBP-07-6, 65 NRC 445 (2007)  
an exemption from liability insurance requirements may be granted if NRC finds that the proposed exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest; LBP-07-6, 65 NRC 463 (2007)  
because DOE has legal authority to indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents, an exemption under the Commission’s regulations is authorized by law; LBP-07-6, 65 NRC 464 (2007)
- 10 C.F.R. 40.31  
a license application must include information demonstrating that the equipment, facilities, and procedures to be used at the proposed facility are adequate to protect health and minimize danger to life and property; LBP-07-6, 65 NRC 439 (2007)
- 10 C.F.R. 40.31(f)  
a license application that seeks authorization to use source material or SNM in a uranium enrichment facility must include the applicant’s provisions for liability insurance; LBP-07-6, 65 NRC 462 (2007)
- 10 C.F.R. 40.32  
in conducting their sufficiency review of safety matters, boards must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support the required findings; LBP-07-6, 65 NRC 437 (2007)
- 10 C.F.R. 40.36  
applicant must submit a decommissioning funding plan for its proposed facility; LBP-07-6, 65 NRC 449 (2007)
- 10 C.F.R. 40.36(d)  
without an exemption, applicant is required to fully fund all of its estimated decommissioning costs at the time of licensing; LBP-07-6, 65 NRC 450 (2007)
- 10 C.F.R. 40.42(g)(2)  
a licensing board may modify or condition a license amendment; LBP-07-7, 65 NRC 513 (2007)  
to be granted, an alternate schedule for submission of a decommissioning plan must be necessary to the effective conduct of decommissioning operations; LBP-07-7, 65 NRC 509, 510, 516 (2007)
- 10 C.F.R. Part 50  
the effects of dewatering during construction on the existing structures is reviewed during the COL stage; LBP-07-1, 65 NRC 48 (2007)
- 10 C.F.R. 50.2  
the definition, origin, and derivation of source terms are discussed; LBP-07-9, 65 NRC 586 n.75 (2007)
- 10 C.F.R. 50.5(a)(2)  
providing information that a licensee employee knew was incomplete or inaccurate in some respects material to the NRC is a violation; CLI-07-6, 65 NRC 114 (2007)

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- 10 C.F.R. 50.10(e)  
if applicant includes a satisfactory site redress plan, an early site permit holder may conduct certain site preparation activities under a limited work authorization; LBP-07-9, 65 NRC 550 n.5, 606 (2007)
- 10 C.F.R. 50.17(c)  
if a combined operating license or construction permit is never issued or ultimately denied, the ESP holder would be required to redress even limited site preparation activities and restore the site; LBP-07-9, 65 NRC 606 (2007)
- 10 C.F.R. 50.33(f)  
a licensee need not be an electric utility, but a non-electric utility license applicant must meet heightened financial qualifications; CLI-07-18, 65 NRC 415 (2007); LBP-07-4, 65 NRC 298 (2007)
- 10 C.F.R. 50.33(f)(1)(iii)  
petitioner's mere listing of various sections of the environmental report of the application cannot be said to bring the contention within scope; LBP-07-4, 65 NRC 315 (2007)
- 10 C.F.R. 50.33(f)(2)  
an applicant seeking to renew or extend the term of an operating license for a power reactor need not submit the financial information that is required in an application for an initial license; LBP-07-4, 65 NRC 315 (2007)
- 10 C.F.R. 50.33(k)(1)  
a non-electric-utility owner/operator of a facility must submit 5-year cost and revenue projections and other business-related financial data and discussion; CLI-07-18, 65 NRC 415 (2007)
- 10 C.F.R. 50.34(a)(1)(ii)(D)(I)  
doses from design basis accidents must be calculated for hypothetical individuals located at the closest point on the exclusion area boundary for a 2-hour period and at the outer radius of the low population zone for the course of the accident; LBP-07-1, 65 NRC 92 (2007)
- 10 C.F.R. 50.34(b)(6)(ii)  
each applicant for a license to operate a power plant must submit a final safety analysis report that includes the managerial and administrative controls to be used to assure safe operation; LBP-07-2, 65 NRC 166 (2007)
- 10 C.F.R. 50.34(b)(6)(iii)  
the FSAR must include the applicant's plans for preoperational testing and initial operations; LBP-07-2, 65 NRC 166 n.34 (2007)
- 10 C.F.R. 50.34(c) & (d)  
reactor security plans require protection against the design basis threat; CLI-07-11, 65 NRC 150 n.10 (2007)
- 10 C.F.R. 50.36a  
NRC includes the EPA drinking water standard in the technical specifications that a licensee must meet; LBP-07-9, 65 NRC 580 n.67 (2007)
- 10 C.F.R. 50.36a(a)  
the potential for tritium contamination of water is primarily a NEPA issue because it involves the environmental impacts of the proposed early site permit and possible mitigation measures, but also has a safety element because safety regulations require that exposure to radiation be as low as reasonably achievable; LBP-07-9, 65 NRC 579, 584 (2007)
- 10 C.F.R. 50.40(c)  
before issuing a construction permit for a nuclear power reactor, the Commission must conclude that the issuance of a license to the applicant will not be inimical to the common defense and security or to the health and safety of the public; LBP-07-9, 65 NRC 556, 598 (2007)
- 10 C.F.R. 50.47  
emergency plans do not fall within the scope of license renewal; LBP-07-4, 65 NRC 336 (2007)
- 10 C.F.R. 50.48  
NRC's enforcement policy allows the NRC to exercise enforcement discretion for certain violations of the fire protection requirements; DD-07-3, 65 NRC 657 (2007)
- 10 C.F.R. 50.48(b)  
NRC normally will not take enforcement action for a violation involving a problem related to engineering, design, implementing procedures, or installation, if the violation is documented in an inspection report

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- and it meets certain criteria including the Licensee's voluntary initiative to adopt the risk-informed performance-based fire protection program; DD-07-3, 65 NRC 654 (2007)
- 10 C.F.R. 50.48(c)  
licensee is not required to submit docketed information on the resolution of each fire protection noncompliance, but it is required to implement and maintain compensatory measures for remaining noncompliances; DD-07-3, 65 NRC 649 (2007)
- licensees may voluntarily adopt a risk-informed and performance-based fire protection program; DD-07-3, 65 NRC 648-56 (2007)
- 10 C.F.R. 50.54(a)(1)  
each nuclear power plant must implement a quality assurance program that includes all testing required to demonstrate that the structures, systems, and components will perform satisfactorily in service; LBP-07-2, 65 NRC 166, 192 (2007)
- 10 C.F.R. 50.55a(c)  
ASME components refers to those components required to meet the requirements of Class 1 components in section III of the ASME Boiler and Pressure Vessel Code; LBP-07-2, 65 NRC 183 n.57 (2007)
- use of the ASME Boiler and Pressure Vessel Code is required; LBP-07-2, 65 NRC 184 n.58 (2007)
- 10 C.F.R. 50.58(b)(6)  
Staff's no significant hazards consideration determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination; LBP-07-2, 65 NRC 159 n.10 (2007)
- 10 C.F.R. 50.73(a)(2)(iv)(A)-(B)  
generator load rejection transients must be analyzed and reported to the NRC; LBP-07-2, 65 NRC 171 (2007)
- when an MSIV transient occurs, the reactor operator is required to analyze what happened and how the reactor systems responded and performed, and to report to the NRC; LBP-07-2, 65 NRC 170 (2007)
- 10 C.F.R. 50.75  
a non-electric-utility owner/operator of a facility must submit 5-year cost and revenue projections and other business-related financial data and discussion; CLI-07-18, 65 NRC 415 (2007)
- 10 C.F.R. 50.80  
the test for approval of a license transfer application is described; CLI-07-18, 65 NRC 405 n.3 (2007)
- transfer of any NRC license is precluded unless the Commission both finds the transfer in accordance with the AEA and gives its consent in writing; CLI-07-19, 65 NRC 425 (2007)
- 10 C.F.R. 50.90  
applications to amend existing operating licenses or construction permits for production or utilization facilities are authorized; CLI-07-18, 65 NRC 405 n.3 (2007)
- 10 C.F.R. 50.92(a)  
the FSAR for an application to amend a license and authorize an extended power uprate must include the applicant's plans for preoperational testing and initial operations; LBP-07-2, 65 NRC 166 (2007)
- 10 C.F.R. 50.109(a)(5)  
the Commission shall always require backfitting of a facility if it determines that such regulatory action is necessary to ensure that the facility provides adequate protection to the health and safety of the public and is in accord with the common defense and security; LBP-07-9, 65 NRC 561 n.35 (2007)
- 10 C.F.R. Part 50, Appendix A  
transients can be, and often are, anticipated operational occurrences that are conditions of normal operation; LBP-07-2, 65 NRC 168 (2007)
- 10 C.F.R. Part 50, Appendix A, GDC 2  
an ESP applicant must consider the most severe surface deformation historically reported for the site and surrounding area, with sufficient margin for uncertainties; LBP-07-1, 65 NRC 66 (2007)
- 10 C.F.R. Part 50, Appendix A, GDC 10  
an MSIV transient is classified as an anticipated operational occurrence, and nuclear power stations must be designed and built to withstand them; LBP-07-2, 65 NRC 170 (2007)
- generator load rejection transients occasionally occur and are classified as anticipated operational occurrences that nuclear power stations must be designed and built to withstand; LBP-07-2, 65 NRC 171 (2007)
- the reactor core and associated coolant, control, and protection systems must be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of



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- normal operation, including the effects of anticipated operational occurrences; LBP-07-2, 65 NRC 168 (2007)
- 10 C.F.R. Part 50, Appendix A, GDC 54  
main steam isolation valves serve a safety function in the event of fuel failure by preventing fission products from the fuel inside of the reactor from being released into the steam system outside of the reactor containment; LBP-07-2, 65 NRC 169 (2007)
- 10 C.F.R. Part 50, Appendix A, GDC 60  
the radwaste facility design must include measures to suitably control the release of radioactive materials; LBP-07-1, 65 NRC 58 (2007)
- 10 C.F.R. Part 50, Appendix B  
each applicant for a license to operate a power plant must submit a final safety analysis report that includes the managerial and administrative controls to be used to assure safe operation; LBP-07-2, 65 NRC 166 (2007)
- nuclear power plants include structures, systems, and components that prevent or mitigate the consequences of postulated accidents and that could cause undue risk to the health and safety of the public; LBP-07-2, 65 NRC 166 (2007)
- the quality assurance requirements for the design, construction, and operation of structures, systems, and components apply to all activities affecting the safety-related functions of those structures, systems, and components ; LBP-07-2, 65 NRC 166 (2007)
- 10 C.F.R. Part 50, Appendix B, Criterion XI  
a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents; LBP-07-2, 65 NRC 166-67 (2007)
- each nuclear power plant must implement a quality assurance program that includes all testing required to demonstrate that the structures, systems and components will perform satisfactorily in service; LBP-07-2, 65 NRC 192 (2007)
- it is not necessary for licensee to perform large transient testing in order to satisfy the relevant legal requirement; LBP-07-2, 65 NRC 179 (2007)
- regulatory guides and Staff review plans are worth noting, but they do not have the force of law and are not binding on the board's determination as to whether applicant's testing program satisfies the legal standard; LBP-07-2, 65 NRC 173 (2007)
- the board must decide whether an MSIV transient test and a GLR transient test are required to demonstrate that the structures, systems, and components on the reactor at the uprated conditions will perform satisfactorily in service; LBP-07-2, 65 NRC 177 (2007)
- the legal standard that the board must use for determining whether the license amendment should be approved is whether applicant's test program assures that all testing required to demonstrate that SSC will perform satisfactorily in service is identified and performed; LBP-07-2, 65 NRC 167 (2007)
- 10 C.F.R. Part 50, Appendix I  
the per-reactor dose limits for sites with multiple reactors are discussed; LBP-07-9, 65 NRC 582, 584-85 (2007)
- this regulation only applies to "light-water-cooled" power plant reactors; LBP-07-9, 65 NRC 624 (2007)
- 10 C.F.R. Part 50, Appendix I, § II.A  
some of NRC's radiation doses and standards for members of the public apply on a per-reactor basis; LBP-07-9, 65 NRC 623 (2007)
- 10 C.F.R. Part 50, Appendix I, § III.A.1  
licensees must take into account the cumulative effect of all sources and pathways within the plant contributing to the particular type of effluent being considered; LBP-07-9, 65 NRC 585 n.74 (2007)
- 10 C.F.R. Part 50, Appendix S, ¶IV(a)(1)(ii)  
a nuclear power plant must be designed so that, if the safe shutdown earthquake occurs, certain structures, systems, and components will remain functional and within applicable stress, strain, and deformation limits; LBP-07-9, 65 NRC 595 (2007)

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- 10 C.F.R. 51.10  
although an early site permit does not authorize any construction activity, the NRC Staff is still required by Council on Environmental Quality regulations to consider actions that are related to other actions that could lead to a significant impact on the environment; LBP-07-1, 65 NRC 99 (2007)
- 10 C.F.R. 51.10(a)  
to the fullest extent possible all agencies of the federal government shall comply with the procedures in NEPA § 102(2); LBP-07-9, 65 NRC 603 (2007)
- 10 C.F.R. 51.33(c)  
any member of the public who wishes to comment on the draft environmental assessment outside of the adjudicatory process, pursuant to NRC's normal environmental process, must do so within 30 days after it is made available (or within 45 days) of the publication of a draft environmental impact statement; CLI-07-11, 65 NRC 150 (2007)
- 10 C.F.R. 51.41  
although the primary duties of NEPA fall on the NRC Staff in NRC proceedings, the initial requirement to analyze the environmental impacts of an action, including license renewal, is directed to applicants; LBP-07-4, 65 NRC 310 (2007)
- 10 C.F.R. 51.45  
applicant must submit an environmental report which the NRC Staff uses as input to the draft and final environmental impact statements; LBP-07-9, 65 NRC 614 (2007)
- 10 C.F.R. 51.45(b)  
nothing in the agency's Part 51 NEPA regulations or the Staff's ER preparation guidance in regard to providing a description of the local environment, indicates exactly how, as a general matter, a baseline for NEPA analysis is to be established; LBP-07-3, 65 NRC 256 (2007)
- 10 C.F.R. 51.45(b)(1)-(5)  
environmental factors that might conflict with the issuance of an early site permit include impact of the proposed action on the environment, unavoidable adverse environmental impacts, alternatives to the proposed action, conflicts between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and irreversible and irretrievable commitments of resources; LBP-07-1, 65 NRC 72 n.198 (2007)  
the content of a uranium enrichment facility applicant's environmental report is discussed; LBP-07-6, 65 NRC 484 (2007)
- 10 C.F.R. 51.45(b)(3)  
an applicant's environmental report for an ESP must include a discussion of the alternatives to the proposed action which, to the extent practicable, should be presented in a comparative form; LBP-07-1, 65 NRC 73 (2007)  
if the proposed siting of a plant for an ESP involves unresolved conflicts concerning alternative uses of available resources, then the discussion in the environmental report must be sufficiently complete to allow the NRC Staff to develop and explore appropriate alternatives to the ESP; LBP-07-1, 65 NRC 73, 100 (2007); LBP-07-6, 65 NRC 484 (2007)
- 10 C.F.R. 51.45(c)  
in its terrorism review, NRC Staff may rely, where appropriate, on qualitative rather than quantitative considerations; CLI-07-11, 65 NRC 150 (2007)  
the environmental report's analysis of the cooling system intake and discharge structures and operation is not based on field surveys or quantitative analysis; LBP-07-3, 65 NRC 257-58 n.5 (2007)
- 10 C.F.R. 51.50  
applicant must submit an environmental report which the NRC Staff uses as input to the draft and final environmental impact statements; LBP-07-9, 65 NRC 614 (2007)  
the content of a uranium enrichment facility applicant's environmental report is discussed; LBP-07-6, 65 NRC 484 (2007)
- 10 C.F.R. 51.50(c)(1)  
if, at the COL stage, the power level selected is either lower or higher than 2000 MWe, the different value would be considered new information and thus subject to review to determine the effects of the changed value on the conclusions of the alternative energy analysis in the FEIS; LBP-07-1, 65 NRC 75 n.210 (2007)

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- 10 C.F.R. 51.53(c)  
a license renewal applicant must submit with its application an environmental report, which must describe the proposed action, including the applicant's plans to modify the facility or its administrative control procedures, and the modifications directly affecting the environment or affecting plant effluents that affect the environment; LBP-07-4, 65 NRC 310 (2007)
- 10 C.F.R. 51.53(c)(3)(i)  
a license renewal applicant is generally excused from discussing Category 1 issues in its environmental report; CLI-07-3, 65 NRC 17 (2007); LBP-07-4, 65 NRC 310 (2007)  
challenges to findings in a generic environmental impact statement are not admissible absent a waiver of the NRC's generic finding or a successful petition for rulemaking; CLI-07-3, 65 NRC 16 (2007)  
for license renewal, certain environmental issues are amenable to generic consideration and therefore do not require case-specific analysis; CLI-07-16, 65 NRC 378 n.22 (2007)  
license renewal applicants may in their site-specific ERs refer to and adopt the generic environmental impact findings found in Appendix B, Table B-1, for all Category 1 issues; LBP-07-4, 65 NRC 311 n.134 (2007)  
new and significant information about a Category 1 issue is not a proper subject for a contention, absent a waiver of the rule; LBP-07-4, 65 NRC 311 n.134 (2007)
- 10 C.F.R. 51.53(c)(3)(ii)  
only Category-2 environmental issues must be addressed in an environmental report and may therefore be litigated at an adjudicatory hearing; CLI-07-16, 65 NRC 390 (2007)
- 10 C.F.R. 51.53(c)(3)(ii)(B)  
analysis of entrainment and impingement of fish, and heat shock, is required only for plants with once-through cooling or cooling ponds, because it has been determined generically that such impacts are small for plants that use cooling towers; LBP-07-4, 65 NRC 320 (2007)  
if applicant's plant utilizes a once-through cooling system, applicant shall provide a copy of a Clean Water Act § 316a variance or equivalent state permit and supporting documentation or it must assess the impact of the proposed action on fish and shellfish resources resulting from heat shock; CLI-07-16, 65 NRC 378 (2007)  
the current version of applicant's NPDES permit must be attached to its license renewal application; CLI-07-16, 65 NRC 379 (2007)
- 10 C.F.R. 51.53(c)(3)(ii)(L)  
alternatives to mitigate severe accidents must be considered for all plants that have not previously considered such alternatives; LBP-07-4, 65 NRC 312 (2007)
- 10 C.F.R. 51.53(c)(3)(iv)  
even though a matter may normally fall within a Category 1 issue, ERs are also required to contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware; CLI-07-3, 65 NRC 18 (2007); LBP-07-4, 65 NRC 311 n.134 (2007)
- 10 C.F.R. 51.70  
Staff's supplemental environmental impact statement is specific to the particular site involved and provides the Staff's independent assessment of the applicant's environmental report; LBP-07-4, 65 NRC 312 (2007)
- 10 C.F.R. 51.70(b)  
the primary duties of NEPA fall on the NRC Staff in NRC proceedings; LBP-07-4, 65 NRC 310 (2007)
- 10 C.F.R. 51.71  
NRC Staff must perform a cost-benefit analysis of construction and operation of a uranium enrichment facility and compare the incremental costs of the proposed action to the increase in benefits over the no-action alternative; LBP-07-6, 65 NRC 481 (2007)
- 10 C.F.R. 51.71(d)  
based on information in applicant's environmental report, the NRC Staff prepares an EIS that includes an analysis that considers and weighs the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects; LBP-07-1, 65 NRC 73, 100 (2007); LBP-07-6, 65 NRC 484 (2007)  
in its terrorism review, NRC Staff may rely, where appropriate, on qualitative rather than quantitative considerations; CLI-07-11, 65 NRC 150 (2007)

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- the comparison analysis in the final environmental impact statement must include the economic, technical, and other benefits of the proposed action and alternatives to those comparative costs; LBP-07-6, 65 NRC 487 (2007)
- the draft environmental impact statement must include an analysis of alternatives available for reducing or avoiding adverse environmental effects; LBP-07-9, 65 NRC 606 (2007)
- 10 C.F.R. 51.73  
any member of the public who wishes to comment on the draft environmental assessment outside of the adjudicatory process, pursuant to NRC's normal environmental process must do so within 30 days after it is made available in accordance with the NRC's regulations (or within 45 days) of the publication of a draft environmental impact statement; CLI-07-11, 65 NRC 150 (2007)
- 10 C.F.R. 51.73-.74  
Staff's supplemental environmental impact statement is specific to the particular site involved and provides the Staff's independent assessment of the applicant's environmental report; LBP-07-4, 65 NRC 312 (2007)
- 10 C.F.R. 51.91  
the final environmental impact statement must include an analysis of alternatives available for reducing or avoiding adverse environmental effects; LBP-07-9, 65 NRC 606 (2007)
- 10 C.F.R. 51.92  
NRC may not permit construction or operation of new reactors unless and until it has taken into account any changed circumstances and new and significant information; LBP-07-3, 65 NRC 267 (2007)
- 10 C.F.R. 51.95(c)  
in a supplemental environmental impact statement, Staff must address the adverse environmental effects that cannot be avoided; LBP-07-4, 65 NRC 312 (2007)
- 10 C.F.R. 51.103(a)(5)  
the standard for the Commission's decision on license renewal applications is whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable; LBP-07-4, 65 NRC 312 (2007)
- 10 C.F.R. 51.104(a)(1)  
NRC Staff may not offer the final environmental impact statement in evidence or present the Staff's position on matters within the scope of NEPA until the FEIS is filed with the Environmental Protection Agency, furnished to commenting agencies, and made available to the public; CLI-07-17, 65 NRC 394 (2007)
- 10 C.F.R. 51.105(a)(1)-(3)  
benefit-cost analysis can be postponed until the reactor licensing stage; LBP-07-9, 65 NRC 559 (2007)
- 10 C.F.R. 51.105(a)(2)  
even if a proceeding is uncontested, the presiding officer must independently consider the final balance among the conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; LBP-07-9, 65 NRC 556 n.27, 614-15 (2007)
- 10 C.F.R. 51.105(a)(4)  
even if a proceeding is uncontested, the board must determine whether the NEPA review conducted by the NRC staff has been adequate; LBP-07-9, 65 NRC 558, 616 (2007)  
in conducting their sufficiency review, licensing boards are directed to make specific findings; LBP-07-1, 65 NRC 36 (2007)
- 10 C.F.R. Part 51, Subpart A, Appendix A, § 5  
all reasonable alternatives must be identified in the environmental impact statement and the range of alternatives discussed will encompass those proposed to be considered by the ultimate decisionmaker; LBP-07-9, 65 NRC 603, 606, 613 (2007)  
the fact that a possible alternative is beyond the Commission's power to implement, does not absolve the Commission of any duty to consider it; LBP-07-9, 65 NRC 603, 639 (2007)  
the NEPA alternatives analysis is the heart of the environmental impact statement; LBP-07-9, 65 NRC 603, 606, 631 (2007)
- 10 C.F.R. Part 51, Subpart A, Appendix B  
heat shock cannot be treated generically but must instead be addressed on a case-by-case basis; CLI-07-16, 65 NRC 378 (2007)

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- impacts of design basis accidents at spent fuel storage installations are characterized as small, and so, no site-specific NEPA review is required; CLI-07-8, 65 NRC 133 (2007)
- issues on which the Commission can draw generic conclusions applicable to all existing nuclear power plants, or to a specific subgroup of plants are identified as "Category 1" issues; LBP-07-4, 65 NRC 311 (2007)
- license renewal applicants must address environmental issues for which the Commission was not able to make generic environmental findings; LBP-07-4, 65 NRC 311 (2007)
- 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1
- alternatives to mitigate severe accidents must be considered for all plants that have not previously considered such alternatives; LBP-07-4, 65 NRC 312 (2007)
- applicant's environmental report is not required to contain analyses of environmental impacts identified as "Category 1," or "generic," issues; LBP-07-4, 65 NRC 310 (2007)
- definitions are provided for the three significance levels of environmental issues; LBP-07-1, 65 NRC 100 n.323 (2007); LBP-07-6, 65 NRC 474 n.213 (2007)
- discharge of chlorine or other biocides is a Category 1, out-of-scope issue in a license renewal proceeding; LBP-07-4, 65 NRC 324 (2007)
- the Category-2 environmental issues listed in NRC regulations include only one thermal effect, heat shock; CLI-07-16, 65 NRC 390 (2007)
- the Commission has specifically excluded emergency planning from license renewal proceedings because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal; LBP-07-4, 65 NRC 335-36 (2007)
- the expected increase in the volume of spent fuel from an additional 20 years of operation can be safely accommodated onsite with small environmental effects; CLI-07-3, 65 NRC 17 (2007)
- 10 C.F.R. Part 52
- in determining the acceptability of an ESP site, the NRC Staff must consider hydrogeologic characteristics; LBP-07-1, 65 NRC 55 (2007)
- local geologic and hydrological characteristics must be defined because these parameters may bear on the potential consequences of radioactive materials escaping from a plant; LBP-07-1, 65 NRC 55 (2007)
- the effects of dewatering during construction on the existing structures is reviewed during the COL stage; LBP-07-1, 65 NRC 48 (2007)
- 10 C.F.R. 52.3
- an early site permit holder may not actually commence construction of any reactors on the site without having applied for and received a separate construction permit or combined operating license from the NRC; LBP-07-9, 65 NRC 550 n.5 (2007)
- 10 C.F.R. 52.3(b)
- an early site permit focuses on the suitability of a proposed site, and is defined as a Commission approval for a site or sites for one or more nuclear power facilities; LBP-07-9, 65 NRC 550-51 (2007)
- 10 C.F.R. 52.17
- an ESP applicant must submit the information required by 10 C.F.R. 50.34(a)(12) and (b)(10) and demonstrate that the characteristics of the proposed site comply with 10 C.F.R. Part 100; LBP-07-1, 65 NRC 41 (2007)
- applicant has the option to use either plant-specific information or a surrogate plant or plants via a plant parameter envelope to satisfy the regulatory requirements; LBP-07-1, 65 NRC 85 (2007)
- ESP applicants must provide information regarding the interface between the proposed site and facility and the functional or operational needs of the facility from the site's natural and environmental resources, the facility's capability to withstand natural and manmade environmental hazards of the site, and the direct impact of the facility on the site's natural and environmental resources; LBP-07-1, 65 NRC 85 (2007)
- radiological consequences of design basis accidents must be analyzed to demonstrate that any new nuclear unit or units could be sited at the proposed ESP site without undue risk to the health and safety of the public; LBP-07-1, 65 NRC 92 (2007)
- Staff's EIS analysis for an early site permit need not include an assessment of the benefits (e.g., need for power); LBP-07-1, 65 NRC 99 (2007)

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- 10 C.F.R. 52.17(a)(1)  
a site safety assessment that demonstrates the acceptability of the site under the radiological consequence evaluation factors identified in section 50.34(a)(1) is required; LBP-07-1, 65 NRC 92 (2007)
- 10 C.F.R. 52.17(a)(2)  
the environmental report must focus on the environmental effects of the construction and operation of a reactor and need not include an assessment of the benefits (for example, need for power); LBP-07-3, 65 NRC 270 n.20 (2007); LBP-07-9, 65 NRC 559 n.31 (2007)  
with regard to reasonable alternatives, at the ESP stage a discussion of the benefits, including need for power, is not necessary; LBP-07-1, 65 NRC 36 n.14 (2007)
- 10 C.F.R. 52.18  
a final environmental impact statement must be prepared and it must focus on the environmental effects of construction and operation of the reactors covered by the early site permit application; LBP-07-9, 65 NRC 604 (2007)  
a long-term productivity assessment can only be performed by discussing the benefits of operating the unit, which does not need to be assessed at the ESP stage; LBP-07-1, 65 NRC 102 (2007)  
deferral of the NEPA analysis of the need for power until the combined operating license stage does not violate NEPA; LBP-07-9, 65 NRC 604 (2007)  
ESP applications are partial construction permits and, as such, the NRC Staff must prepare an EIS that includes an evaluation of alternative sites to determine whether there is any obviously superior alternative to the site proposed; LBP-07-1, 65 NRC 72-73, 99 (2007); LBP-07-9, 65 NRC 606 (2007)  
review of the ESP application should provide for an adequate transition between the ESP application and an application for a COL that references the ESP; LBP-07-1, 65 NRC 88 (2007)  
Staff's analysis of alternatives must include a discussion of the no-action alternative, exclusive of the portion dealing with the need for power, and a comparison of alternative sites; LBP-07-1, 65 NRC 100 (2007)  
Staff's EIS analysis for an early site permit need not include an assessment of the benefits (e.g., need for power); LBP-07-1, 65 NRC 99 (2007); LBP-07-9, 65 NRC 559 n.31, 606 (2007)  
the determination of the final balance among conflicting factors must be made at the CP or COL stage because the regulations exempt the FEIS from covering, and the board from considering, at the early site permit stage, the prospective benefits such as the need for power; LBP-07-9, 65 NRC 615 (2007)  
the EIS must include an evaluation of alternative sites, but consideration of system design alternatives is not precluded; LBP-07-9, 65 NRC 639 (2007)  
the method prescribed by NUREG-1555 for generating alternative sites is a reasonable and fair method for conducting the alternatives analysis; LBP-07-9, 65 NRC 612 (2007)
- 10 C.F.R. 52.21  
an early site permit is categorized as a partial construction permit but its issuance does not authorize an applicant to construct nuclear power reactors; LBP-07-9, 65 NRC 550 (2007)  
ESP applications are partial construction permits and, as such, the NRC Staff must prepare an EIS; LBP-07-1, 65 NRC 72 (2007)  
ESPs are defined as partial construction permits and, as such, are subject to the hearing requirements that are mandated under AEA § 189a and to all procedural requirements in 10 C.F.R. Part 2 that are applicable to construction permits; LBP-07-1, 65 NRC 35 (2007)  
in conducting their sufficiency review, licensing boards are directed to make specific findings; LBP-07-1, 65 NRC 36 (2007)  
on AEA Safety Issue 2, the board must decide whether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors having the characteristics that fall within the parameters for the site can be constructed without undue risk to the health and safety of the public; LBP-07-9, 65 NRC 557, 570, 594, 599 (2007)  
seismic siting factors are part of the safety determination a board must make in an early site permit proceeding; LBP-07-9, 65 NRC 594 (2007)  
Staff's analysis of alternatives must include a discussion of the no-action alternative, exclusive of the portion dealing with the need for power, and a comparison of alternative sites; LBP-07-1, 65 NRC 100 (2007)  
with dismissal of petitioner's final contention, an early site permit adjudication becomes an uncontested proceeding subject to the mandatory hearing requirements; LBP-07-9, 65 NRC 552 (2007)

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- 10 C.F.R. 52.25  
if applicant includes a satisfactory site redress plan, an early site permit holder may conduct certain site preparation activities under a limited work authorization; LBP-07-9, 65 NRC 550 n.5 (2007)
- 10 C.F.R. 52.27  
an early site permit is valid for up to 20 years; LBP-07-9, 65 NRC 560 (2007)
- 10 C.F.R. 52.27(c)  
an applicant for a construction permit or combined license may, at its own risk, reference in its application a site for which an early site permit application has been docketed but not granted; CLI-07-17, 65 NRC 397 n.23 (2007)
- 10 C.F.R. 52.29(a)  
an early site permit can be extended for another 20 years; LBP-07-9, 65 NRC 560 (2007)
- 10 C.F.R. 52.39  
an early site permit proceeding allows an applicant to secure early review and approval of specific siting and environmental issues as a preliminary to the submission of an application for a construction permit or combined operating license; LBP-07-1, 65 NRC 33 n.1 (2007)
- 10 C.F.R. 52.39(a)  
once an early site permit has been issued, more protective conditions may be imposed on the permit holder if the modification is necessary to ensure adequate protection of the public health and safety or the common defense and security; LBP-07-9, 65 NRC 561 n.35 (2007)
- 10 C.F.R. 52.39(a)(1)  
once an early site permit is issued, the proposed site for the nuclear reactors is approved, the regulations applicable to the site are frozen as of the date that the early site permit is issued, and the Commission may not impose new requirements on the site; LBP-07-9, 65 NRC 560, 562, 626 (2007)
- 10 C.F.R. 52.39(a)(2)  
all issues resolved in an early site permit proceeding shall be treated as resolved in a subsequent construction permit or COL proceeding that references the ESP, unless a contention is admitted under narrowly specified conditions; CLI-07-12, 65 NRC 209 (2007)  
once an early site permit is issued, the public, and in most cases, the NRC, is barred, absent a finding of necessity, from applying more stringent or contemporary regulatory siting requirements on matters that were resolved in the early site permit proceeding; LBP-07-9, 65 NRC 561, 616 (2007)  
when an early site permit is issued subject to permit conditions and COL action items identified in the Staff's review, none of the aforesaid permit conditions, the COL action items, or items listed as requiring further action or follow-up shall be treated as resolved; CLI-07-12, 65 NRC 209 (2007)
- 10 C.F.R. 54.3  
"current licensing basis" is defined; LBP-07-4, 65 NRC 308 (2007)
- 10 C.F.R. 54.17(c)  
the time frame for filing a license renewal application is no more than 20 years prior to the expiration of the current operating license; LBP-07-4, 65 NRC 299 (2007)
- 10 C.F.R. 54.21(a)(1)(i)  
age-related degradation can affect a number of reactor and auxiliary systems, including the reactor vessel, the reactor coolant system pressure boundary, steam generators, electrical cables, the pressurizer, heat exchangers, and the spent fuel pool; LBP-07-4, 65 NRC 309 (2007)
- 10 C.F.R. 54.29  
the standards defining the findings the NRC must make to support a license renewal are set forth in this regulation; LBP-07-4, 65 NRC 305 (2007)
- 10 C.F.R. 54.30  
the current licensing basis is effectively addressed and maintained by ongoing agency oversight, review, and enforcement; LBP-07-4, 65 NRC 308 (2007)
- 10 C.F.R. 54.31(b)  
license renewal proceedings generally concern requests to renew 40-year reactor operating licenses for additional 20-year terms; LBP-07-4, 65 NRC 306 (2007)
- 10 C.F.R. 61.1(a)  
regulation is limited to waste received from other persons; LBP-07-5, 65 NRC 362 (2007)
- 10 C.F.R. 61.55(a)  
depleted uranium is a Class A low-level waste; LBP-07-6, 65 NRC 474 n.210 (2007)

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- 10 C.F.R. 70.17  
an exemption can be granted if it is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest; LBP-07-6, 65 NRC 445 (2007)  
an exemption from liability insurance requirements may be granted if NRC finds that the proposed exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest; LBP-07-6, 65 NRC 463 (2007)  
because DOE has legal authority to indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents, an exemption under the Commission's regulations is authorized by law; LBP-07-6, 65 NRC 464 (2007)
- 10 C.F.R. 70.22  
a license application must include information demonstrating that the equipment, facilities, and procedures to be used at the proposed facility are adequate to protect health and minimize danger to life and property; LBP-07-6, 65 NRC 439 (2007)
- 10 C.F.R. 70.22(a)(8)  
license applications must contain proposed procedures to protect health and minimize danger to life or property; LBP-07-6, 65 NRC 467 (2007)
- 10 C.F.R. 70.22(n)  
a license application that seeks authorization to use source material or SNM in a uranium enrichment facility must include the applicant's provisions for liability insurance; LBP-07-6, 65 NRC 462 (2007)
- 10 C.F.R. 70.23  
in conducting their sufficiency review of safety matters, boards must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support the required findings; LBP-07-6, 65 NRC 437 (2007)
- 10 C.F.R. 70.23(a)(7)  
boards must independently consider the final balance among conflicting factors in the record; LBP-07-6, 65 NRC 490 (2007)
- 10 C.F.R. 70.23a  
for license applications for uranium enrichment facilities, the NRC must hold a hearing even when the license is not contested; LBP-07-6, 65 NRC 435 (2007)
- 10 C.F.R. 70.25  
applicant must submit a decommissioning funding plan for its proposed facility; LBP-07-6, 65 NRC 449 (2007)
- 10 C.F.R. 70.25(e)  
without an exemption, applicant is required to fully fund all of its estimated decommissioning costs at the time of licensing; LBP-07-6, 65 NRC 450 (2007)
- 10 C.F.R. 70.31(e)  
for license applications for uranium enrichment facilities, the NRC must hold a hearing even when the license is not contested; LBP-07-6, 65 NRC 435 (2007)
- 10 C.F.R. 70.32(k)  
in a preoperation inspection, the NRC Staff will address any changes or additions to equipment or procedures and ensure that all tie-down provisions have been satisfied; LBP-07-6, 65 NRC 447 n.62 (2007)
- 10 C.F.R. 70.61  
recordkeeping and reporting commitments for occupational exposure to radiation exceeding the dose limits are described; LBP-07-6, 65 NRC 470 (2007)
- 10 C.F.R. 70.61(b), (c)  
Staff's definitions of "highly unlikely" and "unlikely" for ensuring compliance with the performance requirements are reasonable; LBP-07-6, 65 NRC 456 (2007)
- 10 C.F.R. 70.62, 70.65  
with its license application, applicant must submit a description of its safety program; LBP-07-6, 65 NRC 440 (2007)
- 10 C.F.R. 70.72  
additional opportunities for public input for minor changes or modifications not requiring a license amendment are not required; LBP-07-6, 65 NRC 461-62 (2007)



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- 10 C.F.R. 70.74  
recordkeeping and reporting commitments for occupational exposure to radiation exceeding the dose limits are described; LBP-07-6, 65 NRC 470 (2007)
- 10 C.F.R. 71.23  
Staff may withhold some facts underlying its findings and conclusions on terrorism-related risks as safeguards information; CLI-07-11, 65 NRC 151 (2007)
- 10 C.F.R. 72.50  
transfer of any NRC license is precluded unless the Commission both finds the transfer in accordance with the AEA and gives its consent in writing; CLI-07-19, 65 NRC 425 (2007)
- 10 C.F.R. 72.212(b)(2)(i)(B) and (b)(3)  
the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 366, 367, 369 (2007)
- 10 C.F.R. 73.1  
the “design basis threat” rule describes general adversary characteristics that designated NRC licensees, including nuclear power plant licensees, are required to defend against with high assurance; CLI-07-8, 65 NRC 128 n.9 (2007)
- 10 C.F.R. 73.55(a)  
reactor security plans require protection against the design basis threat; CLI-07-11, 65 NRC 150 n.10 (2007)
- 10 C.F.R. Part 100  
local geologic and hydrological characteristics must be defined because these parameters may bear on the potential consequences of radioactive materials escaping from a plant; LBP-07-1, 65 NRC 55 (2007)  
radiological consequences of design basis accidents must be analyzed to demonstrate that any new nuclear unit or units could be sited at the proposed ESP site without undue risk to the health and safety of the public; LBP-07-1, 65 NRC 92 (2007)  
seismic siting factors are part of the safety determination a board must make in an early site permit proceeding; LBP-07-9, 65 NRC 594 (2007)
- 10 C.F.R. 100.20  
factors to be considered when evaluating a proposed site include population density and use characteristics, the nature and proximity of man-related hazards such as airports, and the physical characteristics of the site including seismology, meteorology, geology, and hydrology; LBP-07-9, 65 NRC 600 (2007)
- 10 C.F.R. 100.20(c)  
in determining the acceptability of an ESP site, the NRC Staff must consider hydrogeologic characteristics; LBP-07-1, 65 NRC 55 (2007)
- 10 C.F.R. 100.20(c)(1)  
the Commission will consider the physical characteristics of the proposed site, including the geologic and seismic siting factors; LBP-07-9, 65 NRC 594 (2007)
- 10 C.F.R. 100.20(c)(3)  
completeness and clarity are of paramount importance in meeting the hydrology requirements; LBP-07-9, 65 NRC 571 (2007)  
for site characterization, the hydrological parameters that should be identified and described are groundwater coefficients of dispersion and adsorption, groundwater velocities, travel times, gradients, permeabilities, porosities, and water table elevations or piezometric levels, surface water transport parameters, and potential pathways of contamination to groundwater and surface water users; LBP-07-1, 65 NRC 54 n.110 (2007)  
site characterization issues are safety-related because, in determining the acceptability of a site, factors important to hydrological radionuclide transport must be obtained from onsite measurements; LBP-07-9, 65 NRC 569, 570, 573, 601 (2007)  
the Staff must address factors important to hydrologic radionuclide transport in the groundwater using onsite measurements of the relevant characteristics, including, but not limited to, adsorption and retention coefficients of the geologic strata, ground water velocities, and travel distances to discharge zones; LBP-07-1, 65 NRC 55 (2007)

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- 10 C.F.R. 100.21  
nonseismic siting criteria include the requirement to have an exclusion area and a low population zone and to consider the population center distance, site atmospheric dispersion characteristics, radiological release limits and dose consequences, hydrology, and the proximity of transportation routes, industrial locations, and military facilities; LBP-07-9, 65 NRC 600 (2007)
- 10 C.F.R. 100.21(c)(1)  
guidelines are provided for the description of the exposure pathways and the calculation methods to estimate doses to the maximally exposed individual and to the population surrounding a site; LBP-07-1, 65 NRC 92 (2007)
- 10 C.F.R. 100.23  
a thorough characterization of the seismic sources surrounding a site is required; LBP-07-1, 65 NRC 65 (2007)  
geologic and seismic siting criteria include the geological, seismological, and engineering characteristics of the site and the PPE, the ability to satisfy the safe shutdown earthquake ground motion criteria, the potential for surface tectonic and nontectonic deformations and other factors such as soil and rock stability, liquefaction potential, and slope stability; LBP-07-9, 65 NRC 500 (2007)
- 10 C.F.R. 100.23(a)  
geologic, seismological, and engineering characteristics and geologic and seismic siting factors govern early site permit siting decisions; LBP-07-9, 65 NRC 594 (2007)
- 10 C.F.R. 100.23(c)  
ESP applicants must provide a thorough characterization of the seismological characteristics of a proposed site and its environs to allow an estimate of the safe shutdown earthquake ground motion and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site; LBP-07-1, 65 NRC 62 (2007)  
the engineering characteristics of a site and its environs must be investigated in sufficient scope and detail to permit an adequate evaluation of the proposed site; LBP-07-1, 65 NRC 66 (2007)
- 10 C.F.R. 100.23(d)  
the seismic siting factors for design must also include the potential for surface tectonic deformations; LBP-07-1, 65 NRC 62 (2007)
- 10 C.F.R. 100.23(d)(1)  
the safe shutdown earthquake for a site is characterized by both horizontal and vertical free-field ground motion response spectra at the free ground surface; LBP-07-1, 65 NRC 64 (2007)
- 10 C.F.R. 100.23(d)(4)  
evaluation of siting factors such as soil and rock stability, liquefaction potential, and natural and artificial slope stability is required; LBP-07-1, 65 NRC 68 (2007)
- 10 C.F.R. 140.13b  
proof of adequate liability insurance must be filed with the NRC before a license for the operation of a uranium enrichment facility may be issued; LBP-07-6, 65 NRC 463 (2007)  
the limit of liability for which DOE will indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents is in excess of the liability insurance required under NRC regulations; LBP-07-6, 65 NRC 463 n.157 (2007)
- 10 C.F.R. 140.15  
proof of adequate liability insurance must be filed with the NRC before a license for the operation of a uranium enrichment facility may be issued; LBP-07-6, 65 NRC 463 (2007)
- 40 C.F.R. 141.2  
maximum contaminant level goals are nonenforceable health goals set at the level at which no known or anticipated adverse effects on the health of persons would occur, and which allow an adequate margin of safety; LBP-07-9, 65 NRC 580 n.67 (2007)
- 40 C.F.R. 141.55  
maximum contaminant level goals for tritium and other beta emitters are set at zero; LBP-07-9, 65 NRC 580 n.67 (2007)
- 40 C.F.R. 141.66(d)  
the enforceable maximum contaminant level for tritium and other beta emitters is set at 20,000 pCi/L, a level that avoids producing an annual dose equivalent to the total body or any internal organ greater than 4 millirem/yr; LBP-07-9, 65 NRC 580 n.67, 581 (2007)

**LEGAL CITATIONS INDEX**  
**REGULATIONS**

- 40 C.F.R. 190.02(b)  
the EPA standard of 25 mrem only applies to the uranium fuel cycle, which only includes the generation of electricity by a light-water-cooled nuclear power plant; LBP-07-9, 65 NRC 624 (2007)  
the term "uranium fuel cycle operations" includes milling, conversion, enrichment, fabrication, use, and reprocessing of fuel which occur at different sites; LBP-07-9, 65 NRC 623 n.111 (2007)
- 40 C.F.R. 190.10  
this regulation is not expressed in terms of a particular site, but instead applies the 25-mrem/yr dose limit to radiation from uranium fuel cycle operations; LBP-07-9, 65 NRC 623 n.111 (2007)
- 40 C.F.R. 190.10(a)  
section 20.1301(e) is neither reactor- nor site-specific, and applies to doses resulting from exposures to planned discharges of radioactive materials, except radon and its daughters, to the general environment from uranium fuel cycle operations; LBP-07-9, 65 NRC 584 (2007)
- 40 C.F.R. 1502.14  
the heart of the environmental impact statement is the alternatives analysis; LBP-07-9, 65 NRC 603, 606, 631 (2007)
- 40 C.F.R. 1502.14(a)  
in reviewing the applicant's process for identifying the best alternative sites that could reasonably be found within the region of interest, the Staff must rigorously explore and exercise skepticism in dealing with the self-serving statements from the primary beneficiary of the project; LBP-07-9, 65 NRC 636 (2007)
- 40 C.F.R. 1505.2(c)  
a monitoring and enforcement program is required as part of the practicable means to avoid or minimize environmental harm from the selected alternative; LBP-07-6, 65 NRC 458 (2007)
- 40 C.F.R. 1508.7  
although environmental impacts standing alone may be negligible, when aggregated they could have significant detrimental consequences on the environment; LBP-07-1, 65 NRC 82 (2007)
- 40 C.F.R. 1508.8  
the effects that must be considered in an environmental impact statement are those that are caused by the action; LBP-07-4, 65 NRC 330 n.246 (2007)
- 40 C.F.R. 1508.27(b)(7)  
agencies must consider the environmental effects of related actions; CLI-07-14, 65 NRC 218 (2007)  
although an early site permit does not authorize any construction activity, the NRC Staff is still required by Council on Environmental Quality regulations to consider actions that are related to other actions that could lead to a significant impact on the environment; LBP-07-1, 65 NRC 73 n.199, 99 (2007)

**LEGAL CITATIONS INDEX  
STATUTES**

- Administrative Procedure Act, 5 U.S.C. § 706(2)(A)  
reviewing courts must decide the narrow issue as to whether an agency action was arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law; LBP-07-9, 65 NRC 602 n.92 (2007)
- Atomic Energy Act, 103d, 42 U.S.C. § 2133(d)  
on AEA Safety Issue 1, the Board must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of the early site permit will be inimical to the common defense and security or to the health and safety of the public; LBP-07-9, 65 NRC 556, 598 (2007)
- Atomic Energy Act 147, 42 U.S.C. § 2167  
Staff may withhold some facts underlying its findings and conclusions on terrorism-related risks as safeguards information or national security information; CLI-07-11, 65 NRC 151 (2007)
- Atomic Energy Act, 170, 42 U.S.C. § 2210  
DOE will indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents to the extent that licensee cannot obtain commercial insurance at reasonable rates; LBP-07-6, 65 NRC 463 (2007)
- Atomic Energy Act, 182, 42 U.S.C. § 2232  
applications and statements made in connection with applications are required to be made under oath or affirmation; CLI-07-12, 65 NRC 208 (2007)
- Atomic Energy Act, 184, 42 U.S.C. § 2234  
transfer of any NRC license is precluded unless the Commission both finds the transfer in accordance with the AEA and gives its consent in writing; CLI-07-18, 65 NRC 405 n.2 (2007); CLI-07-19, 65 NRC 425 (2007)
- Atomic Energy Act, 186  
NRC may revoke any license for a material false statement in the application; CLI-07-12, 65 NRC 208 (2007)
- Atomic Energy Act, 189a, 42 U.S.C. § 2239(a)  
the Commission must hold a hearing on each application for a construction permit for a facility, regardless of whether any person requests a hearing; LBP-07-9, 65 NRC 551, 554, 629 (2007)  
to intervene as of right in any Commission licensing proceeding, a petitioner must demonstrate that its interest may be affected by the proceeding; CLI-07-18, 65 NRC 408 (2007); CLI-07-22, 65 NRC 526 (2005)  
uncontested early site permit proceedings are still subject to a mandatory hearing; CLI-07-14, 65 NRC 217 (2007); CLI-07-12, 65 NRC 205 (2007)
- Atomic Energy Act, 189a(1)(A), 42 U.S.C. § 2239(a)(1)(A) (2000)  
NRC must hold a hearing on each application under AEA § 103 or 104b for a construction permit for a facility; LBP-07-1, 65 NRC 35 (2007)  
NRC must provide a hearing upon the request of any person whose interest may be affected by the proceeding; LBP-07-4, 65 NRC 293 (2007)  
with dismissal of petitioner's final contention, an early site permit adjudication becomes an uncontested proceeding subject to the mandatory hearing requirements; LBP-07-9, 65 NRC 552 (2007)

## LEGAL CITATIONS INDEX

### STATUTES

- Atomic Energy Act, 42 U.S.C. § 2243(b)  
for license applications for uranium enrichment facilities, the NRC must hold a hearing even when the license is not contested; LBP-07-6, 65 NRC 435 (2007)
- Clean Water Act, 101(f), 33 U.S.C. § 1251(f)  
NRC abstinence from setting water quality standards is fully consistent with congressional general intent that the Clean Water Act is to be implemented in a way that will avoid needless duplication and unnecessary delays at all levels of government; CLI-07-16, 65 NRC 389 (2007)
- Clean Water Act, 33 U.S.C. § 1326  
Congress intended the word “effluent” to include heat; CLI-07-16, 65 NRC 377 n.17 (2007)  
to discharge heated water into the ocean from a nuclear facility, the licensee needs an NPDES permit from the water supply and pollution control commission; CLI-07-16, 65 NRC 377 n.17 (2007)
- Clean Water Act, 316(a), 33 U.S.C. § 1326(a)  
NPDES permits may address thermal discharges into bodies of water; CLI-07-16, 65 NRC 377 (2007)
- Clean Water Act, 33 U.S.C. § 1342  
to discharge heated water into the ocean from a nuclear facility, the licensee needs an NPDES permit from the water supply and pollution control commission; CLI-07-16, 65 NRC 377 n.17 (2007)
- Clean Water Act, 402(b), 33 U.S.C. § 1342(b)  
heat shock falls within the parameters of the NPDES; CLI-07-16, 65 NRC 376 (2007)
- Clean Water Act, 402(b)(1)(B), 33 U.S.C. § 1342(b)(1)(B)  
no state may issue an NPDES permit for a period longer than 5 years; CLI-07-16, 65 NRC 383 (2007)
- Clean Water Act, 502(11), 33 U.S.C. § 1362(11)  
“effluent limitation” refers to chemical, physical, biological, and other constituents that are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean; CLI-07-16, 65 NRC 377 n.17 (2007)
- Clean Water Act, 511(c)  
the Commission cannot question or reexamine the effluent limitations or other requirements in permits issued by the relevant permitting authorities; CLI-07-16, 65 NRC 387 (2007)
- Clean Water Act, 511(c)(2), 33 U.S.C. § 1371(c)(2)  
NRC is precluded from either second-guessing the conclusions in NPDES permits or imposing its own effluent limitations, thermal or otherwise; CLI-07-16, 65 NRC 377 n.19 (2007); CLI-07-16, 65 NRC 387 (2007)
- Clean Water Act, 511(c)(2), 33 U.S.C. § 1371(c)(2)  
when enacting this section, Congress specifically intended to deprive the NRC’s predecessor agency (the Atomic Energy Commission) of authority over pollutant discharges; CLI-07-16, 65 NRC 377 (2007)
- Low-Level Radioactive Waste Policy Act of 1985, 42 U.S.C. § 2021b(7)  
“disposal” is defined generally as the permanent isolation of low-level radioactive waste pursuant to the requirements established by the Nuclear Regulatory Commission under applicable laws; LBP-07-5, 65 NRC 362 (2007)
- Low-Level Radioactive Waste Policy Act of 1985, 42 U.S.C. § 2021c(a)(1)  
the permanent isolation of low-level radioactive waste is not broadly required, but each state shall be responsible for providing, either by itself or in cooperation with other states, for the disposal of low-level radioactive waste generated within the state; LBP-07-5, 65 NRC 362 (2007)
- National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq.*  
NRC is not required to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities; CLI-07-10, 65 NRC 145 (2007)  
NRC is required to take a hard look at the potential environmental impacts of a license renewal; CLI-07-16, 65 NRC 376 (2007)  
the potential impacts of terrorism fall outside the scope of a license renewal proceeding and are not appropriate subjects for analysis; CLI-07-9, 65 NRC 140-41 (2007)
- National Environmental Policy Act, 101(a), 42 U.S.C. § 4331(a)  
the federal government’s policy is to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans; LBP-07-9, 65 NRC 558 (2007)

## LEGAL CITATIONS INDEX

### STATUTES

- National Environmental Policy Act, 102(1), 42 U.S.C. § 4332(1)  
to the fullest extent possible all agencies of the federal government shall comply with the procedures in NEPA § 102(2); LBP-07-9, 65 NRC 603 (2007)
- National Environmental Policy Act, 102(2)(A), 42 U.S.C. § 4332(2)(A)  
an agency must use a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking that may have an impact on man's environment; LBP-07-1, 65 NRC 101 (2007); LBP-07-6, 65 NRC 486 (2007); LBP-07-9, 65 NRC 604 (2007)
- National Environmental Policy Act, 102(2)(A), (C), and (E), 42 U.S.C. § 4332(2)(A), (C), and (E)  
all federal agencies are, to the fullest extent possible, to use a systematic and interdisciplinary approach in considering environmental issues and, before taking any major federal action significantly affecting the quality of the human environment, to generate a detailed environmental impact statement; LBP-07-9, 65 NRC 558, 602, 604-14 (2007)  
in a mandatory proceeding, the licensing board acts as the initial decisionmaker, studying the FEIS, evaluating it, asking pertinent questions, and deciding whether the license should be issued, denied, or appropriately conditioned; LBP-07-9, 65 NRC 602-03 (2007)
- National Environmental Policy Act, 102(2)(C), 42 U.S.C. § 4332(2)(C)  
each agency must prepare an environmental impact statement for any major federal action significantly affecting the quality of the human environment; LBP-07-4, 65 NRC 309 (2007); LBP-07-9, 65 NRC 603 (2007)  
NRC must consult with and obtain comments from other federal, state, and local agencies and from the public prior to making detailed statements on environmental impacts; LBP-07-1, 65 NRC 103 (2007)
- National Environmental Policy Act, 102(2)(C)(i)-(v)  
an agency must include a detailed statement on the environmental impact of the proposed action, any unavoidable adverse environmental effects, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and irreversible and irretrievable commitments of resources that would be involved in the proposed action should it be implemented; LBP-07-1, 65 NRC 102 (2007); LBP-07-6, 65 NRC 487 (2007)
- National Environmental Policy Act, 102(2)(C)(iii), 42 U.S.C. § 4332(2)(C)(iii)  
an agency must prepare a detailed statement on any adverse environmental effects that cannot be avoided should the proposal be implemented; LBP-07-4, 65 NRC 312 n.139 (2007)  
every federal agency for every major federal action significantly affecting the quality of the human environment must prepare a detailed statement on alternatives to the proposed action; LBP-07-1, 65 NRC 73 n.199 (2007); LBP-07-9, 65 NRC 587, 603, 606-13 (2007)  
NEPA does not require federal agencies to decide whether the applicant's ER is adequate, but it does require federal agencies to examine all reasonable alternatives; LBP-07-9, 65 NRC 635 (2007)  
the method prescribed by NUREG-1555 for generating alternative sites is a reasonable and fair method for conducting the alternatives analysis; LBP-07-9, 65 NRC 612 (2007)
- National Environmental Policy Act, 102(2)(C)(iv)  
the discussion of whether the FEIS adequately covers the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity should be performed if and when the early site permit holder applies for a construction permit or combined operating license; LBP-07-9, 65 NRC 613 (2007)
- National Environmental Policy Act, 102(2)(C)(v)  
the granting of an early site permit would not, in itself, authorize any activity that would have any irreversible or irretrievable commitments; LBP-07-9, 65 NRC 613-14 (2007)
- National Environmental Policy Act, 102(2)(E), 42 U.S.C. § 4332(2)(E)  
an agency must study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources; LBP-07-1, 65 NRC 100, 103 (2007); LBP-07-6, 65 NRC 484, 489 (2007)
- Price-Anderson Act, 42 U.S.C. § 2210(d)(2)(B)  
the limit of liability for which DOE will indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents is in excess of the liability insurance required under NRC regulations; LBP-07-6, 65 NRC 463 n.157 (2007)

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### STATUTES

USEC Privatization Act § 3113, 42 U.S.C. § 2297h-11

transfer of depleted uranium to DOE for dispositioning is allowed for an NRC-licensed enrichment licensee; LBP-07-6, 65 NRC 474 (2007)

3 Vt. Stat. Ann. § 814(b)

the timely filing of an application to renew a state license tolls the license's expiration until the state's issuance of a final ruling on that application or, if the State denies the application, until either the last day for seeking judicial review of the ruling or a date fixed by the reviewing court; CLI-07-16, 65 NRC 379 (2007)

**LEGAL CITATIONS INDEX  
OTHERS**

- ABA Model Code of Judicial Conduct (Feb. 2007), Canon 1, Rule 1.1; Canon 2, Rules 2.2, 2.4  
licensing boards must be independent in their decisionmaking, ruling without fear or favor, and base their  
rulings solely on the facts and the law applicable in any given case, no matter where this leads,  
whether for or against any party, including the NRC Staff, a license applicant, or a petitioner;  
LBP-07-4, 65 NRC 339 n.286 (2007)
- Black's Law Dictionary* (2d ed. 2001)  
for purposes of NPDES permits, "effluent" is defined as liquid waste that is discharged into a river,  
lake, or other body of water; CLI-07-16, 65 NRC 377 n.16 (2007)
- S. Rep. No. 87-1677 (1962), as reprinted in 1962 U.S.C.C.A.N. 2207, 2214  
Congress authorized the Commission to establish one or more licensing boards largely because it was  
believed that with decisions being made by a semi-independent and technically qualified body, public  
confidence in the regulatory process will be further enhanced; LBP-07-6, 65 NRC 490 n.299 (2007)
- S. Rep. No. 92-1236, 92d Cong., 2d Sess. (1972) (Conference Report on S. 2770), *Legislative History* at  
198  
when enacting section 511(c)(2) of the Clean Water Act, Congress specifically intended to deprive the  
NRC's predecessor agency (the Atomic Energy Commission) of authority over pollutant discharges;  
CLI-07-16, 65 NRC 377 n.20 (2007)
- Sup. Ct. R. 10  
a conflict in the Circuits is a key criterion informing the exercise of the Supreme Court's certiorari  
jurisdiction; CLI-07-8, 65 NRC 129 n.15 (2007)



## SUBJECT INDEX

### ABEYANCE OF HEARING REQUEST

the Commission holds a hearing request in abeyance because Staff action may obviate the need for the Commission to address the hearing request or the dispute may be resolved by binding arbitration; CLI-07-15, 65 NRC 221 (2007)

### ABEYANCE OF PROCEEDING

a petition seeking review of an order granting or denying an abeyance motion meets NRC's standard for interlocutory review because the appealed order would have an immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer's final decision; CLI-07-6, 65 NRC 112 (2007)

because of his decision not to challenge the immediate effectiveness of his enforcement order, less weight is accorded to the severity of the potential harm to the subject of an enforcement order from holding a proceeding in abeyance; CLI-07-6, 65 NRC 112 (2007)

in analyzing the abeyance question, the risk of harm that the subject of the enforcement action could suffer from an abeyance order is balanced against the risk of harm DOJ could suffer from the NRC Staff moving forward in its enforcement hearing; CLI-07-6, 65 NRC 112 (2007)

NRC is loath to permit a criminal defendant to use its procedures to do an end run around rules prescribed by the Supreme Court and implicitly approved by Congress; CLI-07-6, 65 NRC 112 (2007)  
the Commission is generally inclined to accommodate an abeyance request from DOJ as long as it provides at least some showing of potential detrimental effect on its parallel criminal case; CLI-07-6, 65 NRC 112 (2007)

the weight to be given the Staff's reason for seeking an abeyance turns on the quality of the factual record; CLI-07-6, 65 NRC 112 (2007)

### ADJUDICATORY BOARDS

the Commission will not be drawn into commercial contractual disputes, absent a concern for the public health and safety or the common defense and security, except to carry out its responsibilities to act to enforce its licenses, orders, and regulations; CLI-07-15, 65 NRC 221 (2007)

### ADMINISTRATIVE PROCEDURE ACT

the opportunity for cross-examination under Subpart L is equivalent to the opportunity for cross-examination under the Administrative Procedure Act; LBP-07-4, 65 NRC 281 (2007)

### AGING MANAGEMENT

age-related degradation can affect a number of reactor and auxiliary systems, including the reactor vessel, the reactor coolant system pressure boundary, steam generators, electrical cables, the pressurizer, heat exchangers, and the spent fuel pool; LBP-07-4, 65 NRC 281 (2007)

terrorism contentions are, by their very nature, directly related to security and are therefore, under NRC's license renewal rules, unrelated to the detrimental effects of aging, and, consequently, are beyond the scope of, not material to, and inadmissible in, a license renewal proceeding; CLI-07-9, 65 NRC 139 (2007)

the NRC license renewal safety review focuses upon those potential detrimental effects of aging that are not routinely addressed by ongoing regulatory oversight programs; LBP-07-4, 65 NRC 281 (2007)

### AMENDMENT OF CONTENTIONS

a reply to an answer may not be used as a vehicle to raise new arguments or claims not found in the original contention or be used to cure an otherwise deficient contention; LBP-07-4, 65 NRC 281 (2007)

## SUBJECT INDEX

### APPEALS

agency decisions on rulemaking petitions are judicially reviewable; CLI-07-13, 65 NRC 211 (2007)  
the Commission regularly affirms board decisions on the admissibility of contentions where the appellant points to no error of law or abuse of discretion; CLI-07-20, 65 NRC 499 (2007)  
the purpose of an appeal is to point out errors made in the board's decision, not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the board; CLI-07-20, 65 NRC 499 (2007)  
when intervenor has no claim remaining in either adjudication, a request for judicial review must be brought immediately if at all; CLI-07-13, 65 NRC 211 (2007)

### APPEALS, INTERLOCUTORY

appeals of rejected contentions are permitted only when a petitioner claims that the board wrongly rejected all contentions; CLI-07-2, 65 NRC 10 (2007)  
in exceptional instances, the Commission may in its discretion grant a petition for interlocutory review, when a party demonstrates that a ruling threatens it with immediate and serious irreparable impact or affects the basic structure of the proceeding in a pervasive or unusual matter; CLI-07-2, 65 NRC 10 (2007)  
the Commission generally disfavors interlocutory, piecemeal appeals; CLI-07-2, 65 NRC 10 (2007)

### APPELLATE BRIEFS

new information, not part of the original contention, may not be introduced for the first time on appeal; CLI-07-8, 65 NRC 124 (2007)

### APPELLATE REVIEW

before an early site permit can be made effective, the Commission must review and approve the Atomic Safety and Licensing Board's initial decision authorizing its issuance; CLI-07-4, 65 NRC 24 (2007)

### APPLICANTS

although the primary duties of NEPA fall on the NRC Staff in NRC proceedings, the initial requirement to analyze the environmental impacts of an action, including license renewal, is directed to applicants; LBP-07-4, 65 NRC 281 (2007)

### AQUATIC IMPACTS

an environmental analysis relating to aquatic impacts must, as a practical matter, have a baseline from which to operate; LBP-07-3, 65 NRC 237 (2007)  
analysis of entrainment and impingement of fish, and heat shock, is required only for plants with once-through cooling or cooling ponds because it has been determined generically that such impacts are small for plants that use cooling towers; LBP-07-4, 65 NRC 281 (2007)  
except for its overall NEPA balancing, the NRC can limit its analysis of aquatic impacts to those determined by the Environmental Protection Agency, when EPA has analyzed an alternative technology extensively and made conclusions as to its suitability; LBP-07-3, 65 NRC 237 (2007)  
nothing in the agency's Part 51 NEPA regulations or the Staff's ER preparation guidance in regard to providing a description of the local environment indicates exactly how, as a general matter, a baseline for NEPA analysis is to be established; LBP-07-3, 65 NRC 237 (2007)

### ATOMIC ENERGY ACT

an organization's promotion of the public interest, environmental protection, and consumer protection are broad interests shared with many others and too general to constitute a protected interest; CLI-07-18, 65 NRC 399 (2007)  
for license applications for uranium enrichment facilities, NRC shall conduct a single adjudicatory hearing on the record with regard to the licensing of the construction and operation of the facility; LBP-07-6, 65 NRC 429 (2007)  
interest in the promotion of economic use of energy falls outside the protected zone of interests; CLI-07-18, 65 NRC 399 (2007)  
NRC must hold a hearing on each application for a construction permit for a facility; LBP-07-1, 65 NRC 27 (2007)  
NRC must provide a hearing upon the request of any person whose interest may be affected by the proceeding; LBP-07-4, 65 NRC 281 (2007)  
on uncontested issues in an early site permit proceeding, the board must independently evaluate the record and the adequacy of the Staff's review and then decide six fundamental issues that are specified by the law and regulations; LBP-07-9, 65 NRC 539 (2007)

## SUBJECT INDEX

the board in an uncontested early site permit proceeding must decide whether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors having the characteristics that fall within the parameters for the site can be constructed without undue risk to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)

### ATOMIC SAFETY AND LICENSING APPEAL BOARD

although this board was disbanded in 1991, its decisions still carry precedential value; CLI-07-16, 65 NRC 371 (2007)

### BACKFITTING

once an early site permit is issued, the Commission may not impose new requirements on the site unless they are necessary to ensure adequate protection of the public health and safety or the common defense and security; LBP-07-9, 65 NRC 539 (2007)

### BURDEN OF PERSUASION

applicant has the burden of persuasion on whether its test program assures that all testing required to demonstrate that SSC will perform satisfactorily in service is identified and performed; LBP-07-2, 65 NRC 153 (2007)

### CERTIFIED QUESTIONS

outside the context of petitions for interlocutory review, the Commission may take interlocutory review of questions or rulings that a licensing board either refers or certifies to the Commission; CLI-07-1, 65 NRC 1 (2007)

where appropriate, the Commission will exercise its authority to instruct the board to certify novel license renewal issues; CLI-07-1, 65 NRC 1 (2007)

### CERTIORARI

a conflict in the Circuits is a key criterion informing the exercise of the Supreme Court's certiorari jurisdiction; CLI-07-8, 65 NRC 124 (2007)

### CLEAN WATER ACT

Congress severely limited NRC's scope of inquiry into section 316(a) determinations to examining whether the EPA or the state agency considered its permit to be a section 316(a) determination; CLI-07-16, 65 NRC 371 (2007)

for purposes of NPDES permits, effluent is defined as liquid waste that is discharged into a river, lake, or other body of water, and it includes heat; CLI-07-16, 65 NRC 371 (2007)

if applicant's plant utilizes a once-through cooling system, applicant shall provide a copy of a Clean Water Act § 316a variance or equivalent state permit and supporting documentation; CLI-07-16, 65 NRC 371 (2007)

NPDES permits may address thermal discharges into bodies of water; CLI-07-16, 65 NRC 371 (2007)

### COMBINED LICENSE PROCEEDING

any power level selected at the COL stage other than the target value used in the environmental impact statement's alternative energy analysis for the early site permit would constitute new information that, if found to be significant, would have to be evaluated at the construction permit or combined license application stage; CLI-07-14, 65 NRC 216 (2007)

it is appropriate to defer issues concerning the effects of short-term damage to the environment and the irretrievable commitment of resources to the construction permit or combined license stage; CLI-07-14, 65 NRC 216 (2007)

### COMMON DEFENSE AND SECURITY

a board must determine whether an ESP application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of an early site permit will be inimical to the common defense and security or to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)

### CONCRETE

the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 365 (2007)

### CONFIDENTIAL INFORMATION

if applicants and petitioners cannot agree on the terms of a confidentiality and nondisclosure agreement, then they shall inform the presiding officer, indicate specifically the areas where they disagree, and then move the presiding officer for issuance of a protective order; CLI-07-18, 65 NRC 399 (2007)

## SUBJECT INDEX

### CONSIDERATION OF ALTERNATIVES

- an agency must consider all reasonable alternatives but is not required to choose the most environmentally benign site; LBP-07-9, 65 NRC 539 (2007)
  - federal courts and the NRC use a rule of reason in identifying alternatives and do not require that unreasonable alternatives be examined; LBP-07-9, 65 NRC 539 (2007)
  - for purposes of the environmental impact statement, the potential construction and operation of the plant or plants for which the early site permit is being obtained is the proposed action that must be the focus of the board's NEPA review; LBP-07-1, 65 NRC 27 (2007)
  - it is not reasonable or necessary to consider, as a system design alternative to the application for an early site permit for Units 3 and 4, the imposition of water conservation measures on preexisting Units 1 and 2; LBP-07-9, 65 NRC 539 (2007)
  - no-action alternative discussions can be brief and can incorporate by reference other sections of an environmental report discussing the project's adverse consequences; LBP-07-3, 65 NRC 237 (2007)
  - NRC's alternatives analysis should be based around the applicant's goals, including the applicant's economic goals; LBP-07-9, 65 NRC 539 (2007)
  - Staff must evaluate alternatives to determine whether there are any obviously superior options to the proposed action; LBP-07-6, 65 NRC 429 (2007)
- See also No-Action Alternative

### CONSTRUCTION PERMIT PROCEEDING

- any power level selected at the COL stage other than the target value used in the environmental impact statement's alternative energy analysis for the early site permit would constitute new information that, if found to be significant, would have to be evaluated at the construction permit or combined license application stage; CLI-07-14, 65 NRC 216 (2007)
- it is appropriate to defer issues concerning the effects of short-term damage to the environment and the irretrievable commitment of resources to the construction permit or combined license stage; CLI-07-14, 65 NRC 216 (2007)
- whether or not any petitioner challenges the construction permit, the NRC Staff will address each COL action item at the construction permit stage; CLI-07-12, 65 NRC 203 (2007)

### CONSTRUCTION PERMITS

- an early site permit is considered a partial construction permit, and thus requires action by the Commission even in the absence of any appeal from the board's initial decision; CLI-07-12, 65 NRC 203 (2007)
- early site permits are partial construction permits and, as such, are subject to the mandatory hearing requirements under AEA § 189a; LBP-07-1, 65 NRC 27 (2007)
- the Commission must hold a hearing on each application for a construction permit for a facility; LBP-07-1, 65 NRC 27 (2007)

### CONTENTIONS

- contentions must be filed with the original petition within 60 days of notice of the proceeding in the *Federal Register*, unless a longer period is therein specified, an extension is granted, or the contentions meet certain criteria for late-filed or new contentions based on information that is available only at a later time; LBP-07-4, 65 NRC 281 (2007)
- "issues" in license transfer proceedings constitute "contentions" under 10 C.F.R. 2.309(f) and must therefore meet the standards for admissibility set forth in that regulation; CLI-07-18, 65 NRC 399 (2007)

See also Amendment of Contentions

### CONTENTIONS, ADMISSIBILITY

- a change in the controlling law in a different Circuit does not constitute previously unavailable information to excuse late filing; CLI-07-10, 65 NRC 144 (2007)
- a contention arguing that the proposed reactor does not fit into the site parameters of the ESP, or that the terms and conditions of the ESP are not met, is potentially admissible at the COL stage; CLI-07-12, 65 NRC 203 (2007)
- a contention is not cognizable unless it is material to matters that fall within the scope of the proceeding for which the licensing board has been delegated jurisdiction; LBP-07-4, 65 NRC 281 (2007)
- a contention must meet five pleading requirements; LBP-07-3, 65 NRC 237 (2007)

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- a contention of "omission" that has been cured can be dismissed as moot; CLI-07-8, 65 NRC 124 (2007)
- a contention that attacks a Commission rule, or that seeks to litigate a matter that is, or clearly is about to become, the subject of a rulemaking, is inadmissible; LBP-07-3, 65 NRC 237 (2007)
- a contention that challenges any Commission rule is outside the scope of the proceeding because, absent a waiver, no rule or regulation of the Commission is subject to attack in any adjudicatory proceeding; CLI-07-16, 65 NRC 371 (2007); LBP-07-4, 65 NRC 281 (2007)
- a contention that simply states the petitioner's views about what regulatory policy should be does not present a litigable issue; LBP-07-3, 65 NRC 237 (2007)
- a detailed summary of relevant case law on contention admissibility is presented; LBP-07-4, 65 NRC 281 (2007)
- a late-filed contention can be admitted only when the information on which the amended or new contention is based was previously unavailable; CLI-07-10, 65 NRC 144 (2007)
- a petitioner may, within the adjudicatory context, submit a request for waiver of a rule; LBP-07-4, 65 NRC 281 (2007)
- adjudicating Category 1 issues site by site based merely on a claim of new and significant information would defeat the purpose of resolving generic issues in a generic environmental impact statement; CLI-07-3, 65 NRC 13 (2007)
- all properly formulated contentions must focus on the license application in question, challenging either specific portions of or alleged omissions from the application (including the Safety Analysis Report and the Environmental Report) so as to establish that a genuine dispute exists with the applicant on a material issue of law or fact; LBP-07-3, 65 NRC 237 (2007)
- although a board may appropriately view a petitioner's supporting information in a light favorable to the petitioner, failure to provide such information regarding a proffered contention requires that the contention be rejected; LBP-07-3, 65 NRC 237 (2007)
- although licensing boards generally are to litigate "contentions" rather than "bases," it has been recognized that the reach of a contention necessarily hinges upon its terms coupled with its stated bases; LBP-07-3, 65 NRC 237 (2007)
- although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleading, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not "fill in" any missing support, but, rather, are legally required to deny the contention; LBP-07-4, 65 NRC 281 (2007); LBP-07-5, 65 NRC 341 (2007)
- an adjudication is not the proper forum for challenging applicable statutory requirements or the basic structure of the agency's regulatory process; LBP-07-3, 65 NRC 237 (2007)
- an emergency evacuation issue was admitted in a license renewal proceeding because it was in the context of three of the specific input data for the severe accident mitigation alternatives analysis that license renewal applicants are required to perform; LBP-07-4, 65 NRC 281 (2007)
- an issue can be related to plant aging and still not warrant review at the time of a license renewal application, if an aging-related issue is adequately dealt with by regulatory processes on an ongoing basis; LBP-07-4, 65 NRC 281 (2007)
- analysis of entrainment and impingement of fish, and heat shock, is required only for plants with once-through cooling or cooling ponds, because it has been determined generically that such impacts are small for plants that use cooling towers; LBP-07-4, 65 NRC 281 (2007)
- any challenge to the established terms and conditions of an early site permit can only be raised as a petition to modify a license under section 2.206; CLI-07-12, 65 NRC 203 (2007)
- any contention alleging deficiencies or errors in an application must also indicate some significant link between the claimed deficiency and either the health and safety of the public or the environment; LBP-07-3, 65 NRC 237 (2007)
- any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed; LBP-07-3, 65 NRC 237 (2007)
- any contention that falls outside the specified scope of the proceeding must be rejected; LBP-07-3, 65 NRC 237 (2007)
- because a generic environmental analysis was incorporated into a regulation, the conclusions of that analysis are not subject to attack in an individual adjudication unless the rule is waived or suspended; CLI-07-3, 65 NRC 13 (2007)

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because deferral of the consideration of the balance of petitioner's contentions might prejudice parties' legitimate interests, they will be subject to the filing of a timely motion for reconsideration; LBP-07-5, 65 NRC 341 (2007)

boards cannot be expected to sift through reams of data to determine whether a contention is admissible; LBP-07-3, 65 NRC 237 (2007)

challenges to the merits of contentions must await either motions for summary disposition or an evidentiary hearing; LBP-07-5, 65 NRC 341 (2007)

contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking are inadmissible; LBP-07-3, 65 NRC 237 (2007)

discharge of chlorine or other biocides is a Category 1, out-of-scope issue in a license renewal proceeding; LBP-07-4, 65 NRC 281 (2007)

emergency planning is excluded from license renewal proceedings because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal; LBP-07-4, 65 NRC 281 (2007)

environmental justice contentions must be based on the specific characteristics of a particular minority community; LBP-07-3, 65 NRC 237 (2007)

failure of a contention to meet any of the pleading requirements of section 2.309(f)(1) is grounds for its dismissal; LBP-07-3, 65 NRC 237 (2007); LBP-07-4, 65 NRC 281 (2007); LBP-07-7, 65 NRC 507 (2007)

if a petitioner neglects to provide the requisite support for its contentions, it is not within the Board's power to make assumptions of fact that favor the petitioner, nor may the Board supply information that is lacking; LBP-07-3, 65 NRC 237 (2007)

if a structure or component is already required to be replaced at mandated, specified time periods, it would fall outside the scope of license renewal review; LBP-07-4, 65 NRC 281 (2007)

if admitted contentions are resolved before the FEIS is issued so as to conclude the contested portion of a proceeding, an intervenor could timely seek to litigate contentions regarding FEIS data or conclusions that differ significantly from the ER or the DEIS; LBP-07-3, 65 NRC 237 (2007)

if petitioners cannot show that their new or revised contentions could not have been submitted without the requested access to the redacted information in the license transfer application, then they will have to meet not only the contention pleading requirements, but also the late-filing requirements; CLI-07-18, 65 NRC 399 (2007)

if there is reason to believe that a departure from the NRC's license renewal generic environmental impact statement and related regulations is warranted, then the remedy is a petition for rulemaking to modify the rules or a petition for a waiver of the rules based on special circumstances, not an adjudicatory contention; CLI-07-8, 65 NRC 124 (2007)

interest in the promotion of economic use of energy falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 399 (2007)

intervenors may not act as private attorneys-general and raise issues that are of concern to them but do not affect them directly; CLI-07-18, 65 NRC 399 (2007)

"issues" in license transfer proceedings constitute "contentions" under 10 C.F.R. 2.309(f) and must therefore meet the standards for admissibility set forth in that regulation; CLI-07-18, 65 NRC 399 (2007)

issues raised in contentions must be both within the scope of the proceeding and material to the findings the NRC must make to support the action that is involved in the proceeding; LBP-07-3, 65 NRC 237 (2007)

issues resolved in the ESP proceeding are treated as resolved in a subsequent construction permit or COL proceeding that references the ESP, unless a contention is admitted under narrowly specified conditions; CLI-07-12, 65 NRC 203 (2007)

it is the petitioner's obligation to present factual information and/or expert opinion necessary to support its contention; LBP-07-3, 65 NRC 237 (2007)

neither mere speculation nor bare or conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention; LBP-07-3, 65 NRC 237 (2007)

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new and significant information about a Category 1 issue is not a proper subject for a contention, absent a waiver of section 51.53(c)(3)(i); LBP-07-4, 65 NRC 281 (2007)

new information, not part of the original contention, may not be introduced for the first time on appeal; CLI-07-8, 65 NRC 124 (2007)

one way to challenge a generic finding, or Category 1 issue, in a license renewal proceeding is to apply for a waiver where special circumstances are such that the application of the rule or regulation would not serve the purposes for which the rule or regulation was adopted; CLI-07-3, 65 NRC 13 (2007)

petitioner must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view, and explain why it disagrees with the applicant; LBP-07-4, 65 NRC 281 (2007)

petitioners are obliged to set forth their claims at the earliest possible moment; CLI-07-18, 65 NRC 399 (2007)

petitioners waived their right to pursue the NEPA-terrorism issue in this adjudication by not filing the contention on the basis of the environmental report; CLI-07-10, 65 NRC 144 (2007)

providing any material or document as a basis for a contention, without setting forth an explanation of its significance, is inadequate to support the admission of the contention; LBP-07-3, 65 NRC 237 (2007)

radiological monitoring is an operational program that is beyond the scope of license renewal; LBP-07-4, 65 NRC 281 (2007)

rulings may be deferred in the interest of the most economical use of board resources; LBP-07-8, 65 NRC 531 (2007)

site-specific claims relating to the safe ongoing operations of a nuclear reactor are not matters peculiar to plant aging or to the license extension period; CLI-07-8, 65 NRC 124 (2007)

supporting information is to be provided at the time the contention is filed, not at a later date or on appeal; CLI-07-20, 65 NRC 499 (2007)

terrorism contentions are directly related to security and are therefore, under NRC license renewal rules, unrelated to the detrimental effects of aging, and consequently are beyond the scope of, not material to, and inadmissible in, a license renewal proceeding; CLI-07-8, 65 NRC 124 (2007); CLI-07-9, 65 NRC 139 (2007)

the admissibility of proposed contentions may be determined after the Staff has issued the materials license amendment; CLI-07-20, 65 NRC 499 (2007)

the Commission does not endorse deferring the consideration of proposed contentions because prompt consideration of contentions promotes the efficient and complete development of the record while conserving resources; CLI-07-20, 65 NRC 499 (2007)

the Commission regularly affirms board decisions on the admissibility of contentions where the appellant points to no error of law or abuse of discretion; CLI-07-20, 65 NRC 499 (2007)

the Commission will not accept the filing of a vague, unparticularized contention, unsupported by alleged fact or expert opinion and documentary support; CLI-07-18, 65 NRC 399 (2007); LBP-07-5, 65 NRC 341 (2007)

the current version of contention admissibility rules no longer incorporates provisions that permitted the supplementation of petitions and the filing of contentions after the original filing of petitions; LBP-07-4, 65 NRC 281 (2007)

the mere posing of questions does not provide sufficient support to admit a contention; LBP-07-4, 65 NRC 281 (2007)

the purpose of an appeal is to point out errors made in the board's decision, not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the board; CLI-07-20, 65 NRC 499 (2007)

the subject matter of the contention must impact the grant or denial of a pending license application; LBP-07-3, 65 NRC 237 (2007)

there is no NEPA requirement that NRC consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities; CLI-07-8, 65 NRC 124 (2007); CLI-07-10, 65 NRC 144 (2007)

there may be mistakes in the draft environmental impact statement, but in an NRC adjudication, it is intervenors' burden to show their significance and materiality; LBP-07-3, 65 NRC 237 (2007)

threshold admissibility requirements for contentions should not be turned into a fortress to deny intervention; CLI-07-18, 65 NRC 399 (2007)

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to implicate environmental justice scrutiny, support must be presented regarding the alleged existence of adverse impacts or harm on the physical or human environment, and a supported case must be made that these purported adverse impacts could disproportionately affect poor or minority communities in the vicinity of the facility at issue; LBP-07-3, 65 NRC 237 (2007)

to intervene in an NRC proceeding, a petitioner must, in addition to demonstrating standing, submit at least one contention meeting specific pleading requirements; LBP-07-4, 65 NRC 281 (2007)

when a contention alleges the omission of particular information or an issue from an application, and the information is later supplied by the applicant or considered by the Staff in a draft EIS, the contention is moot; LBP-07-2, 65 NRC 153 (2007)

when critical information has been submitted to the NRC under a claim of confidentiality and was not available to petitioners when framing their issues, it is appropriate to defer ruling on the admissibility of an issue until the petitioner has had an opportunity to review this information and submit a properly documented issue; CLI-07-18, 65 NRC 399 (2007)

would-be intervenors must file contentions at the outset of the proceeding, on the basis of the applicant's environmental report; CLI-07-9, 65 NRC 139 (2007)

### CONTENTIONS, LATE-FILED

a change in the controlling law in a different Circuit does not constitute previously unavailable information to excuse late filing; CLI-07-9, 65 NRC 139 (2007); CLI-07-10, 65 NRC 144 (2007)

a late-filed contention can be admitted only when the information on which the amended or new contention is based was previously unavailable; CLI-07-10, 65 NRC 144 (2007)

if petitioners cannot show that their new or revised contentions could not have been submitted without the requested access to redacted information in the license transfer application, then they will have to meet not only the contention pleading requirements, but also the late-filing requirements; CLI-07-18, 65 NRC 399 (2007)

### COOLING SYSTEMS

analysis of entrainment and impingement of fish, and heat shock, is required only for plants with once-through cooling or cooling ponds, because it has been determined generically that such impacts are small for plants that use cooling towers; LBP-07-4, 65 NRC 281 (2007)

if applicant's plant utilizes a once-through cooling system, applicant shall provide a copy of a Clean Water Act § 316a variance or equivalent state permit and supporting documentation; CLI-07-16, 65 NRC 371 (2007)

the permitting agency determines what cooling system a nuclear power facility may use, and NRC factors the impacts resulting from use of that system into the NEPA cost-benefit analysis; CLI-07-16, 65 NRC 371 (2007)

### COST-BENEFIT ANALYSES

deferral the NEPA analysis of the need for power until the combined operating license stage does not violate NEPA; LBP-07-9, 65 NRC 539 (2007)

if the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs; LBP-07-4, 65 NRC 281 (2007)

Staff's environmental impact statement for an early site permit need not include an assessment of the benefits such as need for power; LBP-07-1, 65 NRC 27 (2007)

the environmental costs of a uranium enrichment facility must be compared to the Staff's assessment of the benefits derived from the additional domestic supply of enriched uranium and the presence of upgraded enrichment technology in the United States; LBP-07-6, 65 NRC 429 (2007)

the permitting agency determines what cooling system a nuclear power facility may use, and NRC factors the impacts resulting from use of that system into the NEPA analysis; CLI-07-16, 65 NRC 371 (2007)

### COUNCIL ON ENVIRONMENTAL QUALITY

even when an early site permit does not authorize any construction activity, the NRC Staff is required by CEQ regulations to consider actions that are related to other actions that could lead to a significant impact on the environment; LBP-07-1, 65 NRC 27 (2007)

### CRIMINAL PROCEEDING

NRC is loath to permit a criminal defendant to use its procedures to do an end run around rules prescribed by the Supreme Court and implicitly approved by Congress; CLI-07-6, 65 NRC 112 (2007)



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the Commission is generally inclined to accommodate an abeyance request from DOJ as long as it provides at least some showing of potential detrimental effect on its parallel criminal case; CLI-07-6, 65 NRC 112 (2007)

the question whether to hold an NRC enforcement proceeding in abeyance pending a related criminal prosecution is generally suitable for interlocutory Commission review because the abeyance issue cannot await the end of the proceeding; CLI-07-6, 65 NRC 112 (2007)

### CROSS-EXAMINATION

the opportunity for cross-examination under Subpart L is equivalent to the opportunity for cross-examination under the Administrative Procedure Act; LBP-07-4, 65 NRC 281 (2007)

### CUMULATIVE IMPACTS ANALYSIS

even when an early site permit does not authorize any construction activity, the NRC Staff is required by Council on Environmental Quality regulations to consider actions that are related to other actions that could lead to a significant impact on the environment; LBP-07-1, 65 NRC 27 (2007)

in its environmental justice analysis, NRC makes nearby nuclear facility-related harm an appropriate issue to consider cumulatively with any impacts from proposed reactors; LBP-07-3, 65 NRC 237 (2007)

### CURRENT LICENSING BASIS

it is unnecessary or inappropriate to throw open the full gamut of provisions in a plant's current licensing basis to re-analysis during the license renewal review; LBP-07-4, 65 NRC 281 (2007)

### DEADLINES

contentions must be filed with the original petition within 60 days of notice of the proceeding in the *Federal Register*, unless a longer period is therein specified, an extension is granted, or the contentions meet certain criteria for late-filed or new contentions based on information that is available only at a later time; LBP-07-4, 65 NRC 281 (2007)

### DECOMMISSIONING FUNDING

a decommissioning plan must address economic considerations, and a contention that seeks to raise issues in that sphere must include references to specific portions of the plan that the petitioner disputes; LBP-07-5, 65 NRC 341 (2007)

without an exemption, a uranium enrichment facility applicant is required to fully fund all of its estimated decommissioning costs at the time of licensing; LBP-07-6, 65 NRC 429 (2007)

### DECOMMISSIONING FUNDING PLANS

the decommissioning funding required for the most costly component, disposition of depleted uranium tails, is predicated on transferring DU to DOE, which is a plausible strategy allowed by statute; LBP-07-6, 65 NRC 429 (2007)

### DECOMMISSIONING PLANS

to be granted, an alternate schedule for submission of a decommissioning plan must be necessary to the effective conduct of decommissioning operations; LBP-07-7, 65 NRC 507 (2007)

### DEFERRAL OF HEARING

it is appropriate to defer issues concerning the effects of short-term damage to the environment and the irretrievable commitment of resources to the construction permit or combined license stage; CLI-07-14, 65 NRC 216 (2007)

### DEFERRAL OF RULING

because deferral of the consideration of the balance of petitioner's contentions might prejudice parties' legitimate interests, they will be subject to the filing of a timely motion for reconsideration; LBP-07-5, 65 NRC 341 (2007)

contention admissibility rulings may be deferred in the interest of the most economical use of board resources; LBP-07-8, 65 NRC 531 (2007)

the Commission does not endorse deferring the consideration of proposed contentions because prompt consideration of contentions promotes the efficient and complete development of the record while conserving resources; CLI-07-20, 65 NRC 499 (2007)

when critical information has been submitted to the NRC under a claim of confidentiality and was not available to petitioners when framing their issues, it is appropriate to defer ruling on the admissibility of an issue until the petitioner has had an opportunity to review this information and submit a properly documented issue; CLI-07-18, 65 NRC 399 (2007)

### DEFINITIONS

an organization, like an individual, is considered a "person"; CLI-07-18, 65 NRC 399 (2007)

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for purposes of NPDES permits, effluent is defined as liquid waste that is discharged into a river, lake, or other body of water, and it includes heat; CLI-07-16, 65 NRC 371 (2007)  
transients can be, and often are, anticipated operational occurrences which are conditions of normal operation; LBP-07-2, 65 NRC 153 (2007)

### DEMAND FOR INFORMATION

a DFI is a significant action that should be used only when it is likely that an inadequate response will result in an order or other enforcement action; DD-07-1, 65 NRC 195 (2007)  
NRC may issue DFIs to NRC licensees for the purpose of determining whether an order under section 2.202 should be issued, or whether other actions should be taken; DD-07-1, 65 NRC 195 (2007)

### DEPARTMENT OF ENERGY

DOE will indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents to the extent that licensee cannot obtain commercial insurance at reasonable rates; LBP-07-6, 65 NRC 429 (2007)

### DEPARTMENT OF JUSTICE

the Commission is generally inclined to accommodate an abeyance request from DOJ as long as it provides at least some showing of potential detrimental effect on its parallel criminal case; CLI-07-6, 65 NRC 112 (2007)

### DEPLETED URANIUM

DU is classified as a low-level waste; LBP-07-6, 65 NRC 429 (2007)

### DESIGN

the reactor core and associated coolant, control, and protection systems must be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences; LBP-07-2, 65 NRC 153 (2007)

### DESIGN BASIS ACCIDENT

impacts of design basis accidents at spent fuel storage are characterized as small, and so, no site-specific NEPA review is required; CLI-07-8, 65 NRC 124 (2007)

### DESIGN BASIS EARTHQUAKE

the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 365 (2007)

### DESIGN BASIS THREAT

the DBT rule describes general adversary characteristics that designated NRC licensees, including nuclear power plant licensees, are required to defend against with high assurance; CLI-07-8, 65 NRC 124 (2007)

### DISCOVERY AGAINST NRC STAFF

on safety or environmental issues, discovery should be suspended until the Staff has issued the safety evaluation report or environmental impact statement unless the presiding officer finds that commencement of discovery (as otherwise permitted) before the publication of the pertinent document will not adversely affect completion of the document and will expedite the hearing; CLI-07-17, 65 NRC 392 (2007)

### DOCUMENTARY MATERIAL

any material supporting petitioner's contention, including those portions of the material that are not relied upon, is subject to licensing board scrutiny; LBP-07-3, 65 NRC 237 (2007)  
providing any material or document as a basis for a contention, without setting forth an explanation of its significance, is inadequate to support the admission of the contention; LBP-07-3, 65 NRC 237 (2007)  
the material provided in support of a contention will be carefully examined by a licensing board to confirm that it does indeed supply an adequate basis for the contention as asserted by the petitioner; LBP-07-3, 65 NRC 237 (2007)

### DOCUMENTATION

licensee is not required to submit docketed information on the resolution of each fire protection noncompliance during its transition to a risk-informed and performance-based fire protection program, but it is required to implement and maintain compensatory measures for remaining noncompliances; DD-07-3, 65 NRC 643 (2007)

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### DOSE LIMITS

NRC includes the EPA drinking water standard in the technical specifications that a licensee must meet; LBP-07-9, 65 NRC 539 (2007)

NRC's radiation doses and standards for members of the public may apply on a per-reactor basis, a per-license basis, or a per-site basis; LBP-07-9, 65 NRC 539 (2007)

the EPA standard of 25 mrem only applies to the uranium fuel cycle, which only includes the generation of electricity by a light-water-cooled nuclear power plant; LBP-07-9, 65 NRC 539 (2007)

### DRAFT ENVIRONMENTAL IMPACT STATEMENT

if admitted contentions are resolved before the FEIS is issued so as to conclude the contested portion of a proceeding, an intervenor could timely seek to litigate contentions regarding FEIS data or conclusions that differ significantly from the ER or the DEIS; LBP-07-3, 65 NRC 237 (2007)

there may be mistakes in the DEIS, but in an NRC adjudication, it is intervenors' burden to show their significance and materiality; LBP-07-3, 65 NRC 237 (2007)

### DRY CASK STORAGE

the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 365 (2007)

### EARLY SITE PERMIT APPLICATION

any gaps and questions concerning groundwater transport and hydrology safety issues are acceptable and deferred until the construction permit or combined license stage; LBP-07-9, 65 NRC 539 (2007)

any power level selected at the COL stage other than the target value used in the environmental impact statement's alternative energy analysis for the early site permit would constitute new information that, if found to be significant, would have to be evaluated at the construction permit or combined license application stage; CLI-07-14, 65 NRC 216 (2007)

it is appropriate to defer issues concerning the effects of short-term damage to the environment and the irretrievable commitment of resources to the construction permit or combined license stage; CLI-07-14, 65 NRC 216 (2007)

### EARLY SITE PERMIT PROCEEDING

a baseline NEPA issue that a board must make in a mandatory hearing on an ESP application is whether the requirements of NEPA § 102(2)(A), (C), and (E) and 10 C.F.R. Part 51 have been met; LBP-07-9, 65 NRC 539 (2007)

a baseline NEPA issue that a board must make in a mandatory hearing is to independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; LBP-07-9, 65 NRC 539 (2007)

a baseline NEPA issue that a board must make in a mandatory proceeding is whether a construction permit should be issued, denied, or appropriately conditioned to protect environmental values; LBP-07-9, 65 NRC 539 (2007)

a board must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of an early site permit will be inimical to the common defense and security or to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)

a board's initial decision is not effective until the Commission reviews it and takes final agency action; LBP-07-9, 65 NRC 539 (2007)

benefit-cost analysis can be postponed until the reactor licensing stage; LBP-07-9, 65 NRC 539 (2007)

in an uncontested proceeding, the board must narrow its inquiry to those topics or sections in NRC Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-1, 65 NRC 27 (2007)

in complying with the mandate of the Atomic Energy Act, the board must independently evaluate the record and the adequacy of the Staff's review and then to decide six fundamental issues that are specified by the law and regulations; LBP-07-9, 65 NRC 539 (2007)

in the mandatory proceeding, the board must review the sufficiency of the record and the sufficiency of the NRC Staff's review, and decide if they are adequate to support the Staff's proposed findings; LBP-07-9, 65 NRC 539 (2007)

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issues resolved in the ESP proceeding are treated as resolved in a subsequent construction permit or COL proceeding that references the ESP, unless a contention is admitted under narrowly specified conditions; CLI-07-12, 65 NRC 203 (2007)

on NEPA baseline issues in the mandatory hearing, the Board must reach its own independent determination; LBP-07-9, 65 NRC 539 (2007)

on uncontested safety and environmental issues, the board's role is analogous to that of an appellate court applying the substantial evidence test; LBP-07-9, 65 NRC 539 (2007)

the board must decide whether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors, having the characteristics that fall within the parameters for the site, can be constructed without undue risk to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)

the NRC Staff's underlying technical and factual findings on an ESP application are not open to board reconsideration unless, after a review of the record, the board finds the NRC Staff review inadequate or its findings insufficient; LBP-07-9, 65 NRC 539 (2007)

the overriding NEPA issue that a board must determine in a mandatory proceeding on an ESP application is whether the NEPA review conducted by the NRC Staff has been adequate; LBP-07-9, 65 NRC 539 (2007)

the scope of the licensing board's environmental review in an uncontested proceeding is discussed; LBP-07-1, 65 NRC 27 (2007)

the scope of the licensing board's safety review in an uncontested early site permit proceeding is described; LBP-07-1, 65 NRC 27 (2007)

uncontested ESP proceedings are still subject to a mandatory hearing; CLI-07-12, 65 NRC 203 (2007)

**EARLY SITE PERMITS**

agencies are required to use a systematic, interdisciplinary approach that will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking that may have an impact on man's environment; LBP-07-1, 65 NRC 27 (2007)

agencies must include a detailed statement on the environmental impact of the proposed action, any unavoidable adverse environmental effects, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented; LBP-07-1, 65 NRC 27 (2007)

an ESP is considered a partial construction permit, and thus requires action by the Commission even in the absence of any appeal from the board's initial decision; CLI-07-12, 65 NRC 203 (2007)

applicant is not required to provide detailed design information concerning each of the types of reactor designs covered by the application and may provide a plant parameter envelope instead; LBP-07-9, 65 NRC 539 (2007)

before an early site permit can be made effective, the Commission must review and approve the Atomic Safety and Licensing Board's initial decision authorizing its issuance; CLI-07-4, 65 NRC 24 (2007); CLI-07-7, 65 NRC 122 (2007)

ESPs are partial construction permits and, as such, are subject to the mandatory hearing requirements under AEA § 189a; LBP-07-1, 65 NRC 27 (2007)

even when an ESP does not authorize any construction activity, the NRC Staff is required by Council on Environmental Quality regulations to consider actions that are related to other actions that could lead to a significant impact on the environment; LBP-07-1, 65 NRC 27 (2007)

factors to be considered when evaluating a proposed site include population density and use characteristics, the nature and proximity of man-related hazards such as airports, and the physical characteristics of the site including seismology, meteorology, geology, and hydrology; LBP-07-9, 65 NRC 539 (2007)

for purposes of the environmental impact statement, the potential construction and operation of the plant or plants for which the early site permit is being obtained is the proposed action that must be the focus of the board's NEPA review; LBP-07-1, 65 NRC 27 (2007)

if a combined operating license or construction permit is never issued or ultimately denied, the ESP permit holder would be required to redress even limited site preparation activities and restore the site; LBP-07-9, 65 NRC 539 (2007)

in reaching its determinations on the baseline National Environmental Policy Act issues, the board will not second-guess the underlying technical or factual findings of the NRC Staff, but if it finds that the

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- Staff review is incomplete or that the Staff findings lack sufficient explanation, it will make its own determination of technical and factual findings; LBP-07-1, 65 NRC 27 (2007)
- it is not reasonable or necessary to consider, as a system design alternative to the application for an ESP for Units 3 and 4, the imposition of water conservation measures on preexisting Units 1 and 2; LBP-07-9, 65 NRC 539 (2007)
- NRC Staff is required to prepare an environmental impact statement during its review of the ESP application; LBP-07-1, 65 NRC 27 (2007)
- seismic siting factors are part of the safety determination a board must make; LBP-07-9, 65 NRC 539 (2007)
- Staff's environmental impact statement for an ESP need not include an assessment of the benefits such as need for power; LBP-07-1, 65 NRC 27 (2007)
- the Commission may appropriately condition the license approved by the board; CLI-07-12, 65 NRC 203 (2007)
- the Commission must hold a hearing on each application for a construction permit for a facility; LBP-07-1, 65 NRC 27 (2007)
- the environmental impact statement must focus on the environmental effects of construction and operation of reactors that have the characteristics of the postulated site parameters, and must include an evaluation of alternatives to determine whether there are any obviously superior options to the proposed action; LBP-07-1, 65 NRC 27 (2007)
- the main differences between an early partial decision and an early site permit are that the early partial decision lasts only 5 years and resolves only those site suitability issues that the applicant specifically asks to resolve, whereas the early site permit lasts for 20 years and once it is issued it covers the site; LBP-07-9, 65 NRC 539 (2007)
- the potential for tritium contamination of water is primarily a NEPA issue because it involves the environmental impacts of the proposed early site permit and possible mitigation measures, but also has a safety element because safety regulations require that exposure to radiation be as low as reasonably achievable; LBP-07-9, 65 NRC 539 (2007)
- the proposed site for the nuclear reactors is "banked" or approved and the regulations applicable to the site are frozen as of the date that the ESP is issued; LBP-07-9, 65 NRC 539 (2007)
- the Staff is required to provide an environmental justice analysis in greater detail when the low-income or minority population thresholds are met; LBP-07-9, 65 NRC 539 (2007)
- when a proceeding involving an application for a construction permit is uncontested, the Board will not conduct a *de novo* review, but rather will conduct a simple sufficiency review of the uncontested issues; LBP-07-1, 65 NRC 27 (2007)
- EARTHQUAKE MOTION**
- the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 365 (2007)
- ECONOMIC INTERESTS**
- promotion of economic use of energy falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 399 (2007)
- EFFECTIVENESS**
- a board's initial decision on an early site permit is not effective until the Commission reviews it and takes final agency action; LBP-07-9, 65 NRC 539 (2007)
- EMERGENCY PLANNING**
- an emergency evacuation issue was admitted in a license renewal proceeding because it was in the context of three of the specific input data for the severe accident mitigation alternatives analysis that license renewal applicants are required to perform; LBP-07-4, 65 NRC 281 (2007)
- this issue is excluded from license renewal proceedings because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal; LBP-07-4, 65 NRC 281 (2007)
- ENDANGERED SPECIES**
- the impact of extended operation on endangered or threatened species varies from one location to another, and is thus included within Category 2; LBP-07-4, 65 NRC 281 (2007)

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### ENFORCEMENT ACTIONS

failure of a licensee to fulfill responsibilities associated with a license amendment issued by the Staff gives rise to an enforcement issue that does not come within the purview of a license amendment adjudication; LBP-07-7, 65 NRC 507 (2007)

NRC initiates the civil penalty process by issuing a notice of violation and proposed imposition of a civil penalty; DD-07-3, 65 NRC 643 (2007)

NRC normally will not take enforcement action for a violation involving a problem related to engineering, design, implementing procedures, or installation, if the violation is documented in an inspection report and it meets certain criteria including the licensee's voluntary initiative to adopt the risk-informed performance-based fire protection program; DD-07-3, 65 NRC 643 (2007)

outside the adjudicatory context, a petitioner's concerns may be addressed through a request that the NRC Staff take enforcement action under section 2.206; CLI-07-8, 65 NRC 124 (2007); LBP-07-4, 65 NRC 281 (2007)

### ENFORCEMENT POLICY

NRC may exercise enforcement discretion for certain violations of the fire protection requirements; DD-07-3, 65 NRC 643 (2007)

NRC normally will not take enforcement action for a violation involving a problem related to engineering, design, implementing procedures, or installation, if the violation is documented in an inspection report and it meets certain criteria including the licensee's voluntary initiative to adopt the risk-informed performance-based fire protection program; DD-07-3, 65 NRC 643 (2007)

when a licensee is applying to extend its operating license, the NRC cannot address requests for enforcement action; DD-07-3, 65 NRC 643 (2007)

### ENFORCEMENT PROCEEDINGS

hearings regarding immediately effective enforcement orders must be held expeditiously; CLI-07-6, 65 NRC 112 (2007)

the Commission is generally inclined to accommodate an abeyance request from DOJ as long as it provides at least some showing of potential detrimental effect on its parallel criminal case; CLI-07-6, 65 NRC 112 (2007)

the question whether to hold an NRC enforcement proceeding in abeyance pending a related criminal prosecution is generally suitable for interlocutory Commission review because the abeyance issue cannot await the end of the proceeding; CLI-07-6, 65 NRC 112 (2007)

### ENVIRONMENTAL ANALYSIS

a reasonably close causal relationship between federal agency action and environmental consequences is necessary to trigger NEPA; CLI-07-8, 65 NRC 124 (2007)

agencies are required to use a systematic, interdisciplinary approach that will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking that may have an impact on man's environment; LBP-07-1, 65 NRC 27 (2007)

agencies must include a detailed statement on the environmental impact of the proposed action, any unavoidable adverse environmental effects, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented; LBP-07-1, 65 NRC 27 (2007)

although the primary duties of NEPA fall on the NRC Staff in NRC proceedings, the initial requirement to analyze the environmental impacts of an action, including license renewal, is directed to applicants; LBP-07-4, 65 NRC 281 (2007)

analysis of entrainment and impingement of fish, and heat shock, is required only for plants with once-through cooling or cooling ponds, because it has been determined generically that such impacts are small for plants that use cooling towers; LBP-07-4, 65 NRC 281 (2007)

applicant must provide enough information and in sufficient detail to allow for an evaluation of important impacts; LBP-07-3, 65 NRC 237 (2007)

boards do not sit to flyspeck environmental documents or to add details or nuances; LBP-07-3, 65 NRC 237 (2007)

in accord with the environmental justice executive order, NRC has obligated itself to address only the disproportionate distribution of high and adverse effects on minority and low-income populations in its NEPA analysis; LBP-07-3, 65 NRC 237 (2007)

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in its environmental justice analysis, NRC makes nearby nuclear facility-related harm an appropriate issue to consider cumulatively with any impacts from proposed reactors; LBP-07-3, 65 NRC 237 (2007)  
in reviewing environmental justice claims, adverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny; LBP-07-3, 65 NRC 237 (2007)

### ENVIRONMENTAL ASSESSMENT

any member of the public who wishes to comment on the draft environmental assessment outside of the adjudicatory process, pursuant to NRC's normal environmental process, must do so within 30 days after it is made available (or within 45 days) of the publication of a draft environmental impact statement; CLI-07-11, 65 NRC 148 (2007)

### ENVIRONMENTAL EFFECTS

if the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs; LBP-07-4, 65 NRC 281 (2007)

impacts of design basis accidents at spent fuel storage installations are characterized as small, and so, no site-specific NEPA review is required; CLI-07-8, 65 NRC 124 (2007)

in a supplemental environmental impact statement, Staff must address the adverse environmental effects that cannot be avoided; LBP-07-4, 65 NRC 281 (2007)

the effects that must be considered in an environmental impact statement are those that are caused by the action, and there must be a reasonably close causal relationship between the proposed action and an alleged environmental effect or impact, similar to proximate cause in tort law, before that effect need be considered; LBP-07-4, 65 NRC 281 (2007)

See also Aquatic Impacts; Endangered Species

### ENVIRONMENTAL IMPACT STATEMENT

all federal agencies are to use a systematic and interdisciplinary approach in considering environmental issues and, before taking any major federal action significantly affecting the quality of the human environment; LBP-07-9, 65 NRC 539 (2007)

an agency must consider all reasonable alternatives but is not required to choose the most environmentally benign site; LBP-07-9, 65 NRC 539 (2007)

an EIS is not required when the proposed federal action will effect no change in the status quo; LBP-07-4, 65 NRC 281 (2007)

any power level selected at the COL stage other than the target value used in the environmental impact statement's alternative energy analysis for the early site permit would constitute new information that, if found to be significant, would have to be evaluated at the construction permit or combined license application stage; CLI-07-14, 65 NRC 216 (2007)

benefit-cost analysis can be postponed until the reactor licensing stage; LBP-07-9, 65 NRC 539 (2007)

even when an early site permit does not authorize any construction activity, the NRC Staff is required by Council on Environmental Quality regulations to consider actions that are related to other actions that could lead to a significant impact on the environment; LBP-07-1, 65 NRC 27 (2007)

federal agencies must include in every recommendation or report on major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on the environmental impact of the proposed action; LBP-07-4, 65 NRC 281 (2007)

federal courts and the NRC use a rule of reason in identifying alternatives and do not require that unreasonable alternatives be examined; LBP-07-9, 65 NRC 539 (2007)

it is not reasonable or necessary to consider, as a system design alternative to the application for an early site permit for Units 3 and 4, the imposition of water conservation measures on preexisting Units 1 and 2; LBP-07-9, 65 NRC 539 (2007)

NEPA does not call for examination of every conceivable aspect of federally licensed projects; LBP-07-3, 65 NRC 237 (2007)

NRC Staff is required to prepare an EIS during its review of an early site permit application; LBP-07-1, 65 NRC 27 (2007)

NRC's alternatives analysis should be based around the applicant's goals, including the applicant's economic goals; LBP-07-9, 65 NRC 539 (2007)

Staff must evaluate alternatives to determine whether there are any obviously superior options to the proposed action; LBP-07-6, 65 NRC 429 (2007)

## SUBJECT INDEX

- Staff's EIS for an early site permit need not include an assessment of the benefits such as need for power; LBP-07-1, 65 NRC 27 (2007)
- the effects that must be considered are those that are caused by the action and there must be a reasonably close causal relationship between the proposed action and an alleged environmental effect or impact, similar to proximate cause in tort law, before that effect need be considered; LBP-07-4, 65 NRC 281 (2007)
- the EIS for an early site permit must focus on the environmental effects of construction and operation of reactors that have the characteristics of the postulated site parameters, and must include an evaluation of alternatives to determine whether there are any obviously superior options to the proposed action; LBP-07-1, 65 NRC 27 (2007)
- the environmental costs of a uranium enrichment facility must be compared to the Staff's assessment of the benefits derived from the additional domestic supply of enriched uranium and the presence of upgraded enrichment technology in the United States; LBP-07-6, 65 NRC 429 (2007)
- the environmental effect of terrorism caused by third-party miscreants is simply too far removed from the natural or expected consequences of agency action to require a study under NEPA; CLI-07-10, 65 NRC 144 (2007)
- the potential construction and operation of the plant or plants for which the early site permit is being obtained is the proposed action that must be the focus of the Board's review; LBP-07-1, 65 NRC 27 (2007)
- the Staff is required to provide an environmental justice analysis in greater detail when the low-income or minority population thresholds are met; LBP-07-9, 65 NRC 539 (2007)
- See also Draft Environmental Impact Statement; Final Environmental Impact Statement; Generic Environmental Impact Statement; Supplemental Environmental Impact Statement
- ENVIRONMENTAL ISSUES**
- a baseline NEPA issue that a board must make in a mandatory hearing on an early site permit application is whether the requirements of NEPA § 102(2)(A), (C), and (E) and 10 C.F.R. Part 51 have been met; LBP-07-9, 65 NRC 539 (2007)
- a baseline NEPA issue that a board must make in a mandatory hearing on an early site permit application is to independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; LBP-07-9, 65 NRC 539 (2007)
- a baseline NEPA issue that a board must make in a mandatory proceeding on an early site permit application is whether a construction permit should be issued, denied, or appropriately conditioned to protect environmental values; LBP-07-9, 65 NRC 539 (2007)
- Category 2, or plant-specific, issues involve environmental impact severity levels that might differ significantly from one plant to another, or impacts for which additional plant-specific mitigation measures should be considered; LBP-07-4, 65 NRC 281 (2007)
- NRC hearings on safety issues concern the adequacy of the license application, not the NRC Staff's work, but NRC hearings on NEPA issues focus entirely on the adequacy of the NRC Staff's work; CLI-07-17, 65 NRC 392 (2007)
- on NEPA baseline issues in the mandatory hearing on an early site permit application, the board must reach its own independent determination; LBP-07-9, 65 NRC 539 (2007)
- the impact of extended operation on endangered or threatened species varies from one location to another, and is thus included within Category 2; LBP-07-4, 65 NRC 281 (2007)
- the licensing board's standard of review in a mandatory uncontested proceeding on a uranium enrichment facility application is discussed; LBP-07-6, 65 NRC 429 (2007)
- the overriding NEPA issue that a board must determine in a mandatory proceeding on an early site permit application is whether the NEPA review conducted by the NRC Staff has been adequate; LBP-07-9, 65 NRC 539 (2007)
- the potential for tritium contamination of water is primarily a NEPA issue because it involves the environmental impacts of the proposed early site permit and possible mitigation measures, but also has a safety element because safety regulations require that exposure to radiation be as low as reasonably achievable; LBP-07-9, 65 NRC 539 (2007)
- the presiding officer or licensing board has discretion to accelerate the merits hearing on safety issues, but not on environmental issues; CLI-07-17, 65 NRC 392 (2007)



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threshold environmental legal and policy issues need not await issuance of the final environmental impact statement; CLI-07-17, 65 NRC 392 (2007)

### ENVIRONMENTAL JUSTICE

contentions must be based on the specific characteristics of a particular minority community; LBP-07-3, 65 NRC 237 (2007)

contentions must present support regarding the alleged existence of adverse impacts or harm on the physical or human environment, and must make a supported case that these purported adverse impacts could disproportionately affect poor or minority communities in the vicinity of the facility at issue; LBP-07-3, 65 NRC 237 (2007)

in accord with the environmental justice executive order, NRC has obligated itself to address only the disproportionate distribution of high and adverse effects in its NEPA analysis; LBP-07-3, 65 NRC 237 (2007)

in its environmental analysis, NRC makes nearby nuclear facility-related harm an appropriate issue to consider cumulatively with any impacts from proposed reactors; LBP-07-3, 65 NRC 237 (2007)

in reviewing environmental justice claims, adverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny; LBP-07-3, 65 NRC 237 (2007)

the Staff is required to provide an environmental justice analysis in greater detail when the low-income or minority population thresholds are met; LBP-07-9, 65 NRC 539 (2007)

### ENVIRONMENTAL PROTECTION AGENCY

except for its overall NEPA balancing, the NRC can limit its analysis of aquatic impacts to those determined by the EPA, when EPA has analyzed an alternative technology extensively and made conclusions as to its suitability; LBP-07-3, 65 NRC 237 (2007)

### ENVIRONMENTAL REPORT

a license renewal applicant must submit with its application an environmental report, which must describe the proposed action, including the applicant's plans to modify the facility or its administrative control procedures, and the modifications directly affecting the environment or affecting plant effluents that affect the environment; LBP-07-4, 65 NRC 281 (2007)

applicant's ER is not required to contain analyses of environmental impacts identified as Category 1, or generic, issues; CLI-07-3, 65 NRC 13 (2007); LBP-07-4, 65 NRC 281 (2007)

Category 2, or plant-specific, issues involve environmental impact severity levels that might differ significantly from one plant to another, or impacts for which additional plant-specific mitigation measures should be considered; LBP-07-4, 65 NRC 281 (2007)

even though a matter may normally fall within a Category 1 issue, ERs are also required to contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware; LBP-07-4, 65 NRC 281 (2007)

if applicant's plant utilizes a once-through cooling system, applicant shall provide a copy of a Clean Water Act § 316a variance or equivalent state permit and supporting documentation or shall assess the impact of the proposed action on fish and shellfish resources resulting from heat shock; CLI-07-16, 65 NRC 371 (2007)

no-action alternative discussions can be brief and can incorporate by reference other sections of an ER discussing the project's adverse consequences; LBP-07-3, 65 NRC 237 (2007)

nothing in the agency's Part 51 NEPA regulations or the Staff's ER preparation guidance in regard to providing a description of the local environment, indicates exactly how, as a general matter, a baseline for NEPA analysis is to be established; LBP-07-3, 65 NRC 237 (2007)

only Category 2 environmental issues must be addressed in an environmental report and may therefore be litigated at an adjudicatory hearing; CLI-07-16, 65 NRC 371 (2007)

### ENVIRONMENTAL REVIEW

in reaching its determinations on the baseline National Environmental Policy Act issues, the board will not second-guess the underlying technical or factual findings of the NRC Staff, but if it finds that the Staff review is incomplete or that the Staff findings lack sufficient explanation, it will make its own determination of technical and factual findings; LBP-07-1, 65 NRC 27 (2007)

NRC is prohibited from reviewing any effluent limitation or other requirement established pursuant to the Clean Water Act; CLI-07-16, 65 NRC 371 (2007)

## SUBJECT INDEX

pending resolution of a rulemaking petition, NRC Staff may, where appropriate, seek the Commission's permission to suspend the generic determination of a Category 1 issue and include a new analysis in the plant-specific environmental impact statements; CLI-07-3, 65 NRC 13 (2007)  
the scope of the licensing board's review in an uncontested early site permit proceeding is discussed; LBP-07-1, 65 NRC 27 (2007)

### EXEMPTIONS

an exemption can be granted if it is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest; LBP-07-6, 65 NRC 429 (2007)  
because DOE has legal authority to indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents, an exemption from the regulatory requirement for liability insurance is authorized by law; LBP-07-6, 65 NRC 429 (2007)  
containers are exempted from labeling requirements if they are attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the established limits; LBP-07-6, 65 NRC 429 (2007)  
it is not necessary for licensee to perform large transient testing in order to satisfy the relevant legal requirement for an extended power uprate; LBP-07-2, 65 NRC 153 (2007)  
it may be inferred that an exemption is implicitly authorized by law if all of the conditions for granting the exemption are met and no other provision prohibits, or otherwise restricts, its application; LBP-07-6, 65 NRC 429 (2007)  
NRC has traditionally read the language "authorized by law" to be the functional equivalent of "not prohibited by law"; LBP-07-6, 65 NRC 429 (2007)  
use of conspicuously posted signs, in conjunction with the applicant's radiation work permit program, is an acceptable alternative to section 20.1601(a) requirements; LBP-07-6, 65 NRC 429 (2007)

### EXTENSION OF TIME

a petitioner may in instances of exigent or unavoidable circumstances file a request for an extension of time to file an original hearing petition and contentions; LBP-07-4, 65 NRC 281 (2007)

### FEDERAL COURTS

a conflict in the Circuits is a key criterion informing the exercise of the Supreme Court's certiorari jurisdiction; CLI-07-8, 65 NRC 124 (2007)  
NRC is not obligated to adhere, in all of its proceedings, to the first court of appeals decision to address a controversial question; CLI-07-8, 65 NRC 124 (2007)  
under preclusion doctrines, a court of appeals decision may prevent the government from relitigating the same issue with the same party, but it still leaves the government free to litigate the same issue in the future with other litigants; CLI-07-8, 65 NRC 124 (2007)

### FINAL ENVIRONMENTAL IMPACT STATEMENT

any licensing board merits litigation-based findings have the effect of amending or supplementing the FEIS; LBP-07-3, 65 NRC 237 (2007)  
except for its overall NEPA balancing, the NRC can limit its analysis of aquatic impacts to those determined by the Environmental Protection Agency, when EPA has analyzed an alternative technology extensively and made conclusions as to its suitability; LBP-07-3, 65 NRC 237 (2007)  
if admitted contentions are resolved before the FEIS is issued so as to conclude the contested portion of a proceeding, an intervenor could timely seek to litigate contentions regarding FEIS data or conclusions that differ significantly from the ER or the DEIS; LBP-07-3, 65 NRC 237 (2007)  
no-action alternative discussions can be brief and can incorporate by reference other sections of an environmental report discussing the project's adverse consequences; LBP-07-3, 65 NRC 237 (2007)  
NRC Staff may not offer the FEIS in evidence or present the Staff's position on matters within the scope of NEPA until the FEIS is filed with the Environmental Protection Agency, furnished to commenting agencies, and made available to the public; CLI-07-17, 65 NRC 392 (2007)  
the board may decide to proceed to an early hearing on the merits of safety issues before the NRC Staff finishes its safety evaluation but the board may not commence a hearing on environmental issues before the FEIS has been issued; CLI-07-17, 65 NRC 392 (2007)  
threshold environmental legal and policy issues need not await issuance of the FEIS; CLI-07-17, 65 NRC 392 (2007)

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### FINAL SAFETY ANALYSIS REPORT

each applicant for a license to operate a power plant must submit an FSAR that includes the managerial and administrative controls to be used to assure safe operation; LBP-07-2, 65 NRC 153 (2007)  
the FSAR must include the applicant's plans for preoperational testing and initial operations; LBP-07-2, 65 NRC 153 (2007)

### FINALITY

the mere potential that an issue may become moot in the future due to a rulemaking does not affect the finality of a decision resting on current law; CLI-07-13, 65 NRC 211 (2007)  
when intervenor has no claim remaining in either adjudication, a request for judicial review must be brought immediately if at all; CLI-07-13, 65 NRC 211 (2007)

### FINANCIAL QUALIFICATIONS

a licensee need not be an electric utility, but a non-electric utility license applicant must meet heightened financial qualifications; CLI-07-18, 65 NRC 399 (2007); LBP-07-4, 65 NRC 281 (2007)  
an applicant seeking to renew or extend the term of an operating license for a power reactor need not submit the financial information that is required in an application for an initial license; LBP-07-4, 65 NRC 281 (2007)  
in a license transfer case, a petitioner cannot successfully claim injury based on the financial qualifications and assurances of the transferor; CLI-07-22, 65 NRC 525 (2005)

### FINDINGS OF FACT

any licensing board merits litigation-based findings have the effect of amending or supplementing the final environmental impact statement; LBP-07-3, 65 NRC 237 (2007)

### FIRE PROTECTION SYSTEMS

licensee is not required to submit docketed information on the resolution of each fire protection noncompliance during its transition to a risk-informed and performance-based fire protection program, but it is required to implement and maintain compensatory measures for remaining noncompliances; DD-07-3, 65 NRC 643 (2007)  
licensees may voluntarily adopt a risk-informed and performance-based fire protection program; DD-07-3, 65 NRC 643 (2007)  
NRC normally will not take enforcement action for a violation involving a problem related to engineering, design, implementing procedures, or installation, if the violation is documented in an inspection report and it meets certain criteria including the licensee's voluntary initiative to adopt the risk-informed performance-based fire protection program; DD-07-3, 65 NRC 643 (2007)

### GENERIC ENVIRONMENTAL IMPACT STATEMENT

environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be not significant; CLI-07-3, 65 NRC 13 (2007)  
generic environmental impacts analyzed in the GEIS for license renewal are designated "Category 1" issues, and the license renewal applicant is generally excused from discussing them; CLI-07-3, 65 NRC 13 (2007)  
Staff's GEIS for license renewal has already performed a discretionary analysis of terrorist acts in connection with license renewal and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events; CLI-07-8, 65 NRC 124 (2007)  
the GEIS for license renewal was part of an amendment of the requirements of Part 51 undertaken by the Commission to establish environmental review requirements for license renewals that were both efficient and more effectively focused; LBP-07-4, 65 NRC 281 (2007)  
when a petitioner argues that new information contradicts assumptions underlying the entire generic analysis for all facilities or a whole class of facilities, the appropriate remedy is a rulemaking petition; CLI-07-3, 65 NRC 13 (2007)

### GENERIC ISSUES

a license renewal applicant need not discuss severe accident mitigation alternatives for Category 1 issues; CLI-07-3, 65 NRC 13 (2007)  
adjudicating Category 1 issues site by site based merely on a claim of new and significant information would defeat the purpose of resolving generic issues in a GEIS; CLI-07-3, 65 NRC 13 (2007)  
applicant's environmental report is not required to contain analyses of environmental impacts identified as "Category 1," or "generic," issues; LBP-07-4, 65 NRC 281 (2007)

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- environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be not significant; CLI-07-3, 65 NRC 13 (2007)
- even though a matter may normally fall within a Category 1 issue, ERs are also required to contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware; LBP-07-4, 65 NRC 281 (2007)
- for all issues designated as Category 1 the Commission has concluded (generically) that additional site-specific mitigation alternatives are unlikely to be beneficial; CLI-07-3, 65 NRC 13 (2007)
- generic analysis is an appropriate method of meeting the agency's statutory obligations under NEPA; CLI-07-3, 65 NRC 13 (2007)
- if a rule is suspended for analysis, each supplemental EIS would reflect the corrected analysis until such time as the rule is amended; CLI-07-3, 65 NRC 13 (2007)
- issues on which the Commission can draw generic conclusions applicable to all existing nuclear power plants, or to a specific subgroup of plants are identified as "Category 1" issues; LBP-07-4, 65 NRC 281 (2007)
- it makes more sense for NRC to study whether, as a technical matter, the agency should modify its requirements for all plants across the board than to litigate in particular adjudications whether generic findings in the GEIS are impeached by a claim of new information; CLI-07-3, 65 NRC 13 (2007)
- one way to challenge a generic finding, or Category 1 issue, in a license renewal proceeding is to apply for a waiver where special circumstances are such that the application of the rule or regulation would not serve the purposes for which the rule or regulation was adopted; CLI-07-3, 65 NRC 13 (2007)
- pending resolution of a rulemaking petition, NRC Staff may, where appropriate, seek the Commission's permission to suspend the generic determination of a Category 1 issue and include a new analysis in the plant-specific environmental impact statements; CLI-07-3, 65 NRC 13 (2007)
- where a petitioner argues that new information contradicts assumptions underlying the entire generic analysis for all facilities or a whole class of facilities, the appropriate remedy is a rulemaking petition; CLI-07-3, 65 NRC 13 (2007)
- HEALTH AND SAFETY**
- a board must determine whether an ESP application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of an early site permit will be inimical to the common defense and security or to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)
- HEARING PROCEDURES**
- the Commission will endeavor to identify efficiencies, and provide pertinent resources, to further reduce the time the agency needs to complete reviews and reach decisions in licensing uranium enrichment facilities; CLI-07-17, 65 NRC 392 (2007)
- HEARING RIGHTS**
- NRC must provide a hearing upon the request of any person whose interest may be affected by the proceeding; LBP-07-4, 65 NRC 281 (2007)
- HEARINGS**
- the presiding officer or licensing board has discretion to accelerate the merits hearing on safety issues, but not on environmental issues; CLI-07-17, 65 NRC 392 (2007)
- HEAT SHOCK**
- effects of heat shock on the protection and propagation of fish and shellfish is a Category 2 environmental issue and must be addressed on a case-by-case basis; CLI-07-16, 65 NRC 371 (2007)
- NPDES permits may address thermal discharges into bodies of water; CLI-07-16, 65 NRC 371 (2007)
- IMMEDIATE EFFECTIVENESS**
- hearings regarding immediately effective enforcement orders must be held expeditiously; CLI-07-6, 65 NRC 112 (2007)
- IMMEDIATE EFFECTIVENESS REVIEW**
- before an early site permit can be made effective, the Commission must review and approve the licensing board's initial decision authorizing its issuance; CLI-07-7, 65 NRC 122 (2007)
- INCORPORATION BY REFERENCE**
- no-action alternative discussions can be brief and can incorporate by reference other sections of an environmental report discussing the project's adverse consequences; LBP-07-3, 65 NRC 237 (2007)

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### INDEPENDENT SPENT FUEL STORAGE INSTALLATION

potential radiological risks associated with an ISFSI license transfer are lower than those for an operating facility, because an ISFSI is essentially a passive structure, and there therefore is less chance of widespread radioactive release; CLI-07-19, 65 NRC 423 (2007)

the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 365 (2007)

there is no obvious potential for offsite consequences from an ISFSI transfer sufficient to justify applying a presumption of standing based on proximity; CLI-07-19, 65 NRC 423 (2007)

### INITIAL DECISIONS

before an early site permit can be made effective, the Commission must review and approve the Atomic Safety and Licensing Board's initial decision authorizing its issuance; CLI-07-4, 65 NRC 24 (2007); LBP-07-9, 65 NRC 539 (2007)

### INJURY IN FACT

an injury that establishes standing must be fairly traceable to the challenged action and likely to be redressed by a favorable decision; LBP-07-3, 65 NRC 237 (2007); LBP-07-4, 65 NRC 281 (2007)

in a license transfer case, a petitioner cannot successfully claim injury based on the financial qualifications and assurances of the transferor; CLI-07-22, 65 NRC 525 (2005)

to establish standing, the requisite injury may be either actual or threatened, but must arguably lie within the zone of interests protected by the statutes governing the proceeding; LBP-07-4, 65 NRC 281 (2007)

### INTERESTED GOVERNMENTAL ENTITY

an advisory body that lacks executive or legislative responsibilities is so far removed from having the representative authority to speak and act for the public that it does not qualify as a governmental entity; CLI-07-18, 65 NRC 399 (2007)

an interested state or political subdivision thereof that has not become a party to the proceeding must be accorded a reasonable opportunity to participate, through a single representative, in the hearing of one or more of the admitted contentions; LBP-07-5, 65 NRC 341 (2007)

local governmental bodies within whose boundaries a facility is located do not need to make any further demonstration of standing; CLI-07-18, 65 NRC 399 (2007)

not all organizations with governmental ties are entitled to participate in NRC proceedings as a local governmental body (county, municipality, or other subdivision); CLI-07-18, 65 NRC 399 (2007)

one does not acquire standing as a consequence of being a member of a legislative tribunal; LBP-07-5, 65 NRC 341 (2007)

only a party to a proceeding, or an interested governmental entity participating under section 2.315, may file a request to stay proceedings pending a rulemaking; CLI-07-13, 65 NRC 211 (2007)

### INTERVENTION

a petitioner must, in addition to demonstrating standing, submit at least one contention meeting specific pleading requirements; LBP-07-4, 65 NRC 281 (2007)

threshold admissibility requirements for contentions should not be turned into a fortress to deny intervention; CLI-07-18, 65 NRC 399 (2007)

### INTERVENTION PETITIONS

a petitioner may in instances of exigent or unavoidable circumstances file a request for an extension of time to file an original hearing petition and contentions; LBP-07-4, 65 NRC 281 (2007)

### LIABILITY INSURANCE

DOE will indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents to the extent that licensee cannot obtain commercial insurance at reasonable rates; LBP-07-6, 65 NRC 429 (2007)

proof of adequate insurance must be filed with the NRC before a license for the operation of a uranium enrichment facility may be issued; LBP-07-6, 65 NRC 429 (2007)

the limit of liability for which DOE will indemnify a uranium enrichment facility licensee against claims arising from nuclear incidents is in excess of the liability insurance required under NRC regulations; LBP-07-6, 65 NRC 429 (2007)

### LICENSE AMENDMENT PROCEEDINGS

failure of a licensee to fulfill responsibilities associated with a license amendment issued by the Staff gives rise to an enforcement issue that does not come within the purview of a license amendment adjudication; LBP-07-7, 65 NRC 507 (2007)

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### LICENSE AMENDMENTS

- a licensing board may modify or condition a license amendment; LBP-07-7, 65 NRC 507 (2007)
  - an application for an NRC permit must be made under oath or affirmation; CLI-07-12, 65 NRC 203 (2007)
  - an exemption can be granted if it is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest; LBP-07-6, 65 NRC 429 (2007)
  - NRC has broad legal authority under the Atomic Energy Act and has authority to independently verify the facts contained in an application; CLI-07-12, 65 NRC 203 (2007)
  - NRC may revoke any license for a material false statement in the application; CLI-07-12, 65 NRC 203 (2007)
  - the standard for the Commission's decision on license renewal applications is whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable; LBP-07-4, 65 NRC 281 (2007)
- See also License Renewal Applications; Uncontested License Applications

### LICENSE CONDITIONS

- if a board determines after full adjudication that the license amendment should not have been granted, it may be revoked or conditioned; LBP-07-2, 65 NRC 153 (2007)
  - the Commission has the authority to appropriately condition a license approved by the board; CLI-07-12, 65 NRC 203 (2007)
- See also Permit Conditions

### LICENSE RENEWAL APPLICATIONS

- applicant must submit with its application an environmental report, which must describe the proposed action, including the applicant's plans to modify the facility or its administrative control procedures, and the modifications directly affecting the environment or affecting plant effluents that affect the environment; LBP-07-4, 65 NRC 281 (2007)
- the time frame for filing a license renewal application is no more than 20 years prior to the expiration of the current operating license; LBP-07-4, 65 NRC 281 (2007)

### LICENSE RENEWAL PROCEEDINGS

- terrorism contentions are directly related to security and are therefore, under NRC license renewal rules, unrelated to the detrimental effects of aging, and consequently are beyond the scope of, not material to, and inadmissible in, a license renewal proceeding; CLI-07-8, 65 NRC 124 (2007); CLI-07-9, 65 NRC 139 (2007)

### LICENSE RENEWALS

- adjudicating Category 1 issues site by site based merely on a claim of new and significant information would defeat the purpose of resolving generic issues in a GEIS; CLI-07-3, 65 NRC 13 (2007)
- applicant need not discuss severe accident mitigation alternatives for generic, or Category 1, issues; CLI-07-3, 65 NRC 13 (2007)
- as a general matter, NEPA imposes no legal duty on the NRC to consider intentional malevolent acts in conjunction with commercial power reactor license renewal applications; CLI-07-9, 65 NRC 139 (2007)
- effects of heat shock on the protection and propagation of fish and shellfish is a Category 2 environmental issue and must be addressed on a case-by-case basis; CLI-07-16, 65 NRC 371 (2007)
- environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be not significant; CLI-07-3, 65 NRC 13 (2007)
- generic environmental impacts analyzed in the GEIS for license renewal are designated "Category 1" issues, and the license renewal applicant is generally excused from discussing them; CLI-07-3, 65 NRC 13 (2007)
- if applicant's plant utilizes a once-through cooling system, applicant shall provide a copy of a Clean Water Act § 316a variance or equivalent state permit and supporting documentation; CLI-07-16, 65 NRC 371 (2007)
- one way to challenge a generic finding, or Category 1 issue, in a license proceeding is to apply for a waiver when special circumstances are such that the application of the rule or regulation would not serve the purposes for which the rule or regulation was adopted; CLI-07-3, 65 NRC 13 (2007)
- only Category 2 environmental issues must be addressed in an environmental report and may therefore be litigated at an adjudicatory hearing; CLI-07-16, 65 NRC 371 (2007)

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site-specific claims relating to the safe ongoing operations of a nuclear reactor are not matters peculiar to plant aging or to the license extension period; CLI-07-8, 65 NRC 124 (2007)

Staff's generic environmental impact statement for license renewal has already performed a discretionary analysis of terrorist acts in connection with license renewal and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events; CLI-07-8, 65 NRC 124 (2007)

the Commission can legitimately rely on a state permit that expires only 5 years into the 20-year renewal period; CLI-07-16, 65 NRC 371 (2007)

where a petitioner argues that new information contradicts assumptions underlying the entire generic analysis for all facilities or a whole class of facilities, the appropriate remedy is a rulemaking petition; CLI-07-3, 65 NRC 13 (2007)

See also Operating License Renewal

### LICENSE TRANSFER PROCEEDINGS

a petitioner cannot, for purposes of standing, successfully claim injury based on the financial qualifications and assurances of the transferor; CLI-07-22, 65 NRC 525 (2005)

if petitioners cannot show that their new or revised contentions could not have been submitted without the requested access to redacted information in the application, then they will have to meet not only the contention pleading requirements, but also the late-filing requirements; CLI-07-18, 65 NRC 399 (2007)

"issues" constitute "contentions" under 10 C.F.R. 2.309(f) and must therefore meet the standards for admissibility set forth in that regulation; CLI-07-18, 65 NRC 399 (2007)

NRC Staff ordinarily does not participate as a party in the adjudicatory portion of these proceedings; CLI-07-18, 65 NRC 399 (2007)

proximity standing has been recognized at close distances where a petitioner frequently engages in substantial business and related activities in the vicinity of the facility, engages in normal, everyday activities in the vicinity, has regular and frequent contacts in an area near a licensed facility, or otherwise has visits of a length and nature showing an ongoing connection and presence; CLI-07-21, 65 NRC 519 (2007)

proximity-based standing has been denied where contact has been limited to mere occasional trips to areas located close to reactors; CLI-07-21, 65 NRC 519 (2007)

proximity-based standing in license transfer proceedings had been denied to petitioners within 5-10 miles, 12 miles, and 40 miles from licensed facilities; CLI-07-21, 65 NRC 519 (2007)

the Commission determines on a case-by-case basis whether the proximity presumption should apply, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue, and specifically taking into account the nature of the proposed action and the significance of the radioactive source; CLI-07-19, 65 NRC 423 (2007)

the longest specific distance for which the Commission has granted proximity-based standing in a post-*Vogtle* license transfer case is 6 to 6-1/2 miles; CLI-07-21, 65 NRC 519 (2007)

### LICENSE TRANSFERS

prospective new owner and operator of facilities are not electric utilities and must therefore demonstrate financial qualifications to own and/or operate the plant; CLI-07-18, 65 NRC 399 (2007)

### LICENSEES

a licensee need not be an electric utility, but a non-electric utility license applicant must meet heightened financial qualifications; LBP-07-4, 65 NRC 281 (2007)

See also Applicants

### LICENSING BOARD DECISIONS

any licensing board merits litigation-based findings have the effect of amending or supplementing the final environmental impact statement; LBP-07-3, 65 NRC 237 (2007)

the admissibility of proposed contentions may be determined after the Staff has issued the materials license amendment; CLI-07-20, 65 NRC 499 (2007)

within 45 days after the filing of answers and replies the presiding officer must issue a decision on each request for hearing/petition to intervene, absent an extension from the Commission; CLI-07-20, 65 NRC 499 (2007)

See also Initial Decisions

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### LICENSING BOARDS

- in an uncontested early site permit proceeding, the board must narrow its inquiry to those topics or sections in NRC Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-1, 65 NRC 27 (2007)
- on NEPA baseline issues in the mandatory hearing on an early site permit application, the board must reach its own independent determination; LBP-07-9, 65 NRC 539 (2007)
- on uncontested issues in an early site permit proceeding, the board must independently evaluate the record and the adequacy of the Staff's review and then to decide six fundamental issues that are specified by the law and regulations; LBP-07-9, 65 NRC 539 (2007)
- regarding safety issues, boards must determine whether the application and the record of the proceeding contain sufficient information and the review of the application by the NRC Staff has been adequate to support findings pursuant to 10 C.F.R. 30.33, 40.32, and 70.23; LBP-07-6, 65 NRC 429 (2007)
- the board's role in mandatory hearings on early site permit applications is analogous to that of an appellate court applying the substantial evidence test; LBP-07-9, 65 NRC 539 (2007)
- the scope of the board's environmental review in an uncontested early site permit proceeding is discussed; LBP-07-1, 65 NRC 27 (2007)
- the scope of the licensing board's safety review in an uncontested early site permit proceeding is described; LBP-07-1, 65 NRC 27 (2007)
- when a proceeding involving an application for a construction permit is uncontested, the board will not conduct a *de novo* review, but rather will conduct a simple sufficiency review of the uncontested issues; LBP-07-6, 65 NRC 429 (2007)

### LICENSING BOARDS, AUTHORITY

- a board may modify or condition a license amendment; LBP-07-7, 65 NRC 507 (2007)
- if a petitioner neglects to provide the requisite support for its contentions, it is not within the board's power to make assumptions of fact that favor the petitioner, nor may the board supply information that is lacking; LBP-07-3, 65 NRC 237 (2007)
- in reaching its determinations on the baseline National Environmental Policy Act issues, the board will not second-guess the underlying technical or factual findings of the NRC Staff, but if it finds that the Staff review is incomplete or that the Staff findings lack sufficient explanation, it will make its own determination of technical and factual findings; LBP-07-1, 65 NRC 27 (2007)
- the presiding officer or licensing board has discretion to accelerate the merits hearing on safety issues, but not on environmental issues; CLI-07-17, 65 NRC 392 (2007)

### LOW-INCOME POPULATIONS

- in reviewing environmental justice claims, adverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny; LBP-07-3, 65 NRC 237 (2007)

### MAIN STEAM ISOLATION VALVES

- applicant normally is required to perform large-transient tests before an extended power uprate can be granted; LBP-07-2, 65 NRC 153 (2007)
- these valves serve a safety function in the event of fuel failure by preventing fission products from the fuel inside the reactor from being released into the steam system outside of reactor containment; LBP-07-2, 65 NRC 153 (2007)

### MANDATORY HEARINGS

- a baseline NEPA issue that a board must make in a hearing on an early site permit application is whether the requirements of NEPA § 102(2)(A), (C), and (E) and 10 C.F.R. Part 51 have been met; LBP-07-9, 65 NRC 539 (2007)
- a baseline NEPA issue that a board must make in an early site permit proceeding is to independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; LBP-07-9, 65 NRC 539 (2007)
- a baseline NEPA issue that a board must make on an early site permit application is whether a construction permit should be issued, denied, or appropriately conditioned to protect environmental values; LBP-07-9, 65 NRC 539 (2007)
- a board must determine whether the application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a



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- negative finding on the question of whether the issuance of an early site permit will be inimical to the common defense and security or to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)
- for license applications for uranium enrichment facilities, NRC shall conduct a single adjudicatory hearing on the record with regard to the licensing of the construction and operation of the facility; LBP-07-6, 65 NRC 429 (2007)
- in an early site permit proceeding, the board must review the sufficiency of the record and the sufficiency of the NRC Staff's review, and decide if they are adequate to support the Staff's proposed findings; LBP-07-9, 65 NRC 539 (2007)
- in an uncontested early site permit proceeding, the board must narrow its inquiry to those topics or sections in NRC Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-1, 65 NRC 27 (2007)
- in complying with the mandate of the Atomic Energy Act, the board must independently evaluate the record and the adequacy of the Staff's review and then to decide six fundamental issues that are specified by the law and regulations; LBP-07-9, 65 NRC 539 (2007)
- licensing boards must inquire whether the NRC Staff performed an adequate review and made findings with reasonable support in logic and fact; LBP-07-6, 65 NRC 429 (2007)
- licensing boards should not undertake a *de novo* review of the NRC Staff's findings, but rather should determine whether the safety and environmental record is sufficient to support license issuance; CLI-07-5, 65 NRC 109 (2007)
- on NEPA baseline issues in an early site permit proceeding, the board must reach its own independent determination; LBP-07-9, 65 NRC 539 (2007)
- regarding safety issues, boards must determine whether the application and the record of the proceeding contain sufficient information and the review of the application by the NRC Staff has been adequate to support findings pursuant to 10 C.F.R. 30.33, 40.32, and 70.23; LBP-07-6, 65 NRC 429 (2007)
- the board must decide whether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors, having the characteristics that fall within the parameters for the site, can be constructed without undue risk to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)
- the board's role is analogous to that of an appellate court applying the substantial evidence test; LBP-07-9, 65 NRC 539 (2007)
- the Commission must hold a hearing on each application for a construction permit for a facility; LBP-07-1, 65 NRC 27 (2007)
- the licensing board is directed to revise its mandatory hearing schedule with a goal of issuing a final Commission decision on the pending application within 30 months from the date that the application was received; CLI-07-5, 65 NRC 109 (2007)
- the licensing board must narrow its inquiry to those topics or sections in Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-6, 65 NRC 429 (2007)
- the licensing board's standard of review on environmental issues in a uncontested proceeding on a uranium enrichment facility application is discussed; LBP-07-6, 65 NRC 429 (2007)
- the NRC Staff's underlying technical and factual findings on an early site permit application are not open to board reconsideration unless, after a review of the record, the board finds the NRC Staff review inadequate or its findings insufficient; LBP-07-9, 65 NRC 539 (2007)
- the overriding NEPA issue that a board must determine in a proceeding on an early site permit application is whether the NEPA review conducted by the NRC Staff has been adequate; LBP-07-9, 65 NRC 539 (2007)
- the scope of the licensing board's environmental review in an uncontested early site permit proceeding is discussed; LBP-07-1, 65 NRC 27 (2007)
- the scope of the licensing board's safety review in an uncontested early site permit proceeding is discussed; LBP-07-1, 65 NRC 27 (2007)
- uncontested early site permit proceedings are still subject to a mandatory hearing; CLI-07-12, 65 NRC 203 (2007)
- when a proceeding involving an application for a construction permit is uncontested the Board will not conduct a *de novo* review, but rather will conduct a simple sufficiency review of the uncontested

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- issues; LBP-07-1, 65 NRC 27 (2007); LBP-07-6, 65 NRC 429 (2007)
- MATERIAL FALSE STATEMENTS**  
NRC may revoke any license for a material false statement in the application; CLI-07-12, 65 NRC 203 (2007)
- MATERIALITY**  
although one of the central purposes of NEPA is information gathering and disclosure, information immaterial to the proceeding does not necessarily need to be included; LBP-07-3, 65 NRC 237 (2007)
- MATERIALS LICENSE AMENDMENTS**  
the admissibility of proposed contentions may be determined after the Staff has issued the amendment; CLI-07-20, 65 NRC 499 (2007)
- MINORITIES**  
in reviewing environmental justice claims, adverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny; LBP-07-3, 65 NRC 237 (2007)
- MODIFICATION ORDER**  
any challenge to the established terms and conditions of an early site permit can only be raised as a petition to modify a license under section 2.206; CLI-07-12, 65 NRC 203 (2007)
- MOOTNESS**  
a contention of "omission" that has been cured can be dismissed as moot; CLI-07-8, 65 NRC 124 (2007)  
the mere potential that an issue may become moot in the future due to a rulemaking does not affect the finality of a decision resting on current law; CLI-07-13, 65 NRC 211 (2007)  
when a contention alleges the omission of particular information or an issue from an application, and the information is later supplied by the applicant or considered by the Staff in a draft EIS, the contention is moot; LBP-07-2, 65 NRC 153 (2007)
- MOTIONS**  
any motion, other than one made orally on the record during a hearing or as otherwise directed by the presiding officer, must contain a certification that the movant has made a sincere effort to contact the other parties and resolve the matter, and that this effort was unsuccessful; LBP-07-4, 65 NRC 281 (2007)
- MOTIONS FOR RECONSIDERATION**  
a petition must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid; CLI-07-13, 65 NRC 211 (2007); CLI-07-21, 65 NRC 519 (2007); CLI-07-22, 65 NRC 525 (2005)  
because deferral of the consideration of the balance of petitioner's contentions might prejudice parties' legitimate interests, they will be subject to the filing of a timely motion for reconsideration; LBP-07-5, 65 NRC 341 (2007)  
petitioner cannot satisfy NRC's standing requirement by offering a vague claim of 50-mile proximity in an initial petition and later using a petition for reconsideration to fill in gaps with more specific information that was available all along; CLI-07-21, 65 NRC 519 (2007)  
petitioners seeking reconsideration of a Commission order must demonstrate that the Commission has committed clear error, must do so by raising new arguments, and must not previously have been able to make those arguments; CLI-07-22, 65 NRC 525 (2005)  
petitions are limited to 10 pages; CLI-07-22, 65 NRC 525 (2005)
- MOTIONS TO STRIKE**  
a licensing board will not "strike from the record" any portions of petitioner's reply, because any part of a record, whether or not appropriately considered in making any rulings, may become relevant in an appeal; LBP-07-4, 65 NRC 281 (2007)
- NATIONAL ENVIRONMENTAL POLICY ACT**  
a baseline NEPA issue that a board must make in a mandatory hearing on an early site permit application is whether the requirements of NEPA § 102(2)(A), (C), and (E) and 10 C.F.R. Part 51 have been met; LBP-07-9, 65 NRC 539 (2007)  
a baseline NEPA issue that a board must make in a mandatory hearing is to independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; LBP-07-9, 65 NRC 539 (2007)

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- a baseline NEPA issue that a board must make in a mandatory proceeding on an early site permit application is whether a construction permit should be issued, denied, or appropriately conditioned to protect environmental values; LBP-07-9, 65 NRC 539 (2007)
- a reasonably close causal relationship between federal agency action and environmental consequences is necessary to trigger NEPA; CLI-07-8, 65 NRC 124 (2007)
- agencies are required to use a systematic, interdisciplinary approach that will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking that may have an impact on man's environment; LBP-07-1, 65 NRC 27 (2007); LBP-07-6, 65 NRC 429 (2007); LBP-07-9, 65 NRC 539 (2007)
- agencies must include a detailed statement on the environmental impact of the proposed action, any unavoidable adverse environmental effects, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and irreversible and irretrievable commitments of resources that would be involved in the proposed action should it be implemented; LBP-07-1, 65 NRC 27 (2007)
- although one of the central purposes of NEPA is information gathering and disclosure, information immaterial to the proceeding does not necessarily need to be included; LBP-07-3, 65 NRC 237 (2007)
- an agency must consider all reasonable alternatives but is not required to choose the most environmentally benign site; LBP-07-9, 65 NRC 539 (2007)
- an environmental analysis relating to aquatic impacts must, as a practical matter, have a baseline from which to operate; LBP-07-3, 65 NRC 237 (2007)
- an organization's promotion of the public interest, environmental protection, and consumer protection are broad interests shared with many others and too general to constitute a protected interest; CLI-07-18, 65 NRC 399 (2007)
- any power level selected at the COL stage other than the target value used in the environmental impact statement's alternative energy analysis for the early site permit would constitute new information that, if found to be significant, would have to be evaluated at the construction permit or combined license application stage; CLI-07-14, 65 NRC 216 (2007)
- applicant must provide enough information and in sufficient detail to allow for an evaluation of important environmental impacts; LBP-07-3, 65 NRC 237 (2007)
- as a general matter, NEPA imposes no legal duty on the NRC to consider intentional malevolent acts in conjunction with commercial power reactor license renewal applications; CLI-07-9, 65 NRC 139 (2007)
- environmental justice contentions must be based on the specific characteristics of a particular minority community; LBP-07-3, 65 NRC 237 (2007)
- except for its overall NEPA balancing, the NRC can limit its analysis of aquatic impacts to those determined by the Environmental Protection Agency, when EPA has analyzed an alternative technology extensively and made conclusions as to its suitability; LBP-07-3, 65 NRC 237 (2007)
- federal courts and the NRC use a rule of reason in identifying alternatives and do not require that unreasonable alternatives be examined; LBP-07-9, 65 NRC 539 (2007)
- for purposes of the environmental impact statement, the potential construction and operation of the plant or plants for which the early site permit is being obtained is the proposed action that must be the focus of the board's review; LBP-07-1, 65 NRC 27 (2007)
- generic analysis is an appropriate method of meeting the agency's statutory obligations under NEPA; CLI-07-3, 65 NRC 13 (2007)
- if the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs; LBP-07-4, 65 NRC 281 (2007)
- in accord with the environmental justice executive order, NRC has obligated itself to address only the disproportionate distribution of high and adverse effects in its environmental analysis; LBP-07-3, 65 NRC 237 (2007)
- in its environmental justice analysis, NRC makes nearby nuclear facility-related harm an appropriate issue to consider cumulatively with any impacts from proposed reactors; LBP-07-3, 65 NRC 237 (2007)
- in reaching its determinations on the baseline issues, the board will not second-guess the underlying technical or factual findings of the NRC Staff, but if it finds that the Staff review is incomplete or that the Staff findings lack sufficient explanation, it will make its own determination of technical and factual findings; LBP-07-1, 65 NRC 27 (2007)

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- in reviewing environmental justice claims, adverse impacts that fall heavily on minority and impoverished citizens call for particularly close scrutiny; LBP-07-3, 65 NRC 237 (2007)
- interest in the promotion of economic use of energy falls outside the protected zone of interests; CLI-07-18, 65 NRC 399 (2007)
- it is appropriate to defer issues concerning the effects of short-term damage to the environment and the irretrievable commitment of resources to the construction permit or combined license stage; CLI-07-14, 65 NRC 216 (2007)
- it is not necessary to examine every conceivable aspect of federally licensed projects; LBP-07-3, 65 NRC 237 (2007)
- no-action alternative discussions can be brief and can incorporate by reference other sections of an environmental report discussing the project's adverse consequences; LBP-07-3, 65 NRC 237 (2007)
- nothing in the agency's Part 51 NEPA regulations or the Staff's ER preparation guidance in regard to providing a description of the local environment indicates exactly how, as a general matter, a baseline for NEPA analysis is to be established; LBP-07-3, 65 NRC 237 (2007)
- NRC is not required to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities; CLI-07-8, 65 NRC 124 (2007); CLI-07-9, 65 NRC 139 (2007); CLI-07-10, 65 NRC 144 (2007); CLI-07-11, 65 NRC 148 (2007)
- NRC's alternatives analysis should be based around the applicant's goals, including the applicant's economic goals; LBP-07-9, 65 NRC 539 (2007)
- on baseline issues in the mandatory hearing on an early site permit application, the board must reach its own independent determination; LBP-07-9, 65 NRC 539 (2007)
- the claimed impact of a terrorist attack on NRC-licensed facilities is too attenuated to find the proposed federal action to be the proximate cause of that impact; CLI-07-9, 65 NRC 139 (2007); CLI-07-10, 65 NRC 144 (2007)
- the environmental effect caused by third-party miscreants is simply too far removed from the natural or expected consequences of agency action to require a study under NEPA; CLI-07-10, 65 NRC 144 (2007)
- the level of risk of a terrorist attack depends upon political, social, and economic factors external to the NRC licensing process, and thus it is not sensible to hold an NRC licensing decision, rather than terrorists themselves, as the proximate cause of an attack on an NRC-licensed facility; CLI-07-8, 65 NRC 124 (2007)
- the licensing board's standard of review on environmental issues in a mandatory uncontested proceeding on a uranium enrichment facility application is discussed; LBP-07-6, 65 NRC 429 (2007)
- the overriding NEPA issue that a board must determine in a mandatory proceeding on an early site permit application is whether the NEPA review conducted by the NRC Staff has been adequate; LBP-07-9, 65 NRC 539 (2007)
- the permitting agency determines what cooling system a nuclear power facility may use, and NRC factors the impacts resulting from use of that system into the NEPA cost-benefit analysis; CLI-07-16, 65 NRC 371 (2007)
- the statute's dual purpose is to ensure that federal officials fully take into account the environmental consequences of a federal action before reaching major decisions and to inform the public, Congress, and other agencies of those consequences; LBP-07-9, 65 NRC 539 (2007)
- there is no proximate-cause link between an NRC licensing action, such as renewing an operating license, and any altered risk of terrorist attack; CLI-07-8, 65 NRC 124 (2007)
- to implicate environmental justice scrutiny, support must be presented regarding the alleged existence of adverse impacts or harm on the physical or human environment, and a supported case must be made that these purported adverse impacts could disproportionately affect poor or minority communities in the vicinity of the facility at issue; LBP-07-3, 65 NRC 237 (2007)
- NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT**
- Congress severely limited NRC's scope of inquiry into Clean Water Act § 316(a) determinations to examining whether the EPA or the state agency considered its permit to be a section 316(a) determination; CLI-07-16, 65 NRC 371 (2007)
- for purposes of NPDES permits, effluent is defined as liquid waste that is discharged into a river, lake, or other body of water; CLI-07-16, 65 NRC 371 (2007)

## SUBJECT INDEX

- heat shock falls within the parameters of the NPDES provisions of the Clean Water Act's section 402(b); CLI-07-16, 65 NRC 371 (2007)
- if applicant's plant utilizes a once-through cooling system, applicant shall provide a copy of a Clean Water Act § 316a variance or equivalent state permit and supporting documentation; CLI-07-16, 65 NRC 371 (2007)
- no state may issue an NPDES permit for a period longer than 5 years; CLI-07-16, 65 NRC 371 (2007)
- permits may address thermal discharges into bodies of water; CLI-07-16, 65 NRC 371 (2007)
- the Commission can legitimately rely on a state permit that expires only 5 years into the 20-year renewal period; CLI-07-16, 65 NRC 371 (2007)
- NATIONAL SECURITY INFORMATION**
- Staff may withhold some facts underlying its findings and conclusions on terrorism-related risks; CLI-07-11, 65 NRC 148 (2007)
- NO SIGNIFICANT HAZARDS DETERMINATION**
- Staff's no significant hazards consideration determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination; LBP-07-2, 65 NRC 153 (2007)
- NO-ACTION ALTERNATIVE**
- discussions can be brief and can incorporate by reference other sections of an environmental report discussing the project's adverse consequences; LBP-07-3, 65 NRC 237 (2007)
- NONCOMPLIANCES**
- licensee is not required to submit docketed information on the resolution of each fire protection noncompliance during its transition to a risk-informed and performance-based fire protection program, but it is required to implement and maintain compensatory measures for remaining noncompliances; DD-07-3, 65 NRC 643 (2007)
- NONDISCLOSURE AGREEMENTS**
- a sample agreement is provided; CLI-07-18, 65 NRC 399 (2007)
- if applicants and petitioners cannot agree on the terms of a confidentiality and nondisclosure agreement, then they shall inform the presiding officer, indicate specifically the areas where they disagree, and then move the presiding officer for issuance of a protective order; CLI-07-18, 65 NRC 399 (2007)
- NRC STAFF**
- Staff ordinarily does not participate as a party in the adjudicatory portion of license transfer proceedings; CLI-07-18, 65 NRC 399 (2007)
- the Staff elects whether or not to be a party to some or all contentions; CLI-07-20, 65 NRC 499 (2007)
- NRC STAFF REVIEW**
- although the primary duties of NEPA fall on the NRC Staff in NRC proceedings, the initial requirement to analyze the environmental impacts of an action, including license renewal, is directed to applicants; LBP-07-4, 65 NRC 281 (2007)
- Staff appropriately uses an audit system to prioritize the facts it will independently verify, taking into account whether the issue involves first-of-a-kind analysis, use of new modeling techniques, application of new or revised review guidance, areas of higher significance based upon risk-informed reviews, or where the Staff's independent analysis or technical experience and judgment does not support the analysis results of the applicant; CLI-07-12, 65 NRC 203 (2007)
- the NRC Staff's underlying technical and factual findings on an early site permit application are not open to board reconsideration unless, after a review of the record, the board finds the NRC Staff review inadequate or its findings insufficient; LBP-07-9, 65 NRC 539 (2007)
- the overriding NEPA issue that a board must determine in a mandatory proceeding on an early site permit application is whether the NEPA review conducted by the NRC Staff has been adequate; LBP-07-9, 65 NRC 539 (2007)
- NUCLEAR REGULATORY COMMISSION, AUTHORITY**
- Congress severely limited NRC's scope of inquiry into Clean Water Act § 316(a) determinations to examining whether the EPA or the state agency considered its permit to be a section 316(a) determination; CLI-07-16, 65 NRC 371 (2007)
- if the Commission's supervisory authority constituted grounds for a party's own request for appellate review, there would be no limit to the kinds of arguments parties could legitimately present on appeal, a result at odds with the Commission's oft-expressed intent to limit the availability of such appeals; CLI-07-1, 65 NRC 1 (2007)

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NRC has broad legal authority under the Atomic Energy Act and has authority to independently verify the facts contained in an application; CLI-07-12, 65 NRC 203 (2007)

NRC is prohibited from reviewing any effluent limitation or other requirement established pursuant to the Clean Water Act; CLI-07-16, 65 NRC 371 (2007)

the Commission has the authority to appropriately condition the license approved by a board; CLI-07-12, 65 NRC 203 (2007)

the Commission has the authority to enter case-specific procedural orders to facilitate the efficient resolution of issues before a licensing board; LBP-07-3, 65 NRC 237 (2007); CLI-07-17, 65 NRC 392 (2007)

the Commission will endeavor to identify efficiencies, and provide pertinent resources, to further reduce the time the agency needs to complete reviews and reach decisions in licensing uranium enrichment facilities; CLI-07-17, 65 NRC 392 (2007)

the permitting agency determines what cooling system a nuclear power facility may use, and NRC factors the impacts resulting from use of that system into the NEPA cost-benefit analysis; CLI-07-16, 65 NRC 371 (2007)

**OPERATING LICENSE AMENDMENTS**

applicant normally is required to perform two large-transient tests before an extended power uprate can be granted; LBP-07-2, 65 NRC 153 (2007)

if a board determines after full adjudication that the license amendment should not have been granted, it may be revoked or conditioned; LBP-07-2, 65 NRC 153 (2007)

**OPERATING LICENSE RENEWAL**

age-related degradation can affect a number of reactor and auxiliary systems, including the reactor vessel, the reactor coolant system pressure boundary, steam generators, electrical cables, the pressurizer, heat exchangers, and the spent fuel pool; LBP-07-4, 65 NRC 281 (2007)

alternatives to mitigate severe accidents must be considered for all plants that have not previously considered such alternatives; LBP-07-4, 65 NRC 281 (2007)

an applicant seeking to renew or extend the term of an operating license for a power reactor need not submit the financial information that is required in an application for an initial license; LBP-07-4, 65 NRC 281 (2007)

an emergency evacuation issue was admitted in a license renewal proceeding because it was in the context of three of the specific input data for the severe accident mitigation alternatives analysis that license renewal applicants are required to perform; LBP-07-4, 65 NRC 281 (2007)

analysis of entrainment and impingement of fish, and heat shock, is required only for plants with once-through cooling or cooling ponds, because it has been determined generically that such impacts are small for plants that use cooling towers; LBP-07-4, 65 NRC 281 (2007)

applicant must submit with its application an environmental report, which must describe the proposed action, including plans to modify the facility or its administrative control procedures, and the modifications directly affecting the environment or affecting plant effluents that affect the environment; LBP-07-4, 65 NRC 281 (2007)

Category 2, or plant-specific, issues involve environmental impact severity levels that might differ significantly from one plant to another, or impacts for which additional plant-specific mitigation measures should be considered; LBP-07-4, 65 NRC 281 (2007)

discharge of chlorine or other biocides is a Category 1, out-of-scope issue; LBP-07-4, 65 NRC 281 (2007)

emergency planning is excluded from consideration because the issue is not germane to age-related degradation or unique to the period of time covered by the license renewal; LBP-07-4, 65 NRC 281 (2007)

if a structure or component is already required to be replaced at mandated, specified time periods, it would fall outside the scope of license renewal review; LBP-07-4, 65 NRC 281 (2007)

issues and concerns involved in an extended 20 years of operation are not identical to the issues reviewed when a reactor facility is first built and licensed; LBP-07-4, 65 NRC 281 (2007)

radiological monitoring is an operational program that is beyond the scope of license renewal; LBP-07-4, 65 NRC 281 (2007)

requiring a full reassessment of safety issues that were thoroughly reviewed when the facility was first licensed and continue to be routinely monitored and assessed by ongoing agency oversight and

## SUBJECT INDEX

- agency-mandated licensee programs would be both unnecessary and wasteful; LBP-07-4, 65 NRC 281 (2007)
- the generic environmental impact statement for license renewal was part of an amendment of the requirements of Part 51 undertaken by the Commission to establish environmental review requirements for license renewals that were both efficient and more effectively focused; LBP-07-4, 65 NRC 281 (2007)
- the safety review focuses upon those potential detrimental effects of aging that are not routinely addressed by ongoing regulatory oversight programs; LBP-07-4, 65 NRC 281 (2007)
- the standard for the Commission's decision on license renewal applications is whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable; LBP-07-4, 65 NRC 281 (2007)
- when a licensee is applying to extend its operating license, the NRC cannot address requests for enforcement action; DD-07-3, 65 NRC 643 (2007)
- PARTIES**
- NRC Staff ordinarily does not participate as a party in the adjudicatory portion of license transfer proceedings; CLI-07-18, 65 NRC 399 (2007)
- only a party to a proceeding, or an interested governmental entity participating under section 2.315, may file a request to stay proceedings pending a rulemaking; CLI-07-13, 65 NRC 211 (2007)
- the Staff elects whether or not to be a party to some or all contentions; CLI-07-20, 65 NRC 499 (2007)
- PERMIT CONDITIONS**
- radioactive waste management systems, structures, and components for a future reactor must include features to preclude accidental releases of radionuclides into potential liquid pathways; CLI-07-14, 65 NRC 216 (2007)
- PLEADINGS**
- although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleadings, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not "fill in" any missing support, but rather are legally required to deny the contention; LBP-07-4, 65 NRC 281 (2007)
- the contention rule is strict by design and does not permit the filing of a vague, unparticularized contention, unsupported by affidavit, expert, or documentary support; LBP-07-5, 65 NRC 341 (2007)
- POWER UPRATE**
- applicant normally is required to perform two large-transient tests before an extended power uprate can be granted; LBP-07-2, 65 NRC 153 (2007)
- PRECEDENTIAL EFFECT**
- NRC is not obligated to adhere, in all of its proceedings, to the first court of appeals decision to address a controversial question; CLI-07-8, 65 NRC 124 (2007)
- the Atomic Safety and Licensing Appeal Board was disbanded in 1991, but its decisions still carry precedential value; CLI-07-16, 65 NRC 371 (2007)
- PRECLUSION DOCTRINES**
- a court of appeals decision may prevent the government from relitigating the same issue with the same party, but it still leaves the government free to litigate the same issue in the future with other litigants; CLI-07-8, 65 NRC 124 (2007)
- PRESIDING OFFICER, AUTHORITY**
- the presiding officer or licensing board has discretion to accelerate the merits hearing on safety issues, but not on environmental issues; CLI-07-17, 65 NRC 392 (2007)
- PRO SE LITIGANTS**
- although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleading, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not "fill in" any missing support, but, rather, are legally required to deny the contention; LBP-07-4, 65 NRC 281 (2007); LBP-07-5, 65 NRC 341 (2007)
- PROPRIETARY INFORMATION**
- if petitioners cannot show that their new or revised contentions could not have been submitted without the requested access to redacted information in the license transfer application, then they will have to meet not only the contention pleading requirements, but also the late-filing requirements; CLI-07-18, 65 NRC 399 (2007)

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### PROTECTIVE ORDERS

if applicants and petitioners cannot agree on the terms of a confidentiality and nondisclosure agreement, then they shall inform the presiding officer, indicate specifically the areas where they disagree, and then move the presiding officer for issuance of a protective order; CLI-07-18, 65 NRC 399 (2007)

### PROXIMATE CAUSE

a reasonably close causal relationship between federal agency action and environmental consequences is necessary to trigger NEPA; CLI-07-8, 65 NRC 124 (2007)

the claimed impact of a terrorist attack on NRC-licensed facilities is too attenuated to find the proposed federal action to be the proximate cause of that impact; CLI-07-9, 65 NRC 139 (2007)

the claimed impact of terrorist attacks on NRC-licensed facilities is too attenuated to find the proposed federal action to be the proximate cause of that impact; CLI-07-10, 65 NRC 144 (2007)

the effects that must be considered in an environmental impact statement are those that are caused by the action and there must be a reasonably close causal relationship between the proposed action and an alleged environmental effect or impact, similar to proximate cause in tort law, before that effect need be considered; LBP-07-4, 65 NRC 281 (2007)

the level of risk of a terrorist attack depends upon political, social, and economic factors external to the NRC licensing process, and thus it is not sensible to hold an NRC licensing decision, rather than terrorists themselves, as the proximate cause of an attack on an NRC-licensed facility; CLI-07-8, 65 NRC 124 (2007)

there is no proximate-cause link between an NRC licensing action, such as renewing an operating license, and any altered risk of terrorist attack; CLI-07-8, 65 NRC 124 (2007)

where an agency has no ability to prevent a certain effect due to its limited statutory authority, it cannot be considered a legally relevant cause of the effect; LBP-07-4, 65 NRC 281 (2007)

### PROXIMITY PRESUMPTION

a "same zip code" test for standing is inappropriate, given that the sizes of zip-code areas vary greatly throughout the country; CLI-07-22, 65 NRC 525 (2005)

a claim of residence within 50 miles of a facility might entitle petitioner to a presumption of standing based on proximity in a reactor construction permit or operating license proceeding; CLI-07-19, 65 NRC 423 (2007)

a declaration in support of petitioner's standing based on geographic proximity must include a specific statement of distance from the licensed facility; CLI-07-18, 65 NRC 399 (2007)

assertions that a member lives within the service area of the utility that operates a licensed facility or within the same county as the facility is insufficiently specific to justify a finding of standing; CLI-07-18, 65 NRC 399 (2007)

close proximity to a facility has always been deemed to be enough, standing alone, to establish the requisite interest to confer standing; LBP-07-4, 65 NRC 281 (2007)

descriptions of activities as being "near," "close proximity," or "in the vicinity" of the facility in question are insufficient to establish standing; CLI-07-18, 65 NRC 399 (2007)

for an organization to qualify for the proximity presumption, a bare assertion that a member lives within 50 miles is not sufficient; LBP-07-4, 65 NRC 281 (2007)

in license transfer cases, the Commission determines on a case-by-case basis whether the proximity presumption should apply, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue, and specifically taking into account the nature of the proposed action and the significance of the radioactive source; CLI-07-19, 65 NRC 423 (2007)

local governmental bodies within whose boundaries a facility is located, do not need to make any further demonstration of standing; CLI-07-18, 65 NRC 399 (2007)

occasional contact with an affected area is not sufficient to establish standing; LBP-07-4, 65 NRC 281 (2007)

petitioner cannot satisfy NRC's standing requirement by offering a vague claim of 50-mile proximity in an initial petition and later using a petition for reconsideration to fill in gaps with more specific information that was available all along; CLI-07-21, 65 NRC 519 (2007)

proximity standing in a license transfer proceeding has been recognized at close distances where a petitioner frequently engages in substantial business and related activities in the vicinity of the facility, engages in normal, everyday activities in the vicinity, has regular and frequent contacts in an area near



## SUBJECT INDEX

- a licensed facility, or otherwise has visits of a length and nature showing an ongoing connection and presence; CLI-07-21, 65 NRC 519 (2007)
- proximity-based standing has been denied where contact has been limited to mere occasional trips to areas located close to reactors; CLI-07-21, 65 NRC 519 (2007)
- proximity-based standing in license transfer proceedings had been denied to petitioners within 5-10 miles, 12 miles, and 40 miles from licensed facilities; CLI-07-21, 65 NRC 519 (2007)
- significant contacts with an affected area can be sufficient to establish standing, even when full-time residence within the 50-mile zone is not shown; LBP-07-4, 65 NRC 281 (2007)
- the longest specific distance for which the Commission has granted proximity-based standing in a post-*Vogtle* license transfer case is 6 to 6-1/2 miles; CLI-07-21, 65 NRC 519 (2007)
- PUBLIC COMMENTS**
- any member of the public who wishes to comment on the draft environmental assessment outside the adjudicatory process, pursuant to NRC's normal environmental process, must do so within 30 days after it is made available (or within 45 days) of the publication of a draft environmental impact statement; CLI-07-11, 65 NRC 148 (2007)
- PYROCHLORE**
- this material contains more than 0.05% by weight uranium and thorium, and thus it is subject to NRC regulation as a source material; LBP-07-5, 65 NRC 341 (2007)
- QUALITY ASSURANCE**
- applicant normally is required to perform two large-transient tests before an extended power uprate can be granted; LBP-07-2, 65 NRC 153 (2007)
- each nuclear power plant must implement a program that includes all testing required to demonstrate that the structures, systems, and components will perform satisfactorily in service; LBP-07-2, 65 NRC 153 (2007)
- RADIATION PROTECTION PROGRAM**
- ALARA means making every reasonable effort to maintain exposure to radiation as far below the dose limits set out in Part 20 as is possible, consistent with the activity for which the licensed activity is undertaken; LBP-07-6, 65 NRC 429 (2007)
- applicant's recordkeeping and reporting commitments for occupational exposure to radiation exceeding the dose limits are described; LBP-07-6, 65 NRC 429 (2007)
- containers are exempted from labeling requirements if they are attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the established limits; LBP-07-6, 65 NRC 429 (2007)
- recordkeeping and reporting commitments for occupational exposure to radiation exceeding the dose limits are described; LBP-07-6, 65 NRC 429 (2007)
- the occupational radiation protection measures that a uranium enrichment facility must address are discussed; LBP-07-6, 65 NRC 429 (2007)
- use of conspicuously posted signs, in conjunction with the applicant's radiation work permit program, is an acceptable alternative; LBP-07-6, 65 NRC 429 (2007)
- RADIOACTIVE CONTAMINATION**
- NRC includes the EPA drinking water standard in the technical specifications that a licensee must meet; LBP-07-9, 65 NRC 539 (2007)
- RADIOACTIVE RELEASES**
- an early site permit is conditioned to require that radioactive waste management systems, structures, and components for a future reactor must include features to preclude accidental releases of radionuclides into potential liquid pathways; CLI-07-14, 65 NRC 216 (2007)
- potential radiological risks associated with an ISFSI license transfer are lower than those for an operating facility, because an ISFSI is essentially a passive structure, and there therefore is less chance of widespread radioactive release; CLI-07-19, 65 NRC 423 (2007)
- Staff's generic environmental impact statement for license renewal has already performed a discretionary analysis of terrorist acts in connection with license renewal and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events; CLI-07-8, 65 NRC 124 (2007)

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### RADIOACTIVE WASTE DISPOSAL

transfer of depleted uranium to DOE for dispositioning is allowed for an NRC-licensed enrichment licensee; LBP-07-6, 65 NRC 429 (2007)

### RADIOACTIVE WASTE SYSTEMS

an early site permit is conditioned to require that radioactive waste management systems, structures, and components for a future reactor must include features to preclude accidental releases of radionuclides into potential liquid pathways; CLI-07-14, 65 NRC 216 (2007)

### RADIOACTIVE WASTE, LOW-LEVEL

depleted uranium is classified as a low-level waste; LBP-07-6, 65 NRC 429 (2007)

### RADIOLOGICAL CONTAMINATION

the potential for tritium contamination of water is primarily a NEPA issue because it involves the environmental impacts of the proposed early site permit and possible mitigation measures, but also has a safety element because safety regulations require that exposure to radiation be as low as reasonably achievable; LBP-07-9, 65 NRC 539 (2007)

### RADIOLOGICAL MONITORING

this is an operational program that is beyond the scope of license renewal; LBP-07-4, 65 NRC 281 (2007)

### REACTOR CORE

Staff's generic environmental impact statement for license renewal has already performed a discretionary analysis of terrorist acts in connection with license renewal and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events; CLI-07-8, 65 NRC 124 (2007)

### REACTOR DESIGN

the EPA standard of 25 mrem only applies to the uranium fuel cycle, which only includes the generation of electricity by a light-water-cooled nuclear power plant; LBP-07-9, 65 NRC 539 (2007)

### RECORDKEEPING

applicant's commitments for occupational exposure to radiation exceeding the dose limits are described; LBP-07-6, 65 NRC 429 (2007)

### REFERRED RULINGS

outside the context of petitions for interlocutory review, the Commission may take interlocutory review of questions or rulings that a licensing board either refers or certifies to the Commission; CLI-07-1, 65 NRC 1 (2007)

### REGULATIONS

a contention that challenges any Commission rule is outside the scope of the proceeding because, absent a waiver, no rule or regulation of the Commission is subject to attack in any adjudicatory proceeding; CLI-07-16, 65 NRC 371 (2007); LBP-07-4, 65 NRC 281 (2007)

an exemption can be granted if it is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest; LBP-07-6, 65 NRC 429 (2007)

because a generic environmental analysis was incorporated into a regulation, the conclusions of that analysis are not subject to attack in an individual adjudication unless the rule is waived or suspended; CLI-07-3, 65 NRC 13 (2007)

contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking and not admissible; LBP-07-3, 65 NRC 237 (2007)

it may be inferred that an exemption is implicitly authorized by law if all of the conditions for granting the exemption are met and no other provision prohibits, or otherwise restricts, its application; LBP-07-6, 65 NRC 429 (2007)

once an early site permit is issued, the Commission may not impose new requirements on the site unless they are necessary to ensure adequate protection of the public health and safety or the common defense and security; LBP-07-9, 65 NRC 539 (2007)

### REGULATIONS, INTERPRETATION

NRC has traditionally read the language "authorized by law" to be the functional equivalent of "not prohibited by law"; LBP-07-6, 65 NRC 429 (2007)

the language of a regulation should not be read to destroy itself and a provision should not be read in a way that is inconsistent with its purpose; LBP-07-6, 65 NRC 429 (2007)

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### REGULATORY GUIDES

guidance documents do not prescribe requirements, are not substitutes for regulations, and are not binding authority; LBP-07-6, 65 NRC 429 (2007)

Staff guidance documents are worth noting but do not have the force of law and are not binding on the board's determination as to whether applicant's testing program satisfies the legal standard; LBP-07-2, 65 NRC 153 (2007)

### REPLY BRIEFS

a petitioner may file a reply to any answer within 7 days after service of that answer; LBP-07-4, 65 NRC 281 (2007)

a reply to an answer may not be used as a vehicle to raise new arguments or claims not found in the original contention or be used to cure an otherwise deficient contention; LBP-07-4, 65 NRC 281 (2007)

it is appropriate for a reply to respond to the legal, logical, and factual arguments presented in the answers, as long as new issues are not raised; LBP-07-4, 65 NRC 281 (2007)

### REPORTING REQUIREMENTS

applicant's commitments for occupational exposure to radiation exceeding the dose limits are described; LBP-07-6, 65 NRC 429 (2007)

generator load rejection transients must be analyzed and reported to the NRC; LBP-07-2, 65 NRC 153 (2007)

licensee is not required to submit docketed information on the resolution of each fire protection noncompliance during its transition to a risk-informed and performance-based fire protection program, but it is required to implement and maintain compensatory measures for remaining noncompliances; DD-07-3, 65 NRC 643 (2007)

when an MSIV transient occurs, the reactor operator is required to analyze what happened and how the reactor systems responded and performed, and to report to the NRC; LBP-07-2, 65 NRC 153 (2007)

### REVIEW

See Appellate Review; Environmental Review; Immediate Effectiveness Review; NRC Staff Review; Safety Review; Standard of Review

### REVIEW, DISCRETIONARY

outside the context of petitions for interlocutory review, the Commission may take interlocutory review of questions or rulings that a licensing board either refers or certifies to the Commission; CLI-07-1, 65 NRC 1 (2007)

petitioner must demonstrate that the licensing board's ruling at issue either threatens the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer's final decision, or affects the basic structure of the proceeding in a pervasive or unusual manner; CLI-07-1, 65 NRC 1 (2007); CLI-07-2, 65 NRC 10 (2007)

the Commission customarily does not entertain discretionary interlocutory appeals, due in large part to a general unwillingness to engage in piecemeal interference in ongoing Licensing Board proceedings; CLI-07-1, 65 NRC 1 (2007)

### REVIEW, INTERLOCUTORY

if the Commission's supervisory authority constituted grounds for a party's own request for appellate review, there would be no limit to the kinds of arguments parties could legitimately present on appeal, a result at odds with the Commission's oft-expressed intent to limit the availability of such appeals; CLI-07-1, 65 NRC 1 (2007)

outside the context of petitions for interlocutory review, the Commission may take interlocutory review of questions or rulings that a licensing board either refers or certifies to the Commission; CLI-07-1, 65 NRC 1 (2007)

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the Commission customarily does not entertain discretionary interlocutory appeals, due in large part to a general unwillingness to engage in piecemeal interference in ongoing licensing board proceedings; CLI-07-1, 65 NRC 1 (2007)

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the question whether to hold an NRC enforcement proceeding in abeyance pending a related criminal prosecution is generally suitable for interlocutory review because the abeyance issue cannot await the end of the proceeding; CLI-07-6, 65 NRC 112 (2007)

### REVIEW, SUA SPONTE

the Commission has used sua sponte review as a vehicle to address unappealed issues or orders, to set a specific timetable or otherwise customize NRC procedures for individual adjudications, to suspend a proceeding, to vacate an unreviewed board order after withdrawal of the challenged application, to decide whether to disqualify a presiding officer, to address an issue of wide implication, and to provide guidance to a licensing board; CLI-07-1, 65 NRC 1 (2007)

the Commission will occasionally take review of an issue on its own motion when that issue is not otherwise before it on appeal; CLI-07-1, 65 NRC 1 (2007)

the Commission's exercise of its authority to instruct the board to certify novel license renewal issues yields essentially the same result as taking sua sponte review; CLI-07-1, 65 NRC 1 (2007)

### REVOCAION OF LICENSES

NRC may revoke any license for a material false statement in the application; CLI-07-12, 65 NRC 203 (2007)

### RISK ANALYSIS

Staff's generic environmental impact statement for license renewal has already performed a discretionary analysis of terrorist acts in connection with license renewal and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events; CLI-07-8, 65 NRC 124 (2007)

the level of risk of a terrorist attack depends upon political, social, and economic factors external to the NRC licensing process, and thus it is not sensible to hold an NRC licensing decision, rather than terrorists themselves, as the proximate cause of an attack on an NRC-licensed facility; CLI-07-8, 65 NRC 124 (2007)

### RISK-INFORMED PERFORMANCE-BASED PROGRAMS

licensee is not required to submit docketed information on the resolution of each fire protection noncompliance during its transition to a risk-informed and performance-based fire protection program, but it is required to implement and maintain compensatory measures for remaining noncompliances; DD-07-3, 65 NRC 643 (2007)

licensees may voluntarily adopt a risk-informed and performance-based fire protection program; DD-07-3, 65 NRC 643 (2007)

### RISKS

potential radiological risks associated with an ISFSI license transfer are lower than those for an operating facility, because an ISFSI is essentially a passive structure, and there therefore is less chance of widespread radioactive release; CLI-07-19, 65 NRC 423 (2007)

### RULEMAKING

a contention that attacks a Commission rule, or that seeks to litigate a matter that is, or clearly is about to become, the subject of a rulemaking, is inadmissible; LBP-07-3, 65 NRC 237 (2007)

agency decisions on rulemaking petitions are judicially reviewable; CLI-07-13, 65 NRC 211 (2007)

if there is reason to believe that a departure from the NRC's license renewal generic environmental impact statement and related regulations is warranted, then the remedy is a petition for rulemaking to modify the rules or a petition for a waiver of the rules based on special circumstances, not an adjudicatory contention; CLI-07-8, 65 NRC 124 (2007)

it makes more sense for NRC to study whether, as a technical matter, the agency should modify its requirements for all plants across the board than to litigate in particular adjudications whether generic findings in the GEIS are impeached by a claim of new information; CLI-07-3, 65 NRC 13 (2007)

only a party to a proceeding, or an interested governmental entity participating under section 2.315, may file a request to stay proceedings pending a rulemaking; CLI-07-13, 65 NRC 211 (2007)

outside the adjudicatory context, a petitioner's concerns may be addressed through a petition for rulemaking; LBP-07-4, 65 NRC 281 (2007)

pending resolution of a rulemaking petition, NRC Staff may, where appropriate, seek the Commission's permission to suspend the generic determination of a Category 1 issue and include a new analysis in the plant-specific environmental impact statements; CLI-07-3, 65 NRC 13 (2007)

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the mere potential that an issue may become moot in the future due to a rulemaking does not affect the finality of a decision resting on current law; CLI-07-13, 65 NRC 211 (2007)  
where a petitioner argues that new information contradicts assumptions underlying the entire generic analysis for all facilities or a whole class of facilities, the appropriate remedy is a rulemaking petition; CLI-07-3, 65 NRC 13 (2007)

### RULES

a contention that challenges any Commission rule is outside the scope of the proceeding because, absent a waiver, no rule or regulation of the Commission is subject to attack in any adjudicatory proceeding; LBP-07-4, 65 NRC 281 (2007)

an adjudication is not the proper forum for challenging applicable statutory requirements or the basic structure of the agency's regulatory process; LBP-07-3, 65 NRC 237 (2007)

if a rule is suspended for analysis, each supplemental EIS would reflect the corrected analysis until such time as the rule is amended; CLI-07-3, 65 NRC 13 (2007)

See also Waiver of Rule

### RULES OF PRACTICE

a claim of residence within 50 miles of a facility might entitle petitioner to a presumption of standing based on proximity in a reactor construction permit or operating license proceeding; CLI-07-19, 65 NRC 423 (2007)

a contention that attacks a Commission rule, or that seeks to litigate a matter that is, or clearly is about to become, the subject of a rulemaking, is inadmissible; LBP-07-3, 65 NRC 237 (2007)

a contention that fails to comply with any of the pleading requirements of 10 C.F.R. 2.309(f)(1) must be rejected; LBP-07-7, 65 NRC 507 (2007)

a contention that simply states the petitioner's views about what regulatory policy should be does not present a litigable issue; LBP-07-3, 65 NRC 237 (2007)

a declaration in support of petitioner's standing based on geographic proximity must include a specific statement of distance from the licensed facility; CLI-07-18, 65 NRC 399 (2007)

a detailed summary of relevant case law on contention admissibility is presented; LBP-07-4, 65 NRC 281 (2007)

a licensing board will not "strike from the record" any portions of petitioner's reply, because any part of a record, whether or not appropriately considered in making any rulings, may become relevant in an appeal; LBP-07-4, 65 NRC 281 (2007)

a motion for reconsideration must demonstrate compelling circumstances, such as the existence of a clear and material error in a decision, which could not have reasonably been anticipated, that renders the decision invalid; CLI-07-13, 65 NRC 211 (2007)

a petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid; CLI-07-22, 65 NRC 525 (2005)

a petition seeking review of an order granting or denying an abeyance motion meets NRC's standard for interlocutory review because the appealed order would have an immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer's final decision; CLI-07-6, 65 NRC 112 (2007)

a petitioner may file a reply to any answer within 7 days after service of that answer; LBP-07-4, 65 NRC 281 (2007)

a petitioner may in instances of exigent or unavoidable circumstances file a request for an extension of time to file an original hearing petition and contentions; LBP-07-4, 65 NRC 281 (2007)

a reply to an answer may not be used as a vehicle to raise new arguments or claims not found in the original contention or be used to cure an otherwise deficient contention; LBP-07-4, 65 NRC 281 (2007)

a "same zip code" test for standing is inappropriate, given that the sizes of zip-code areas vary greatly throughout the country; CLI-07-22, 65 NRC 525 (2005)

all properly formulated contentions must focus on the license application in question, challenging either specific portions of or alleged omissions from the application (including the Safety Analysis Report and the Environmental Report) so as to establish that a genuine dispute exists with the applicant on a material issue of law or fact; LBP-07-3, 65 NRC 237 (2007)

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- although a board may appropriately view a petitioner's supporting information in a light favorable to the petitioner, failure to provide such information regarding a proffered contention requires that the contention be rejected; LBP-07-3, 65 NRC 237 (2007)
- although a certain amount of latitude might appropriately be extended to *pro se* litigants, there nonetheless must be a substantial endeavor to meet the clear regulatory requirements for a hearing request; LBP-07-5, 65 NRC 341 (2007)
- although licensing boards generally are to litigate "contentions" rather than "bases," it has been recognized that the reach of a contention necessarily hinges upon its terms coupled with its stated bases; LBP-07-3, 65 NRC 237 (2007)
- although NRC may reasonably accommodate *pro se* petitioners who are not technically perfect in their pleading, such parties must still meet the basic requirements of the contention admissibility rules, and if these are not met, boards may not "fill in" any missing support, but, rather, are legally required to deny the contention; LBP-07-4, 65 NRC 281 (2007)
- an advisory body that lacks executive or legislative responsibilities is so far removed from having the representative authority to speak and act for the public that it does not qualify as a governmental entity; CLI-07-18, 65 NRC 399 (2007)
- an individual may satisfy the standing requirements by demonstrating that his or her residence is within the geographical area that might be affected by an accidental release of fission products, and in proceedings involving nuclear power plants this area has been defined as being within a 50-mile radius of such a plant; LBP-07-4, 65 NRC 281 (2007)
- an individual petitioner should not request intervention in his own right and simultaneously authorize other petitioners to represent his or her interests; CLI-07-19, 65 NRC 423 (2007)
- an interested state or political subdivision thereof that has not become a party to the proceeding must be accorded a reasonable opportunity to participate, through a single representative, in the hearing of one or more of the admitted contentions; LBP-07-5, 65 NRC 341 (2007)
- an organization's promotion of the public interest, environmental protection, and consumer protection are broad interests shared with many others and too general to constitute a protected interest under the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 399 (2007)
- any contention alleging deficiencies or errors in an application must also indicate some significant link between the claimed deficiency and either the health and safety of the public or the environment; LBP-07-3, 65 NRC 237 (2007)
- any contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed; LBP-07-3, 65 NRC 237 (2007)
- any contention that falls outside the specified scope of the proceeding must be rejected; LBP-07-3, 65 NRC 237 (2007)
- any material supporting petitioner's contention, including those portions of the material that are not relied upon, is subject to licensing board scrutiny; LBP-07-3, 65 NRC 237 (2007)
- any motion, other than one made orally on the record during a hearing or as otherwise directed by the presiding officer, must contain a certification that the movant has made a sincere effort to contact the other parties and resolve the matter, and that this effort was unsuccessful; LBP-07-4, 65 NRC 281 (2007)
- any organization seeking representational standing must also show that at least one of its members may be affected by the Commission's approval of the transfer, must identify that member, and must demonstrate that the member has (preferably by affidavit) authorized the organization to represent him or her and to request a hearing on his or her behalf; CLI-07-18, 65 NRC 399 (2007); LBP-07-4, 65 NRC 281 (2007)
- appeals as of right are permitted in three circumstances only; CLI-07-2, 65 NRC 10 (2007)
- assertions that a member lives within the service area of the utility that operates a licensed facility or within the same county as the facility is insufficiently specific to justify a finding of standing; CLI-07-18, 65 NRC 399 (2007)
- before an early site permit can be made effective, the Commission must review and approve the licensing board's initial decision authorizing its issuance; CLI-07-7, 65 NRC 122 (2007)
- challenges to the merits of contentions must await either motions for summary disposition or an evidentiary hearing; LBP-07-5, 65 NRC 341 (2007)

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contentions must be filed with the original petition within 60 days of notice of the proceeding in the *Federal Register*, unless a longer period is therein specified, an extension is granted, or the contentions meet certain criteria for late-filed or new contentions based on information that is available only at a later time; LBP-07-4, 65 NRC 281 (2007)

descriptions of activities as being "near," in "close proximity," or "in the vicinity" of the facility in question are insufficient to establish standing; CLI-07-18, 65 NRC 399 (2007)

failure of a contention to meet any of the pleading requirements of section 2.309(f)(1) is grounds for its dismissal; LBP-07-3, 65 NRC 237 (2007); LBP-07-4, 65 NRC 281 (2007)

hearings regarding immediately effective enforcement orders must be held expeditiously; CLI-07-6, 65 NRC 112 (2007)

if a petitioner neglects to provide the requisite support for its contentions, it is not within the board's power to make assumptions of fact that favor the petitioner, nor may the board supply information that is lacking; LBP-07-3, 65 NRC 237 (2007)

if an organization does not identify the members it purportedly represents, the Commission cannot determine whether the organization actually does represent members who consider that they will be affected by the licensing action or is simply seeking the vindication of its own value preference; CLI-07-18, 65 NRC 399 (2007)

if petitioners cannot show that their new or revised contentions could not have been submitted without the requested access to the redacted information in the license transfer application, then they will have to meet not only the contention pleading requirements, but also the late-filing requirements; CLI-07-18, 65 NRC 399 (2007)

in a license transfer case, a petitioner cannot, for purposes of standing, successfully claim injury based on the financial qualifications and assurances of the transferor; CLI-07-22, 65 NRC 525 (2005)

in analyzing the abeyance question, the risk of harm that the subject of the enforcement action could suffer from an abeyance order is balanced against the risk of harm DOJ could suffer from the NRC Staff moving forward in its enforcement hearing; CLI-07-6, 65 NRC 112 (2007)

in assessing a petition to determine whether the elements for standing are met, boards are to construe the petition in favor of the petitioner; LBP-07-3, 65 NRC 237 (2007)

in determining whether an individual or organization should be granted party status in a proceeding based on standing "as of right," the agency has applied contemporaneous judicial standing concepts; LBP-07-3, 65 NRC 237 (2007)

in exceptional instances, the Commission may grant a petition for interlocutory review when a party demonstrates that a ruling threatens it with immediate and serious irreparable impact or affects the basic structure of the proceeding in a pervasive or unusual matter; CLI-07-2, 65 NRC 10 (2007)

in license transfer cases, the Commission determines on a case-by-case basis whether the proximity presumption should apply, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue, and specifically taking into account the nature of the proposed action and the significance of the radioactive source; CLI-07-19, 65 NRC 423 (2007)

interest in the promotion of economic use of energy falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 399 (2007)

"issues" in license transfer proceedings constitute "contentions" under 10 C.F.R. 2.309(f) and must therefore meet the standards for admissibility set forth in that regulation; CLI-07-18, 65 NRC 399 (2007)

issues raised in contentions must be both within the scope of the proceeding and material to the findings the NRC must make to support the action that is involved in the proceeding; LBP-07-3, 65 NRC 237 (2007)

it is appropriate for a reply to respond to the legal, logical, and factual arguments presented in the answers, so long as new issues are not raised; LBP-07-4, 65 NRC 281 (2007)

it is not sufficient to rely on the standing of one petitioner because Commission practice requires each party to separately establish standing; CLI-07-18, 65 NRC 399 (2007)

it is the petitioner's obligation to present factual information and/or expert opinion necessary to support its contention; LBP-07-3, 65 NRC 237 (2007)

local governmental bodies within whose boundaries a facility is located do not need to make any further demonstration of standing; CLI-07-18, 65 NRC 399 (2007)

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neither mere speculation nor bare or conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention; LBP-07-3, 65 NRC 237 (2007)

neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-07-18, 65 NRC 399 (2007)

not all organizations with governmental ties are entitled to participate in NRC proceedings as a local governmental body (county, municipality, or other subdivision); CLI-07-18, 65 NRC 399 (2007)

nothing precludes an individual from seeking to intervene both on his/her own behalf and as a representative of others; CLI-07-19, 65 NRC 423 (2007)

one does not acquire standing as a consequence of being a member of a legislative tribunal; LBP-07-5, 65 NRC 341 (2007)

organizations seeking to intervene in their own right must satisfy the same standing requirements as individuals seeking to intervene because an organization, like an individual, is considered a "person"; CLI-07-18, 65 NRC 399 (2007)

outside the context of petitions for interlocutory review, the Commission may take interlocutory review of questions or rulings that a licensing board either refers or certifies to the Commission; CLI-07-1, 65 NRC 1 (2007)

petitioner cannot satisfy NRC's standing requirement by offering a vague claim of 50-mile proximity in an initial petition and later using a petition for reconsideration to fill in gaps with more specific information that was available all along; CLI-07-21, 65 NRC 519 (2007)

petitioner must allege a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision; LBP-07-5, 65 NRC 341 (2007)

petitioner must read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, state the applicant's position and the petitioner's opposing view, and explain why it disagrees with the applicant; LBP-07-4, 65 NRC 281 (2007)

petitioner must set forth his or her interest in the proceeding, as well as the possible effect that any order or decision entered therein might have upon that interest; LBP-07-5, 65 NRC 341 (2007)

petitioners seeking reconsideration of a Commission order must demonstrate that the Commission has committed clear error, must do so by raising new arguments, and must not previously have been able to make those arguments; CLI-07-22, 65 NRC 525 (2005)

petitions for reconsideration are limited to 10 pages; CLI-07-22, 65 NRC 525 (2005)

providing any material or document as a basis for a contention, without setting forth an explanation of its significance, is inadequate to support the admission of the contention; LBP-07-3, 65 NRC 237 (2007)

proximity standing in a license transfer proceeding has been recognized at close distances where a petitioner frequently engages in substantial business and related activities in the vicinity of the facility, engages in normal, everyday activities in the vicinity, has regular and frequent contacts in an area near a licensed facility, or otherwise has visits of a length and nature showing an ongoing connection and presence; CLI-07-21, 65 NRC 519 (2007)

proximity-based standing has been denied where contact has been limited to mere occasional trips to areas located close to reactors; CLI-07-21, 65 NRC 519 (2007)

proximity-based standing in license transfer proceedings had been denied to petitioners within 5-10 miles, 12 miles, and 40 miles from licensed facilities; CLI-07-21, 65 NRC 519 (2007)

the Commission customarily does not entertain discretionary interlocutory appeals, due in large part to a general unwillingness to engage in piecemeal interference in ongoing licensing board proceedings; CLI-07-1, 65 NRC 1 (2007)

the Commission does not endorse deferring the consideration of proposed contentions because prompt consideration of contentions promotes the efficient and complete development of the record while conserving resources; CLI-07-20, 65 NRC 499 (2007)

the Commission has the authority to enter case-specific procedural orders to facilitate the efficient resolution of issues before a licensing board; LBP-07-3, 65 NRC 237 (2007)

the Commission is generally inclined to accommodate an abeyance request from DOJ as long as it provides at least some showing of potential detrimental effect on its parallel criminal case; CLI-07-6, 65 NRC 112 (2007)

the Commission will occasionally take review of an issue on its own motion when that issue is not otherwise before it on appeal; CLI-07-1, 65 NRC 1 (2007)



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- the contention rule is strict by design and does not permit the filing of a vague, unparticularized contention, unsupported by affidavit, expert, or documentary support; CLI-07-18, 65 NRC 399 (2007); LBP-07-5, 65 NRC 341 (2007)
- the current version of contention admissibility rules no longer incorporates provisions that permitted the supplementation of petitions and the filing of contentions after the original filing of petitions; LBP-07-4, 65 NRC 281 (2007)
- the interests that the representative organization seeks to protect must be germane to its own purpose; CLI-07-18, 65 NRC 399 (2007)
- the longest specific distance for which the Commission has granted proximity-based standing in a post-*Vogtle* license transfer case is 6 to 6-1/2 miles; CLI-07-21, 65 NRC 519 (2007)
- the member of a petitioning organization seeking representation must qualify for standing in his or her own right; CLI-07-18, 65 NRC 399 (2007)
- the question whether to hold an NRC enforcement proceeding in abeyance pending a related criminal prosecution is generally suitable for interlocutory Commission review because the abeyance issue cannot await the end of the proceeding; CLI-07-6, 65 NRC 112 (2007)
- the subject matter of the contention must impact the grant or denial of a pending license application; LBP-07-3, 65 NRC 237 (2007)
- threshold admissibility requirements for contentions should not be turned into a fortress to deny intervention; CLI-07-18, 65 NRC 399 (2007)
- to establish organizational standing, the organization must show that the interests of the organization will be harmed by the proposed licensing action; LBP-07-4, 65 NRC 281 (2007)
- to intervene as of right in any Commission licensing proceeding, a petitioner must demonstrate that its interest may be affected by the proceeding and specify the facts pertaining to that interest; CLI-07-18, 65 NRC 399 (2007)
- to intervene in an NRC proceeding, a petitioner must, in addition to demonstrating standing, submit at least one contention meeting specific pleading requirements; LBP-07-4, 65 NRC 281 (2007)
- to obtain discretionary interlocutory review, petitioner must demonstrate that the licensing board's ruling at issue either threatens the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated through a petition for review of the presiding officer's final decision, or .affects the basic structure of the proceeding in a pervasive or unusual manner; CLI-07-1, 65 NRC 1 (2007)
- to succeed, a petition for reconsideration must demonstrate a compelling circumstance, such as the existence of a clear and material error in a decision, which could not have been reasonably anticipated, which renders the decision invalid; CLI-07-21, 65 NRC 519 (2007)
- when an entity seeks to intervene on behalf of its members, that entity must show that it has an individual member who can fulfill all the necessary standing elements and who has authorized the organization to represent his or her interests; LBP-07-3, 65 NRC 237 (2007)
- when critical information has been submitted to the NRC under a claim of confidentiality and was not available to petitioners when framing their issues, it is appropriate to defer ruling on the admissibility of an issue until the petitioner has had an opportunity to review this information and submit a properly documented issue; CLI-07-18, 65 NRC 399 (2007)
- when deciding whether to grant standing to a petitioner, a board shall consider the nature of the petitioner's right under AEA to be made a party to the proceeding, the nature and extent of the petitioner's property, financial, or other interest in the proceeding, and the possible effect of any order that may be entered in the proceeding on the petitioner's interest; LBP-07-4, 65 NRC 281 (2007)
- when determining whether a petitioner has established the necessary "interest" under Commission rules, licensing boards are directed by Commission precedent to look to judicial concepts of standing for guidance; LBP-07-4, 65 NRC 281 (2007)
- where appropriate, the Commission will exercise its authority to instruct the board to certify novel license renewal issues; CLI-07-1, 65 NRC 1 (2007)
- without written authorization for representation, the Commission would have no concrete indication that, in fact, the member wishes to have the organization represent its interests in the proceeding; CLI-07-18, 65 NRC 399 (2007)

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### RULES OF PROCEDURE

the opportunity for cross-examination under Subpart L is equivalent to the opportunity for cross-examination under the Administrative Procedure Act; LBP-07-4, 65 NRC 281 (2007)

### SAFEGUARDS INFORMATION

Staff may withhold some facts underlying its findings and conclusions on terrorism-related risks; CLI-07-11, 65 NRC 148 (2007)

### SAFETY EVALUATION

requiring a full reassessment of safety issues that were thoroughly reviewed when the facility was first licensed and continue to be routinely monitored and assessed by ongoing agency oversight and agency-mandated licensee programs would be both unnecessary and wasteful at the license renewal stage; LBP-07-4, 65 NRC 281 (2007)

seismic siting factors are part of the safety determination a board must make in an early site permit proceeding; LBP-07-9, 65 NRC 539 (2007)

### SAFETY ISSUES

a board must determine whether an ESP application and the record of the proceeding contain sufficient information, and the review of the application by the NRC Staff has been adequate, to support a negative finding on the question of whether the issuance of an early site permit will be inimical to the common defense and security or to the health and safety of the public; LBP-07-6, 65 NRC 429 (2007); LBP-07-9, 65 NRC 539 (2007)

in the mandatory proceeding on an early site permit application, the board must review the sufficiency of the record and the sufficiency of the NRC Staff's review, and decide if they are adequate to support the Staff's proposed findings; LBP-07-9, 65 NRC 539 (2007)

NRC hearings on safety issues concern the adequacy of the license application, not the NRC Staff's work, but NRC hearings on NEPA issues focus entirely on the adequacy of the NRC Staff's work; CLI-07-17, 65 NRC 392 (2007)

site characterization issues are safety-related because, in determining the acceptability of a site, factors important to hydrological radionuclide transport must be obtained from onsite measurements; LBP-07-9, 65 NRC 539 (2007)

the board in an uncontested early site permit proceeding must decide whether, taking into consideration the site criteria contained in 10 C.F.R. Part 100, a reactor or reactors having the characteristics that fall within the parameters for the site can be constructed without undue risk to the health and safety of the public; LBP-07-9, 65 NRC 539 (2007)

the potential for tritium contamination of water is primarily a NEPA issue because it involves the environmental impacts of the proposed early site permit and possible mitigation measures, but also has a safety element because safety regulations require that exposure to radiation be as low as reasonably achievable; LBP-07-9, 65 NRC 539 (2007)

the presiding officer or licensing board has discretion to accelerate the merits hearing on safety issues, but not on environmental issues; CLI-07-17, 65 NRC 392 (2007)

threshold environmental legal and policy issues need not await issuance of the final environmental impact statement; CLI-07-17, 65 NRC 392 (2007)

### SAFETY REVIEW

the scope of the licensing board's review in an uncontested early site permit proceeding is described; LBP-07-1, 65 NRC 27 (2007)

### SCHEDULING

the Commission has the authority to enter into case-specific procedural orders to facilitate the efficient resolution of issues before the board; CLI-07-17, 65 NRC 392 (2007)

the licensing board is directed to revise its mandatory hearing schedule with a goal of issuing a final Commission decision on the pending application within 30 months from the date that the application was received; CLI-07-5, 65 NRC 109 (2007)

the presiding officer or licensing board has discretion to accelerate the merits hearing on safety issues, but not on environmental issues; CLI-07-17, 65 NRC 392 (2007)

to be granted, an alternate schedule for submission of a decommissioning plan must be necessary to the effective conduct of decommissioning operations; LBP-07-7, 65 NRC 507 (2007)

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within 45 days after the filing of answers and replies the presiding officer must issue a decision on each request for hearing/petition to intervene, absent an extension from the Commission; CLI-07-20, 65 NRC 499 (2007)

### SECURITY

terrorism contentions are directly related to security and are therefore, under NRC license renewal rules, unrelated to the detrimental effects of aging, and consequently are beyond the scope of, not material to, and inadmissible in, a license renewal proceeding; CLI-07-8, 65 NRC 124 (2007); CLI-07-9, 65 NRC 139 (2007)

the "design basis threat" rule describes general adversary characteristics that designated NRC licensees, including nuclear power plant licensees, are required to defend against with high assurance; CLI-07-8, 65 NRC 124 (2007)

### SEISMIC DESIGN

a nuclear power plant must be designed so that, if the safe shutdown earthquake occurs, certain structures, systems, and components will remain functional and within applicable stress, strain, and deformation limits; LBP-07-9, 65 NRC 539 (2007)

the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 365 (2007)

### SEISMIC RISK

seismic siting factors are part of the safety determination a board must make in an early site permit proceeding; LBP-07-9, 65 NRC 539 (2007)

### SEVERE ACCIDENT MITIGATION ANALYSIS

a license renewal applicant need not discuss severe accident mitigation alternatives for generic, or Category 1, issues; CLI-07-3, 65 NRC 13 (2007)

alternatives to mitigate severe accidents must be considered for all plants that have not previously considered such alternatives; LBP-07-4, 65 NRC 281 (2007)

an early site permit is conditioned to require that radioactive waste management systems, structures, and components for a future reactor must include features to preclude accidental releases of radionuclides into potential liquid pathways; CLI-07-14, 65 NRC 216 (2007)

completeness and clarity are of paramount importance in meeting the hydrology requirements; LBP-07-9, 65 NRC 539 (2007)

factors to be considered when evaluating a proposed site include population density and use characteristics, the nature and proximity of man-related hazards such as airports, and the physical characteristics of the site including seismology, meteorology, geology, and hydrology; LBP-07-9, 65 NRC 539 (2007)

for all issues designated as Category 1 the Commission has concluded that (generally) additional site-specific mitigation alternatives are unlikely to be beneficial; CLI-07-3, 65 NRC 13 (2007)

issues are safety-related because, in determining the acceptability of a site, factors important to hydrological radionuclide transport must be obtained from onsite measurements; LBP-07-9, 65 NRC 539 (2007)

### SITE CHARACTERIZATION PLANS

if a board finds that licensee's field sampling plan is not acceptable, it could deny licensee's alternate schedule for submission of a decommissioning plan; LBP-07-7, 65 NRC 507 (2007)

### SITE RESTORATION

if a combined operating license or construction permit is never issued or ultimately denied, the early site permit holder would be required to redress even limited site preparation activities and restore the site; LBP-07-9, 65 NRC 539 (2007)

### SITE SUITABILITY

the main differences between an early partial decision and an early site permit are that the early partial decision lasts only 5 years and resolves only those site suitability issues that the applicant specifically asks to resolve, whereas the early site permit lasts for 20 years and once it is issued it covers the site; LBP-07-9, 65 NRC 539 (2007)

### SOURCE TERM

the definition, origin, and derivation of source terms are discussed; LBP-07-9, 65 NRC 539 (2007)

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### SPENT FUEL STORAGE

environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be not significant; CLI-07-3, 65 NRC 13 (2007)

impacts of design basis accidents at spent fuel storage are characterized as small, and so, no site-specific NEPA review is required; CLI-07-8, 65 NRC 124 (2007)

### SPENT FUEL STORAGE CASKS

the stability of ISFSI concrete pads holding dry spent fuel storage casks during earthquakes is addressed; DD-07-2, 65 NRC 365 (2007)

### STANDARD OF REVIEW

in an uncontested early site permit proceeding, the licensing board will inquire whether the NRC Staff performed an adequate review and made findings with reasonable support in logic and fact; LBP-07-1, 65 NRC 27 (2007); LBP-07-6, 65 NRC 429 (2007); LBP-07-9, 65 NRC 539 (2007)

in mandatory hearings on uncontested license applications, the board must narrow its inquiry to those topics or sections in Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-1, 65 NRC 27 (2007)

mandatory hearings do not involve a *de novo* review of the NRC Staff's findings, but rather whether the safety and environmental record is sufficient to support license issuance; CLI-07-5, 65 NRC 109 (2007)

on NEPA baseline issues in the mandatory hearing on an early site permit application, the board must reach its own independent determination; LBP-07-1, 65 NRC 27 (2007); LBP-07-9, 65 NRC 539 (2007)

on uncontested issues in an early site permit proceeding, the board must independently evaluate the record and the adequacy of the Staff's review and then to decide six fundamental issues that are specified by the law and regulations; LBP-07-9, 65 NRC 539 (2007)

regarding safety issues, boards must determine whether the application and the record of the proceeding contain sufficient information and the review of the application by the NRC Staff has been adequate to support findings pursuant to 10 C.F.R. 30.33, 40.32, and 70.23; LBP-07-6, 65 NRC 429 (2007)

Staff must evaluate alternatives to determine whether there are any obviously superior options to the proposed action; LBP-07-6, 65 NRC 429 (2007)

the board's role in mandatory hearings on early site permit applications is analogous to that of an appellate court applying the substantial evidence test; LBP-07-9, 65 NRC 539 (2007)

the licensing board's responsibilities regarding its review of environmental issues in an uncontested mandatory hearing on a uranium enrichment facility application are described; LBP-07-6, 65 NRC 429 (2007)

the scope of the licensing board's environmental review in an uncontested early site permit proceeding is discussed; LBP-07-1, 65 NRC 27 (2007)

the scope of the licensing board's safety review in an uncontested early site permit proceeding is described; LBP-07-1, 65 NRC 27 (2007)

when a proceeding involving an application for a construction permit is uncontested the Board will not conduct a *de novo* review, but rather will conduct a simple sufficiency review of the uncontested issues; LBP-07-1, 65 NRC 27 (2007); LBP-07-6, 65 NRC 429 (2007)

while generally accepting the technical and factual findings of the Staff, the board must independently decide whether NEPA has been complied with, the final balance among conflicting factors, and whether the ESP should be issued, denied, or appropriately conditioned; LBP-07-9, 65 NRC 539 (2007)

### STANDING TO INTERVENE

a declaration in support of petitioner's standing based on geographic proximity must include a specific statement of distance from the licensed facility; CLI-07-18, 65 NRC 399 (2007)

an individual may satisfy the standing requirements by demonstrating that his or her residence is within the geographical area that might be affected by an accidental release of fission products, and in proceedings involving nuclear power plants this area has been defined as being within a 50-mile radius of such a plant; CLI-07-19, 65 NRC 423 (2007); LBP-07-3, 65 NRC 237 (2007); LBP-07-4, 65 NRC 281 (2007)

an organization's promotion of the public interest, environmental protection, and consumer protection are broad interests shared with many others and too general to constitute a protected interest under the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 399 (2007)

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boards shall consider the nature of the petitioner's right under AEA to be made a party to the proceeding, the nature and extent of the petitioner's property, financial, or other interest in the proceeding, and the possible effect of any order that may be entered in the proceeding on the petitioner's interest; LBP-07-4, 65 NRC 281 (2007)

descriptions of activities as being "near," in "close proximity," or "in the vicinity" of the facility in question are insufficient to establish standing; CLI-07-18, 65 NRC 399 (2007)

in a license transfer case, a petitioner cannot successfully claim injury based on the financial qualifications and assurances of the transferor; CLI-07-22, 65 NRC 525 (2005)

in assessing a petition to determine whether the elements for standing are met, boards are to construe the petition in favor of the petitioner; LBP-07-3, 65 NRC 237 (2007)

in determining whether an individual or organization should be granted party status in a proceeding based on standing "as of right," the agency has applied contemporaneous judicial standing concepts; LBP-07-3, 65 NRC 237 (2007); LBP-07-4, 65 NRC 281 (2007)

in license transfer cases, the Commission determines on a case-by-case basis whether the proximity presumption should apply, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue, and specifically taking into account the nature of the proposed action and the significance of the radioactive source; CLI-07-19, 65 NRC 423 (2007)

interest in the promotion of economic use of energy falls outside the zone of interests protected by either the Atomic Energy Act or the National Environmental Policy Act; CLI-07-18, 65 NRC 399 (2007)

intervenor may not act as private attorneys-general and raise issues that are of concern to them but do not affect them directly; CLI-07-18, 65 NRC 399 (2007)

it is not sufficient to rely on the standing of one petitioner because Commission practice requires each party to separately establish standing; CLI-07-18, 65 NRC 399 (2007)

local governmental bodies within whose boundaries a facility is located do not need to make any further demonstration of standing; CLI-07-18, 65 NRC 399 (2007)

occasional contact with an affected area is not sufficient to establish standing; LBP-07-4, 65 NRC 281 (2007)

one does not acquire standing as a consequence of being a member of a legislative tribunal; LBP-07-5, 65 NRC 341 (2007)

petitioner cannot satisfy NRC's standing requirement by offering a vague claim of 50-mile proximity in an initial petition and later using a petition for reconsideration to fill in gaps with more specific information that was available all along; CLI-07-21, 65 NRC 519 (2007)

petitioner must allege a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision; LBP-07-3, 65 NRC 237 (2007); LBP-07-4, 65 NRC 281 (2007); LBP-07-5, 65 NRC 341 (2007)

petitioner must set forth his or her interest in the proceeding, as well as the possible effect that any order or decision entered therein might have upon that interest; LBP-07-5, 65 NRC 341 (2007)

proximity standing in a license transfer proceeding has been recognized at close distances where a petitioner frequently engages in substantial business and related activities in the vicinity of the facility, engages in normal, everyday activities in the vicinity, has regular and frequent contacts in an area near a licensed facility, or otherwise has visits of a length and nature showing an ongoing connection and presence; CLI-07-21, 65 NRC 519 (2007)

proximity-based standing has been denied where contact has been limited to mere occasional trips to areas located close to reactors; CLI-07-21, 65 NRC 519 (2007)

proximity-based standing in license transfer proceedings had been denied to petitioners within 5-10 miles, 12 miles, and 40 miles from licensed facilities; CLI-07-21, 65 NRC 519 (2007)

significant contacts with an affected area can be sufficient to establish standing, even when full-time residence within the 50-mile zone is not shown; LBP-07-4, 65 NRC 281 (2007)

the longest specific distance for which the Commission has granted proximity-based standing in a post-*Vogtle* license transfer case is 6 to 6-1/2 miles; CLI-07-21, 65 NRC 519 (2007)

the requisite injury may be either actual or threatened, but must arguably lie within the zone of interests protected by the statutes governing the proceeding; LBP-07-4, 65 NRC 281 (2007)

to intervene as of right in any Commission licensing proceeding, a petitioner must demonstrate that its interest may be affected by the proceeding and specify the facts pertaining to that interest; CLI-07-18, 65 NRC 399 (2007)

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### STANDING TO INTERVENE, ORGANIZATIONAL

- a "same zip code" test for standing is inappropriate, given that the sizes of zip-code areas vary greatly throughout the country; CLI-07-22, 65 NRC 525 (2005)
- an advisory body that lacks executive or legislative responsibilities is so far removed from having the representative authority to speak and act for the public that it does not qualify as a governmental entity; CLI-07-18, 65 NRC 399 (2007)
- for an organization to qualify for the proximity presumption, a bare assertion that a member lives within 50 miles is not sufficient; LBP-07-4, 65 NRC 281 (2007)
- general policy interests alone are not sufficient to establish organizational standing, but rather, a petitioner must demonstrate a discrete institutional injury to the organization itself; LBP-07-4, 65 NRC 281 (2007)
- neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-07-18, 65 NRC 399 (2007)
- not all organizations with governmental ties are entitled to participate in NRC proceedings as a local governmental body (county, municipality, or other subdivision); CLI-07-18, 65 NRC 399 (2007)
- organizations seeking to intervene in their own right must satisfy the same standing requirements as individuals seeking to intervene because an organization, like an individual, is considered a "person"; CLI-07-18, 65 NRC 399 (2007)
- the interests that the representative organization seeks to protect must be germane to its own purpose; CLI-07-18, 65 NRC 399 (2007)
- the organization must show that the interests of the organization will be harmed by the proposed licensing action; LBP-07-4, 65 NRC 281 (2007)
- to establish representational standing, an organization must show that at least one of its members may be affected by the licensing action and, accordingly, would have standing to sue in his or her own right, must identify that member by name and address, and must show that the organization is authorized to request a hearing on behalf of that member; LBP-07-3, 65 NRC 237 (2007); LBP-07-4, 65 NRC 281 (2007)

### STANDING TO INTERVENE, REPRESENTATIONAL

- an individual petitioner should not request intervention in his own right and simultaneously authorize other petitioners to represent his or her interests; CLI-07-19, 65 NRC 423 (2007)
- an organization must show that at least one of its members may be affected by the licensing action and, accordingly, would have standing to sue in his or her own right, must identify that member by name and address, and must show that the organization is authorized to request a hearing on behalf of that member; CLI-07-18, 65 NRC 399 (2007); LBP-07-4, 65 NRC 281 (2007)
- assertions that a member lives within the service area of the utility that operates a licensed facility or within the same county as the facility is insufficiently specific to justify a finding of standing; CLI-07-18, 65 NRC 399 (2007)
- if an organization does not identify the members it purportedly represents, the Commission cannot determine whether the organization actually does represent members who consider that they will be affected by the licensing action or is simply seeking the vindication of its own value preference; CLI-07-18, 65 NRC 399 (2007)
- neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-07-18, 65 NRC 399 (2007)
- nothing precludes an individual from seeking to intervene both on his/her own behalf and as a representative of others; CLI-07-19, 65 NRC 423 (2007)
- the interests that the representative organization seeks to protect must be germane to its own purpose; CLI-07-18, 65 NRC 399 (2007)
- the member of a petitioning organization seeking representation must qualify for standing in his or her own right; CLI-07-18, 65 NRC 399 (2007)
- without written authorization for representation, the Commission would have no concrete indication that, in fact, the member wishes to have the organization represent its interests in the proceeding; CLI-07-18, 65 NRC 399 (2007)

### STATE REGULATORY REQUIREMENTS

- for purposes of NPDES permits, effluent is defined as liquid waste that is discharged into a river, lake, or other body of water, and it includes heat; CLI-07-16, 65 NRC 371 (2007)

## SUBJECT INDEX

### STATUTES

any contention that amounts to an attack on applicable statutory requirements must be rejected by a licensing board as outside the scope of the proceeding; LBP-07-4, 65 NRC 281 (2007)

### STAY

only a party to a proceeding, or an interested governmental entity participating under section 2.315, may file a request to stay proceedings pending a rulemaking; CLI-07-13, 65 NRC 211 (2007)

### STEAM GENERATORS

applicant normally is required to perform a load rejection test before an extended power uprate can be granted; LBP-07-2, 65 NRC 153 (2007)

generator load rejection transients occasionally occur and are classified as anticipated operational occurrences that nuclear power stations must be designed and built to withstand; LBP-07-2, 65 NRC 153 (2007)

### SUBPART L PROCEEDINGS

the opportunity for cross-examination under Subpart L is equivalent to the opportunity for cross-examination under the Administrative Procedure Act; LBP-07-4, 65 NRC 281 (2007)

the Staff elects whether or not to be a party to some or all contentions; CLI-07-20, 65 NRC 499 (2007)

### SUMMARY DISPOSITION

weighing the affidavits of competing experts is not appropriate at the summary disposition stage; LBP-07-2, 65 NRC 153 (2007)

### SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

if a rule is suspended for analysis, each SEIS would reflect the corrected analysis until such time as the rule is amended; CLI-07-3, 65 NRC 13 (2007)

pending resolution of a rulemaking petition, NRC Staff may, where appropriate, seek the Commission's permission to suspend the generic determination of a Category 1 issue and include a new analysis in the plant-specific environmental impact statements; CLI-07-3, 65 NRC 13 (2007)

Staff must address adverse environmental effects that cannot be avoided; LBP-07-4, 65 NRC 281 (2007)

### TERRORISM

an appeals court ruling does not constitute new information on which a party can base a new contention; CLI-07-9, 65 NRC 139 (2007)

Staff's generic environmental impact statement for license renewal has already performed a discretionary analysis of terrorist acts in connection with license renewal and concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events; CLI-07-8, 65 NRC 124 (2007)

terrorism contentions are directly related to security and are therefore, under NRC license renewal rules, unrelated to the detrimental effects of aging, and consequently are beyond the scope of, not material to, and inadmissible in, a license renewal proceeding; CLI-07-8, 65 NRC 124 (2007); CLI-07-9, 65 NRC 139 (2007)

the level of risk of a terrorist attack depends upon political, social, and economic factors external to the NRC licensing process, and thus it is not sensible to hold an NRC licensing decision, rather than terrorists themselves, as the proximate cause of an attack on an NRC-licensed facility; CLI-07-8, 65 NRC 124 (2007)

there is no NEPA requirement that NRC consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities; CLI-07-8, 65 NRC 124 (2007); CLI-07-10, 65 NRC 144 (2007); CLI-07-11, 65 NRC 148 (2007)

there is no proximate-cause link between an NRC licensing action, such as renewing an operating license, and any altered risk of terrorist attack; CLI-07-8, 65 NRC 124 (2007)

### TESTING

applicant normally is required to perform two large-transient tests before an extended power uprate can be granted; LBP-07-2, 65 NRC 153 (2007)

each nuclear power plant must implement a program that includes all testing required to demonstrate that the structures, systems, and components will perform satisfactorily in service; LBP-07-2, 65 NRC 153 (2007)

the final safety analysis report must include the applicant's plans for preoperational testing and initial operations; LBP-07-2, 65 NRC 153 (2007)

## SUBJECT INDEX

### TRANSIENTS

an MSIV transient is classified as an anticipated operational occurrence, and nuclear power stations must be designed and built to withstand them; LBP-07-2, 65 NRC 153 (2007)

generator load rejection transients occasionally occur and are classified as anticipated operational occurrences that nuclear power stations must be designed and built to withstand; LBP-07-2, 65 NRC 153 (2007)

transients can be, and often are, anticipated operational occurrences which are conditions of normal operation; LBP-07-2, 65 NRC 153 (2007)

when an MSIV transient occurs, the reactor operator is required to analyze what happened and how the reactor systems responded and performed, and to report to the NRC; LBP-07-2, 65 NRC 153 (2007)

### TRITIUM

NRC includes the EPA drinking water standard in the technical specifications that a licensee must meet; LBP-07-9, 65 NRC 539 (2007)

the potential for contamination of water is primarily a NEPA issue because it involves the environmental impacts of the proposed early site permit and possible mitigation measures, but also has a safety element because safety regulations require that exposure to radiation be as low as reasonably achievable; LBP-07-9, 65 NRC 539 (2007)

### UNCONTESTED LICENSE APPLICATIONS

in an early site permit proceeding, the board must narrow its inquiry to those topics or sections in NRC Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-1, 65 NRC 27 (2007); LBP-07-6, 65 NRC 429 (2007)

regarding safety issues, boards must determine whether the application and the record of the proceeding contain sufficient information and the review of the application by the NRC Staff has been adequate to support findings pursuant to 10 C.F.R. 30.33, 40.32, and 70.23; LBP-07-6, 65 NRC 429 (2007)

the scope of the licensing board's environmental review in an early site permit proceeding is discussed; LBP-07-1, 65 NRC 27 (2007)

the scope of the licensing board's safety review in an uncontested early site permit proceeding is described; LBP-07-1, 65 NRC 27 (2007)

when a proceeding involving an application for a construction permit is uncontested the Board will not conduct a *de novo* review, but rather will conduct a simple sufficiency review of the uncontested issues; LBP-07-1, 65 NRC 27 (2007); LBP-07-6, 65 NRC 429 (2007)

### URANIUM ENRICHMENT FACILITIES

applicant must submit a decommissioning funding plan for its proposed facility; LBP-07-6, 65 NRC 429 (2007)

containers are exempted from labeling requirements if they are attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the established limits; LBP-07-6, 65 NRC 429 (2007)

DOE will indemnify a licensee against claims arising from nuclear incidents to the extent that licensee cannot obtain commercial insurance at reasonable rates; LBP-07-6, 65 NRC 429 (2007)

for license applications for uranium enrichment facilities, NRC shall conduct a single adjudicatory hearing on the record with regard to the licensing of the construction and operation of the facility; LBP-07-6, 65 NRC 429 (2007)

proof of adequate liability insurance must be filed with the NRC before a license for the operation of a facility may be issued; LBP-07-6, 65 NRC 429 (2007)

Staff must evaluate alternatives to determine whether there are any obviously superior options to the proposed action; LBP-07-6, 65 NRC 429 (2007)

the environmental costs of the facility must be compared to the Staff's assessment of the benefits derived from the additional domestic supply of enriched uranium and the presence of upgraded enrichment technology in the United States; LBP-07-6, 65 NRC 429 (2007)

the occupational radiation protection measures that the radiation protection program must address are discussed; LBP-07-6, 65 NRC 429 (2007)

use of conspicuously posted signs, in conjunction with the applicant's radiation work permit program, is an acceptable alternative to section 20.1601(a) requirements; LBP-07-6, 65 NRC 429 (2007)



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### URANIUM ENRICHMENT FACILITY PROCEEDINGS

- regarding safety issues, boards must determine whether the application and the record of the proceeding contain sufficient information and the review of the application by the NRC Staff has been adequate to support findings pursuant to 10 C.F.R. 30.33, 40.32, and 70.23; LBP-07-6, 65 NRC 429 (2007)
- the Commission will endeavor to identify efficiencies, and provide pertinent resources, to further reduce the time the agency needs to complete reviews and reach decisions in these proceedings; CLI-07-17, 65 NRC 392 (2007)
- the licensing board must narrow its inquiry to those topics or sections in Staff documents that it deems most important and should concentrate on portions of the documents that do not on their face adequately explain the logic, underlying facts, and applicable regulations and guidance; LBP-07-6, 65 NRC 429 (2007)
- the licensing board's standard of review on environmental issues in a mandatory uncontested proceeding is discussed; LBP-07-6, 65 NRC 429 (2007)
- when a proceeding involving an application for a construction permit is uncontested, the board will not conduct a *de novo* review, but rather will conduct a simple sufficiency review of the uncontested issues; LBP-07-6, 65 NRC 429 (2007)

### WAIVER OF RULE

- a petitioner may, within the adjudicatory context, submit a request for waiver of a rule; LBP-07-4, 65 NRC 281 (2007)
- collateral attacks on NRC regulations are prohibited unless the agency grants a waiver of the prohibition; CLI-07-16, 65 NRC 371 (2007)
- new and significant information about a Category 1 issue is not a proper subject for a contention, absent a waiver of section 51.53(c)(3)(i); LBP-07-4, 65 NRC 281 (2007)
- one way to challenge a generic finding, or Category 1 issue, in a license renewal proceeding is to apply for a waiver when special circumstances are such that the application of the rule or regulation would not serve the purposes for which the rule or regulation was adopted; CLI-07-3, 65 NRC 13 (2007)

### WATER POLLUTION

- effects of heat shock on the protection and propagation of fish and shellfish is a Category 2 environmental issue and must be addressed on a case-by-case basis in a license renewal application; CLI-07-16, 65 NRC 371 (2007)
- heat shock falls within the scope of the Clean Water Act; CLI-07-16, 65 NRC 371 (2007)
- NPDES permits may address thermal discharges into bodies of water; CLI-07-16, 65 NRC 371 (2007)
- NRC is prohibited from reviewing any effluent limitation or other requirement established pursuant to the Clean Water Act; CLI-07-16, 65 NRC 371 (2007)
- the potential for tritium contamination of water is primarily a NEPA issue because it involves the environmental impacts of the proposed early site permit and possible mitigation measures, but also has a safety element because safety regulations require that exposure to radiation be as low as reasonably achievable; LBP-07-9, 65 NRC 539 (2007)

### WITNESSES, EXPERT

- it is the petitioner's obligation to present factual information and/or expert opinion necessary to support its contention; LBP-07-3, 65 NRC 237 (2007)
- neither mere speculation nor bare or conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention; LBP-07-3, 65 NRC 237 (2007)
- weighing the affidavits of competing experts is not appropriate at the summary disposition stage; LBP-07-2, 65 NRC 153 (2007)

### WORK ENVIRONMENT

- petitioner's request that NRC scrutinize the steps taken to improve the handling of safety concerns brought to management by workers is granted in part and denied in part; DD-07-1, 65 NRC 195 (2007)

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AMERICAN CENTRIFUGE PLANT; Docket No. 70-7004-ML  
MATERIALS LICENSE; MEMORANDUM AND ORDER; Docket No. 70-7004-ML; CLI-07-5, 65 NRC 109 (2007)  
MATERIALS LICENSE; April 13, 2007; INITIAL DECISION (Authorizing the Issuance of the American Centrifuge Plant License); LBP-07-6, 65 NRC 429 (2007)

BIG ROCK POINT INDEPENDENT SPENT FUEL STORAGE INSTALLATION; Docket Nos. 50-155-LT, 72-043-LT  
LICENSE TRANSFER; April 26, 2007; MEMORANDUM AND ORDER; CLI-07-19, 65 NRC 423 (2007)  
LICENSE TRANSFER; June 28, 2007; MEMORANDUM AND ORDER; CLI-07-21, 65 NRC 519 (2007)

DIABLO CANYON POWER PLANT INDEPENDENT SPENT FUEL STORAGE INSTALLATION; Docket No. 72-26-ISFSI  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION; February 26, 2007; MEMORANDUM AND ORDER; CLI-07-11, 65 NRC 148 (2007)

OYSTER CREEK NUCLEAR GENERATING STATION; Docket No. 50-0219-LR  
LICENSE RENEWAL; February 26, 2007; MEMORANDUM AND ORDER; CLI-07-8, 65 NRC 124 (2007)

PALISADES NUCLEAR PLANT; Docket No. 50-255  
LICENSE RENEWAL; February 26, 2007; MEMORANDUM AND ORDER; CLI-07-9, 65 NRC 139 (2007)  
LICENSE TRANSFER; April 26, 2007; MEMORANDUM AND ORDER; CLI-07-18, 65 NRC 399 (2007)  
LICENSE TRANSFER; June 28, 2007; MEMORANDUM AND ORDER; CLI-07-22, 65 NRC 525 (2007)

PALISADES NUCLEAR PLANT; Docket Nos. 50-255, 72-7  
REQUEST FOR ACTION; March 20, 2007; DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206; DD-07-2, 65 NRC 365 (2007)

PILGRIM NUCLEAR POWER STATION; Docket No. 50-293-LR  
LICENSE RENEWAL; January 11, 2007; MEMORANDUM AND ORDER; CLI-07-2, 65 NRC 10 (2007)  
LICENSE RENEWAL; January 22, 2007; MEMORANDUM AND ORDER; CLI-07-3, 65 NRC 13 (2007)  
LICENSE RENEWAL; March 15, 2007; MEMORANDUM AND ORDER; CLI-07-13, 65 NRC 211 (2007)

SHEARON HARRIS NUCLEAR POWER PLANT, Unit 1; Docket No. 50-400  
REQUEST FOR ACTION; June 13, 2007; DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206; DD-07-3, 65 NRC 643 (2007)

SOUTH TEXAS PROJECT, Units 1 and 2; Docket Nos. 50-498, 50-499  
REQUEST FOR ACTION; February 24, 2007; DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206; DD-07-1, 65 NRC 195 (2007)

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SUSQUEHANNA STEAM ELECTRIC STATION, Units 1 and 2; Docket Nos. 50-387-LR, 50-388-LR  
LICENSE RENEWAL; March 22, 2007; MEMORANDUM AND ORDER (Ruling on Standing and  
Contentions of Petitioner Eric Joseph Epstein); LBP-07-4, 65 NRC 281 (2007)

VERMONT YANKEE NUCLEAR POWER STATION; Docket No. 50-271-LR  
LICENSE RENEWAL; January 11, 2007; MEMORANDUM AND ORDER; CLI-07-1, 65 NRC 1 (2007)  
LICENSE RENEWAL; January 22, 2007; MEMORANDUM AND ORDER; CLI-07-3, 65 NRC 13  
(2007)  
LICENSE RENEWAL; March 15, 2007; MEMORANDUM AND ORDER; CLI-07-13, 65 NRC 211  
(2007)  
LICENSE RENEWAL; April 11, 2007; MEMORANDUM AND ORDER; CLI-07-16, 65 NRC 371  
(2007)  
OPERATING LICENSE AMENDMENT; February 26, 2007; INITIAL DECISION (Ruling on NEC  
Contention 3); LBP-07-2, 65 NRC 153 (2007)

WALTZ MILL FACILITY; Docket No. 70-00698  
MATERIALS LICENSE; March 29, 2007; MEMORANDUM AND ORDER; CLI-07-15, 65 NRC 221  
(2007)