UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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COMMISSIONERS

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Richard A. Meserve, Chairman
Greta Joy Dicus
Nils J. Diaz
Edward McGaffigan, Jr.
Jeffrey S. Merrifield

In the Matter of	)	
	)	
CAROLINA POWER & LIGHT CO.	)	Docket No. 50-400-LA
	)	
(Shearon Harris Nuclear Power Plant)	)	
	)	

CLI-01-11

MEMORANDUM AND ORDER

The Board of Commissioners of Orange County, North Carolina ("Orange County"), seeks Commission review of three Licensing Board decisions (LBP-00-12, LBP-00-19, and LBP-01-09) that, cumulatively, rejected Orange County's challenges to a license amendment to expand spent fuel storage capacity at the Shearon Harris nuclear power reactor in North Carolina. Orange County also seeks a stay of the final Board decision (LBP-01-09) approving the amendment. We deny the petition for review and the request for a stay.

I. BACKGROUND

This proceeding began in December, 1998, when Carolina Power & Light Company ("CP&L") applied for a license amendment to increase the spent fuel storage capacity at its Shearon Harris plant. The Shearon Harris fuel handling building was originally designed and constructed with four separate storage pools to support four proposed nuclear units. Eventually, CP&L canceled three of the four Shearon Harris units, but in the meantime it had constructed all four of the storage pools. Only pools A and B, with a combined capacity of 1,128 PWR fuel assemblies and 2,541 BWR assemblies, are currently in service. In the

license amendment at issue here, CP&L proposes to add fuel storage rack modules to spent fuel pools C and D and to place pool C in service. To activate pools C and D, CP&L must complete construction of the cooling system for the pools.

The Board granted Orange County intervenor status to challenge the application and admitted two of Orange County's technical contentions. See LBP-99-25, 50 NRC 25 (1999). One admitted contention dealt with criticality control measures proposed by CP&L (enrichment, burnup, and soluble boron), and the other with quality assurance steps taken by CP&L regarding the piping that had been laid up after abandonment of construction of pools C and D. See id. As permitted by our rules, CP&L elected to utilize the so-called "hybrid hearing procedures" set up by 10 C.F.R. Part 2, Subpart K. See 10 C.F.R. § 2.1109. Under the Subpart K process (10 C.F.R. §§ 2.1111-1115), the Board permitted a period for discovery, obtained the parties' written evidentiary submissions, heard oral argument, and ultimately rejected Orange County's two technical contentions on the merits. See LBP-00-12, 51 NRC 247, 282-83 (2000).

The Board found Orange County's criticality concerns at odds with "dispositive" regulatory history and practice, and with a recent NRC rule, 10 C.F.R. § 50.68, "which seems to contemplate the use of enrichment, burnup, and soluble boron as criticality control measures." 51 NRC at 260. As for Orange County's quality assurance-piping concerns, the Board found that CP&L and NRC staff witnesses "with expertise in the fields of corrosion, welding, and ASME Code requirements attest ... that the procedures that were used to substitute for construction records and examination during layup are adequate to assure a level of safety as required by the regulations." Id., at 278. The Board stressed that "even [Orange County's] witness" advocated "just what has been done." Id. The Board concluded that Orange County had presented "no genuine and substantial dispute of fact or law that can

only be resolved with sufficient accuracy by the introduction of evidence in an evidentiary hearing." Id., at 282-83.

The Board subsequently admitted one of Orange County's environmental contentions (EC-6). See LBP-00-19, 52 NRC 85 (2000). Contention EC-6 posed the question whether a seven-step accident sequence, culminating in initiation of an exothermic oxidation reaction in spent fuel pools C and D, has "a probability sufficient to provide the beyond-remote-and-speculative 'trigger' that is needed to compel preparation of an EIS [environmental impact statement] relative to [the] proposed licensing action." Id. at 95. The seven-step sequence is as follows: (1) a degraded core accident; (2) containment failure or bypass; (3) loss of all spent fuel cooling and makeup systems; (4) extreme radiation doses precluding personnel access; (5) inability to restart any pool cooling or makeup systems due to extreme radiation doses; (6) loss of most or all pool water through evaporation; and (7) initiation of an exothermic oxidation reaction in pools C and D.

Again, pursuant to Subpart K, the Board allowed discovery, obtained written submissions from the parties, and heard oral argument.[1] On March 1, 2001, the Board decided

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[1] On December 21, 2000, after the Subpart K oral argument on Contention EC-6 but before issuance of the Board's merits ruling, the NRC staff issued the license amendment. The NRC staff made the license amendment immediately effective based on the staff's final determination that the amendment involved no significant hazards consideration ("NSHC"). See 10 C.F.R. §§ 50.58(b)(5), 50.92. On December 22, Orange County petitioned for Commission review of the NSHC finding and requested a suspension and stay of the issuance of the license amendment. The Commission summarily rejected the petition, which is not permitted by our regulations. See CLI-01-07, 53 NRC 113, 118 (2001). Nonetheless, citing its "discretionary powers," the Commission sought additional information from the NRC staff to determine whether "the Staff's NSHC determination requires further action by the Commission." Id., at 119. Further, "[t]o preserve the status quo," the Commission directed CP&L to store no spent fuel under the license amendment, pending a further order of the Commission or a Licensing Board decision approving the amendment, whichever came sooner. See id., at 119. The subsequent Board decision approving the Shearon Harris license amendment, which we decline to review today, renders the NSHC question inconsequential for this adjudication, and thus we do not address it further.

Contention EC-6 on the merits. The Board ruled that: (1) the NRC staff had met its burden to demonstrate that the accident scenario postulated by Orange County is "remote and speculative," and thus does not warrant preparation of an EIS; and (2) Orange County had failed to show a "genuine and substantial dispute of fact or law that can only be resolved with sufficient accuracy" at a further evidentiary hearing. See LBP-01-09, 53 NRC __, slip op. at 41 (2001). After evaluating the parties' expert submissions and probability assessments, the Board found the accident scenario's probability to lie, "conservatively," in the range of "2.0E-07 per reactor year (2 occurrences in 10 million reactor years) or less," a probability estimate the Board found to be "within the category of remote and speculative matters." Id., slip op. at 35, 37. The Board accordingly authorized the immediate grant of CP&L's license amendment, and dismissed the proceeding. See id., slip op. at 42.

On March 16, 2001, Orange County petitioned for review of LBP-00-12, LBP-00-19, and LBP-01-09 and requested an emergency stay of LBP-01-09's authorization of the license grant.

II. DISCUSSION

Orange County alleges that the Board's decisions meet the Commission's standard for taking discretionary review because "they raise substantial questions with respect to their reliance on legal errors and clear factual errors. They also raise substantial and important questions of law, discretion and policy."[2] We interpret Orange County's Petition as seeking review on the grounds that "[a] finding of material fact is clearly erroneous" under 10 C.F.R. § 2.786(b)(4)(i); "[a] necessary legal conclusion...is a departure from or contrary to established

[2]See "Orange County's Petition for Review of LBP-00-12, LBP-00-19, and LBP-01-09," at 7, Mar. 16, 2001 ("Orange County's Petition").

law" under 10 C.F.R. § 2.786(b)(4)(ii); and/or "[a] substantial and important question of law, policy or discretion has been raised" under 10 C.F.R. § 2.786(b)(4)(iii).[3]

We disagree with Orange County's view of the case. As we see the record, the Board fully considered Orange County's claims on the basis of extensive submissions, including Orange County's, and resolved all issues reasonably. The Board's decisions for the most part rest on its own carefully-rendered fact findings, an area where we repeatedly have declined to second guess plausible Board decisions. See, e.g., Hydro Resources, Inc., CLI-01-04, 53 NRC 31, 45 (2001); Louisiana Energy Services, L.P. (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 93 (1998); Kenneth G. Pierce, CLI-95-6, 41 NRC 381, 382 (1995).

On a petition for review, Orange County must adequately call the Commission's attention to claimed errors in the Board's approach. Here, Orange County has submitted a complex set of pleadings that includes numerous detailed footnotes, attachments, and incorporations by reference. See Section F of this Order, infra. We deem waived any arguments not raised before the Board or not clearly articulated in the petition for review. See Hydro Resources, Inc., CLI-01-04, 53 NRC at 46; Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999); Curators of the University of Missouri, CLI-95-1, 41 NRC 71, 132 n. 81 (1995). Below, we discuss what we take to be Orange County's principal grievances, and explain why, in our judgment, they do not justify plenary Commission appellate review.[4]

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[3]Section 2.786 applies to Subpart K by virtue of 10 C.F.R. § 2.1117, which makes Subpart G rules applicable "except where inconsistent" with Subpart K. Subpart K has no rule of its own for petitions for review.

[4]Safety questions not properly raised in an adjudication may nonetheless be suitable for NRC consideration under its public petitioning process, 10 C.F.R. § 2.206. See Power Authority of the State of New York (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 311 (2000); International Uranium (USA) Corp., CLI-98-23, 48 NRC 259, 265-66 (1998).

A. Resolving Fact Questions In Subpart K Proceedings.

We turn first to a preliminary matter that pervades Orange County's Petition. The Petition depends largely on the proposition that the County met its burden to justify moving forward from a Subpart K abbreviated hearing -- i.e., the submission of written materials plus oral argument -- to a full trial-type evidentiary hearing. According to Orange County, a factual disagreement between its expert and those of CP&L and the NRC staff is enough to trigger a full evidentiary hearing. We think that Orange County's position oversimplifies our Subpart K process -- which empowers a licensing board to *resolve* fact questions, when it can do so accurately, at the abbreviated hearing stage.

Subpart K establishes a two-part test to determine whether a full evidentiary hearing is warranted: (1) there must be a genuine and substantial dispute of fact "which can only be resolved with sufficient accuracy" by a further adjudicatory hearing; and (2) the Commission's decision "is likely to depend in whole or in part on the resolution of that dispute." See 10 C.F.R. § 2.1115(b). Earlier this year, we elaborated on the meaning of Subpart K by pointing to language from the Statement of Considerations for the rule. See Northeast Nuclear Energy Company (Millstone Nuclear Power Station, Unit No. 3), CLI-01-03, 53 NRC 22 (2001). Specifically, we stated:

> In promulgating § 2.1115(b) of Subpart K, we used the same test described in the Nuclear Waste Policy Act of 1983 ["NWPA"] at 42 U.S.C. § 10154(b)(1). We noted that
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> > the statutory criteria are quite strict and are designed to ensure that the hearing is focused exclusively on real issues. They are similar to the standards under the Commission's existing rule for determining whether summary disposition is warranted. They go further, however, in requiring a finding that adjudication is necessary to resolution of the dispute and in placing the burden of demonstrating the existence of a genuine and substantial dispute of material fact on the party requesting adjudication.

See id. at 26, n. 5, quoting Final Rule, "Hybrid Hearing Procedures for Expansion of Spent Nuclear Fuel Storage Capacity at Civilian Nuclear Power Reactors," 50 Fed. Reg. 41,662, 41,667 (Oct. 15, 1985).

Subpart K derives from the NWPA, where Congress called on the Commission to "encourage and expedite" on-site spent fuel storage. See 42 U.S.C. § 10151(a)(2). To help accomplish this goal, the NWPA required the Commission, "at the request of any party," to employ an abbreviated hearing process -- i.e., discovery, written submissions and oral argument. See 42 U.S.C. § 10154. The NWPA authorized the Commission to convene additional "adjudicatory" hearings "only" where critical fact questions could not otherwise be answered "with sufficient accuracy." See 42 U.S.C. § 10154(b)(1)(A). Our later-enacted Subpart K codifies in our rules the Congressionally-mandated abbreviated hearing process. See 10 C.F.R. §§ 2.1111-2.1115.

As noted in the Congressional debate on the NWPA, the abbreviated hearing process was, when enacted, a "totally new procedure to be incorporated into the NRC licensing process." See 128 Cong. Rec. S15,644 (daily ed. Dec. 20, 1982) (statement of Sen. Mitchell). The purpose of the abbreviated hearing was "to speed up the licensing of onsite storage expansion." See id. The "criteria by which the Commission may decide that a full adjudicatory hearing is necessary are extremely narrow." See id.[5]

Orange County apparently understands Subpart K as demanding a full evidentiary hearing whenever an intervenor presents *any* material facts or expert opinion that contest positions taken by the license applicant or the NRC staff. The County thus seemingly views

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[5]Senator Mitchell made his comments in the context of speaking in favor of his amendment, which would have prohibited use of the abbreviated hearing process in the case of an application proposing the use of a new technology to increase onsite spent fuel storage capacity.

Subpart K merely as an alternate form of "summary disposition." Our rules long have allowed summary disposition in cases where "there is no genuine issue as to any material fact" and where "the moving party is entitled to judgment as a matter of law." See 10 C.F.R. § 2.749(d); cf. FED.R.CIV.P. 56 (judicial summary judgment rule). Obviously, if Orange County were correct that material fact disputes invariably require a full evidentiary hearing, there would be no real difference between our traditional summary disposition practice and Subpart K.

As a simple historical matter, however, it seems unlikely to us that Congress intended the Commission to enact Subpart K simply to replicate the NRC's existing summary disposition practice. (The Commission's summary disposition rule dates from 1972; Subpart K dates from 1985). Congress "cannot be presumed to do a futile thing." Halverson v. Slater, 129 F.3d 180, 184 (D.C. Cir. 1997). Accord Independent Insurance Agents of America, Inc. v. Hawke., 211 F.3d 638, 643 (D.C. Cir. 2000). Hence, to give real-world meaning to Subpart K's abbreviated hearing process, we construe Subpart K to extend beyond the NRC's pre-existing summary disposition practice. Unlike our summary disposition rule, which requires an additional evidentiary hearing whenever a licensing board finds, based on the papers filed, that there remains a genuine issue of material fact, Subpart K's "totally new procedure" (128 Cong. Rec. at S15,644) authorizes the board to *resolve* disputed facts based on the evidentiary record made in the abbreviated hearing, without convening a full evidentiary hearing, if the board can do so with "sufficient accuracy."

The text of Subpart K (which repeats, *verbatim*, the pertinent text of the NWPA) makes this clear. Subpart K directs the Board to "*dispose* of any *issues* of law or *fact* not designated for resolution in an adjudicatory hearing." See 10 C.F.R. § 2.1115(a)(2) (emphasis added). "Issues" are, by definition, points of debate or dispute. To "dispose" of issues a board must *resolve* them. To move from Subpart K's abbreviated hearing stage to an additional

evidentiary hearing, a licensing board must make a specific determination that issues "can *only* be resolved with sufficient accuracy" at such a hearing. See 10 C.F.R. 2.1115(b)(1) (emphasis added).

The Statement of Considerations for Subpart K reinforces the rule's text:

> The appropriate evidentiary weight to be given an expert's technical judgment will depend, for the most part, on the expert's testimony and professional qualifications. In some circumstances, it may be possible to make such a determination without the need for an adjudicatory hearing. The presiding officer must decide, based on the sworn testimony and sworn written submissions, whether the differing technical judgment gives rise to a genuine and substantial dispute of fact that *must* be resolved in an adjudicatory hearing.

See 50 Fed. Reg. at 41,667 (1985) (emphasis added).

The short of the matter is that the NWPA and our rule implementing it (Subpart K) contemplate merits rulings by licensing boards based on the parties' written submissions and oral arguments, except where a board expressly finds that "accuracy" demands a full-scale evidentiary hearing. Subpart K's abbreviated hearing approach is in harmony with other NRC rules, such as Subparts L and M, that authorize informal adjudicatory decision-making without the panoply of full trial-type processes. See 10 C.F.R. §2.1201 et seq. (Subpart L); 10 C.F.R. § 2.1301 et seq. (Subpart M).

Licensing boards are fully capable of making fair and reasonable merits decisions on technical issues after receiving written submissions and hearing oral arguments. The Commission is a technically oriented administrative agency, an orientation that is reflected in the make-up of its licensing boards. Most licensing boards have two, and all have at least one, technically trained member. In Subpart K cases, licensing boards are expected to assess the appropriate evidentiary weight to be given competing experts' technical judgments, as reflected in their reports and affidavits. The inquiry is similar to that performed by presiding officers in materials licensing cases, where fact disputes normally are decided "on the papers,"

with no live evidentiary hearing. See, e.g., Hydro Resources, Inc., CLI-01-4, 53 NRC at 45; Curators of the University of Missouri, CLI-95-01, 41 NRC 71, 118-20 (1995). The NRC's administrative judges, in other words, and the Commission itself, are accustomed to resolving technical disputes without resort to in-person testimony.

There may, of course, be issues, such as those involving witness credibility, that cannot be resolved absent face-to-face observation and assessment of the witness.[6] Or there may be issues involving expert or other testimony where key questions require follow-up and dialogue to be answered "with sufficient accuracy." In these kinds of cases, Subpart K contemplates further evidentiary hearings. Many issues, however, particularly those involving competing technical or expert presentations, frequently are amenable to resolution by a licensing board based on its evaluation of the thoroughness, sophistication, accuracy, and persuasiveness of the parties' submissions.

The Commission does not have extensive experience with Subpart K proceedings to date. On a case-by-case basis, we generally will defer to our licensing boards' judgment on when they will benefit from hearing live testimony and from direct questioning of experts or other witnesses. If, however, a decision can be made judiciously on the basis of written submissions and oral argument, we expect our boards to follow the mandate of the NWPA and

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[6] If, for example, the color indicated on a gauge is critical in determining the outcome of a matter, and witness A gives an affidavit stating that the gauge light was red, and witness B gives an affidavit stating that the light was green, with nothing more (such as corroborating affidavits or other documentary evidence that tends to establish the color of the gauge light), the merits of the case cannot be decided adequately or fairly based on the written submissions alone. The decision-maker must examine the live witnesses to determine, at a minimum, their demeanor, their biases, and whether they have any defects in vision. Most technical issues before NRC licensing boards fall outside this "red light - green light" category of factual disputes, which hinge on credibility of witnesses. They are more closely akin to evaluating whether the gauge was properly designed or was functioning correctly at the critical time -- issues which, depending on the caliber and completeness of written submissions, may or may not necessitate hearing testimony from live witnesses.

Subpart K to streamline spent fuel expansion proceedings by making the merits decision expeditiously, without additional evidentiary hearings. See 42 U.S.C. §§ 10151(a)(2), 10154.

B. Review of LBP-01-09

In LBP-01-09, 53 NRC __, the Board addressed the question whether the seven-step severe accident sequence postulated by Orange County is remote and speculative so as not to warrant the preparation of an EIS before issuance of the license amendment requested by CP&L. Orange County contends that the Board misapplied the Subpart K standard regarding going forward to a formal evidentiary hearing, that it improperly decided the merits of the dispute, and that it arbitrarily ignored or rejected Orange County's factual evidence without providing a reasoned explanation.

We disagree. As we see the case, the Board acted reasonably. It carefully described and assessed the procedures performed and assumptions made by all of the parties in answering the Board's questions regarding the probability of occurrence of the seven-step accident sequence. The Board presented a step-by-step critique of the parties' efforts, noting areas of agreement and disagreement between them, and registering its conclusions about the propriety of various assumptions made by the parties' technical witnesses. The Board's explanation of its approach was measured and persuasive.

While finding some differences in the parties' approaches up and down the accident sequence, the Board found that the cardinal points of divergence between the NRC staff and Orange County take place at steps 4, 5, and 6. See LBP-01-09, slip op. at 24-33. At step 4 (extreme radiation levels precluding personnel access), the Board characterized Orange County's analysis as "simplistic," as it was based on the "unrealistically conservative" assumption that a fixed amount of radioactive material deposits evenly in a 200-meter circle.

Id., slip op. at 26. The Board favored use of the staff's more sophisticated and realistic dispersion modeling. Id. At step 5 (inability to restart cooling or makeup systems due to extreme radiation doses), the Board refused to accept Orange County's "unsupported surmise" that, in order to restore cooling or makeup systems, CP&L workers would be unwilling to accept 25-rem doses, which are within EPA guidelines for emergencies. Id., slip op at 30. The Board deemed the NRC staff's analysis, by contrast, "reasonably thorough and credible based on existing regulations and guidance for exposure to emergency workers." Id., slip op. at 31. At step 6 (loss of most or all pool water through evaporation), the Board found that Orange County, in its "assignment of certainty to this step of the sequence," had not "adequately accounted" for the "myriad ways" to get recovery makeup water into the pools. Id., slip op. at 33. All of the parties accepted a probability of 1.0 for step 7, initiation of an exothermic oxidation reaction in the spent fuel pools after loss of most or all of the pool water through evaporation. See id., slip op. at 34.

The NRC staff, after its extensive analysis, assigned a value of 2.0×10^{-7} (once in five million reactor years) to the overall probability of the seven-step scenario. See id. After analysis by its contractor, CP&L found the probability to be even smaller -- 2.7×10^{-8}.[7] See id. Orange County's estimate, based on the opinion of its sole witness, Dr. Gordon Thompson, is 1.6×10^{-5}. See id. For the reasons given in its order and summarized above, the Board accepted the staff's figure, labeled it conservative, and concluded that the seven-step accident scenario is remote and speculative.[8] See id., slip op. at 37. As we mentioned at the outset of

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[7]The Board viewed CP&L's analysis, enhanced by a probabilistic risk assessment, as "a beneficial, although not dispositive, confirmation of the validity of the staff's analysis to the degree the CP&L analysis yielded a probability estimate that was equal to or lower than the staff's estimate." Id., slip op. at 17.

[8] The Commission has never determined a threshold accident probability figure for imposing the requirement of preparing an EIS. Eleven years ago, the Commission indicated

today's decision, the Commission is generally not inclined to upset the Board's fact-driven findings and conclusions, particularly where it has weighed the affidavits or submissions of technical experts. Here, in our judgment, the Board analyzed the parties' technical submissions carefully, and made intricate and well-supported findings in a 42-page opinion. We see no basis for the Commission, on appeal, to redo the Board's work.

As we held in Section A, supra, the Board possessed authority under Subpart K to reach a merits decision rather than designate disputed issues of fact for resolution at a formal evidentiary hearing. See 10 C.F.R. § 2.1115(a)(1). None of the disputed issues, the Board found (LBP-01-09, slip op. at 41), could be resolved with sufficient accuracy *only* by the introduction of additional evidence at a formal hearing. See 10 C.F.R. § 2.1115(b)(1). This was a reasonable finding. Orange County did not challenge the qualifications of any of the staff's or CP&L's technical witnesses. On behalf of Orange County, Dr. Thompson made suggestions regarding steps he thought should be taken to improve the analytical work done by the staff and CP&L;[9] however, his own analysis did not take these steps. The proponent of

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that such a threshold would be "better explored outside the scope of a particular case involving only a few parties," and declined "either to endorse or reject" an Appeal Board determination that an accident probability of 10^{-4} is remote and speculative. See Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), CLI-90-4, 31 NRC 333, 335 (1990). In a later decision in that same proceeding, the Commission reiterated that "low probability is the key to applying NEPA's rule-of-reason test to contentions that allege that a specified accident scenario presents a significant environmental impact that must be evaluated." See Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), CLI-90-7, 32 NRC 129, 131 (1990). Because we do not disturb the Board's finding of extremely low probability in this case, we need not decide here whether Orange County's 1.6×10^{-5} probability estimate is remote and speculative so as not to require preparation of an EIS. The Board itself similarly declined to draw a "line in the sand." See LBP-01-09, 53 NRC at __, slip. op. at 37.

[9]In an extensive affidavit filed in conjunction with Orange County's stay motion, Dr. Thompson advanced numerous technical criticisms of the Board's ruling in LBP-01-09. Among other things, he challenges the NRC staff's "ARCON" methodology for modeling dispersion of radioactive materials. The ARCON model used by the staff is conservative, takes into account site-specific meteorological conditions, and considers building wake effects to a limited degree.

a contention must supply, at the written submission and oral argument stages of a Subpart K proceeding, all of the facts upon which it intends to rely at the formal evidentiary hearing, should one prove necessary. See Millstone, CLI-01-03, 53 NRC at 27.

Notably, as the Board stressed, the NRC staff and CP&L subjected their analytical work to peer review. See LBP-01-09, slip op at 37-39. Orange County's expert, Dr. Thompson, did not. See id., slip op. at 37. The Board found that "in the absence of any specific evidence of bias or mistake, the ... internal review of the components of its contention EC-6 probability analysis by staff senior technical or supervisory personnel who were not involved in preparing the staff's analysis is adequate in this context to provide the Board with confidence in the reliability of the staff analysis regarding all of the important issues associated with each step of the postulated sequence." Id., slip op. at 39.

In sum, we see no basis for upsetting the Board's probability estimate or its decision against a further evidentiary hearing. Even if a further evidentiary hearing were convened, Orange County apparently intends merely to reiterate its critique of the probabilistic risk assessment of others (the NRC staff and CP&L), but not to offer a fresh analysis of its own. See "Official Transcript of Proceedings" at 479-481 (Dec. 7, 2000). Under these circumstances, scheduling a further hearing would serve only to delay these proceedings and increase the costs for all parties, in direct contravention of the NWPA.

C. Review of LBP-00-19

As in the case of all atmospheric dispersion models, the results from the ARCON model are subject to some degree of uncertainty. Despite its limitations, the ARCON model remains useful in determining whether the accident scenario at issue here is remote and speculative. The bottom line is that the Board found the NRC staff's analysis "credible" in its own right and more persuasive than that of Dr. Thompson. See LBP-01-09, slip op at 25-28.

Orange County contests the form in which Contention EC-6 was admitted. Specifically, Orange County faults the Board for limiting its inquiry to a specific seven-step accident scenario rather than focusing on the broader issue of the overall probability of a spent fuel pool accident at Shearon Harris. Orange County claims that it pleaded the broad accident probability issue with basis and specificity.

The crux of Orange County's environmental contention is that the NRC ought to have issued an environmental impact statement in connection with the license amendment requested by CP&L. See "Orange County's Request for Admission of Late-Filed Environmental Contentions" (Jan. 31, 1999). The Board focused on whether the specific accident proposed by Orange County in basis F.1 of the contention "has a probability sufficient to provide the beyond-remote-and-speculative 'trigger' that is needed to compel preparation of an EIS." See LBP-00-19, 52 NRC at 95. That accident scenario was articulated by CP&L in its contentions response. Orange County, in its contentions reply, agreed that CP&L's summary was "reasonable," but suggested rewording two phrases. See "Orange County's Reply to Applicant's and Staff's Oppositions to Request for Admission of Late-Filed Environmental Contentions" at 8 (Mar. 13, 2000). The Board adopted Orange County's rewording suggestions, and the contention was admitted.

At the contentions stage of this litigation, Orange County offered no specific causes for spent fuel pool accidents other than the seven-step scenario admitted by the Board. Orange County cannot now transform vague references to potential spent fuel pool catastrophes into litigable contentions. See Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-35 (1999) (NRC's "strict contention rule" requires "detailed pleadings"). Moreover, Orange County expressly approved the final language of its admitted environmental contention. The County should not now be heard to complain that the

contention as admitted was too narrow. Therefore, we see no basis for the County's petition to review LBP-00-19.

D. Review of LBP-00-12

Orange County contends that the Board erred in LBP-00-12 by (1) ruling that the use of procedural and administrative measures for criticality control in the spent fuel pools is permissible; (2) ignoring Orange County's evidence regarding quality assurance issues; and (3) refusing to consider Orange County's argument that CP&L must seek a construction permit to use piping and equipment that was installed in the early 1980s and not used. We turn now to individual discussion of these asserted points of error.

1. Criticality Controls

Orange County alleged that criticality control measures proposed by CP&L would violate NRC regulations. Specifically, Orange County relies on General Design Criterion 62 (GDC 62), one of the General Design Criteria for Nuclear Power Plants listed in 10 C.F.R. Part 50, Appendix A. GDC 62 provides, "Criticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically safe configurations." See 10 C.F.R. Part 50, Appendix A ("General Design Criteria for Nuclear Power Plants"). Orange County maintains that the use of soluble boron and credits for fuel enrichment, burn-up, and decay time limits are not "physical systems or processes," and thus violate GDC 62.

In another case we decide today, involving the Millstone spent fuel pool, we hold that the phrase "physical systems or processes" in GDC 62 does not prohibit the same administrative and procedural measures opposed by Orange County in the present case. See Northeast Nuclear Energy Company (Millstone Nuclear Power Station, Unit No. 3), CLI-01-__, 53 NRC __. (May _, 2001). At the Commission's invitation, Orange County and CP&L

participated in Millstone as amici curiae. In view of our Millstone decision, nothing remains of the GDC 62 issue for further Commission review.

2. Quality Assurance Issues

Orange County contends that the Board ignored a significant portion of its evidentiary case on quality assurance issues and cites, in particular, alleged deficiencies in CP&L's video camera inspections of the piping system at issue in this license amendment application. Orange County maintains that the inspections covered only the embedded welds and not the embedded piping. Further, Orange County states that the Board assumed that the piping was inspected and failed to address evidence that only the welds were inspected.

Orange County's claim is incorrect. The Board specifically found that "all fifteen embedded welds and their associated piping were inspected using a high resolution camera, taking high quality pictures of everything inside the piping, longitudinal welds, circumferential welds, and piping surfaces." See LBP-00-12, 51 NRC at 276 (citation omitted and emphasis added). The Board pointed out that an NRC staff expert had reviewed the videotapes from the remote camera examinations of ten of the fifteen embedded welds. Id. at 277. From the review and analysis of the videotapes and from available documentation, the NRC staff "concluded that the piping and welds are conservatively designed; are several times thicker than required by ASME Code; are generally in good condition with some minor, but no major, defects; and have leaktight integrity." Id. The Board also stated that the steps advocated by Orange County's own expert are "just what has been done." Id., at 278.

On a more general plane, it hardly can be said that the Board gave short shrift to Orange County's quality assurance concerns. The Board admitted the issue for hearing, allowed discovery, obtained written evidence, and heard oral argument. The Board ultimately devoted some 11 pages of its order to discussing the quality assurance issue on the merits.

See id., at 269-280. As we have stressed throughout today's decision, we do not ordinarily second guess Board fact findings, particularly those reached with this degree of care. Orange County has given us no reason to do so here.

3. Construction Permit

Orange County maintains that the Board erred in refusing to consider its argument that CP&L must seek a construction permit to use the piping and equipment that were abandoned in the early 1980s. The Board ruled that the construction permit claim was not a part of Orange County's admitted contention and cannot be admitted unless it fulfills the late-filing standards set out in 10 C.F.R. § 2.714(a). See LBP-00-12, 51 NRC at 281. Because Orange County made no effort to address the late-filing standards, the Board precluded further consideration of the issue. See id. at 281-282. The Board also expressed skepticism that the amendment proposed by CP&L "is a 'material alteration' in the sense intended by the regulations so as to require a construction permit." See id. at 280-82, citing 10 C.F.R. § 50.92(a).

We agree with the Board. Orange County was inexcusably late in attempting to introduce its construction permit claim. In addition to the claim's untimeliness, it seemingly lacks merit as a legal matter. While the term "material" is susceptible of various meanings, longstanding NRC staff practice indicates that alterations of the type that require a construction permit are those that involve substantial changes that, in effect, transform the facility into something it previously was not or that introduce significant new issues relating to the nature and function of the facility. See Portland General Electric Co., et al. (Trojan Nuclear Plant), LBP-77-69, 6 NRC 1179, 1183 (1977).[10] To trigger the need for a construction permit, the

[10] The example the Licensing Board cited in Trojan was a construction permit issued for alterations in the University of Maryland's research reactor. See id. There, the alterations involved complete removal of the existing control rods, rod drive mechanisms, core

change must "essentially [render] major portions of the original safety analysis for the facility inapplicable to the modified facility." See id. The present case involves activation of already-built spent fuel pools, whose safety can be (and has been) adequately evaluated in the context of an ordinary license amendment. This seems to us a sensible approach.

E. Orange County's Request for Emergency Stay

In addition to seeking Commission appellate review, Orange County requested an emergency stay of LBP-01-09, pending appeal, insofar as that decision allowed the CP&L license amendment to take effect. Stays pending appellate review are governed by 10 C.F.R. § 2.788. In determining whether to grant a stay, the Commission will consider:

> (1) Whether the moving party has made a strong showing that it is likely to prevail on the merits;
> (2) Whether the party will be irreparably injured unless a stay is granted;
> (3) Whether the granting of a stay would harm other parties; and
> (4) Where the public interest lies.

See 10 C.F.R. § 2.788(e). Our decision today to deny Orange County's petition for review terminates adjudicatory proceedings before the Commission, and renders moot the County's motion for a stay pending appeal. Accordingly we deny it.

We took no action on Orange County's stay motion during our consideration of the County's petition for review because we saw no possibility of irreparable injury. The record indicates that the injury asserted by the County could not occur until at least July 2, 2001, when CP&L expects to place spent fuel pools C and D into service following testing. See Affidavit of R. Steven Edwards and Robert K. Kunita, at ¶ 11 (Mar. 29, 2001). Even after July 2, the additional spent fuel stored at Shearon Harris will total no more than 150 fuel elements

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instrumentation and control room equipment and replacement of these components with components of a different design. See id. The dearth of other examples of post-operating license amendment construction permits supports our view that such permits are necessary only in cases of dramatic or transforming changes in existing facilities.

in the short term (i.e., during 2001). See id. at ¶ 15. Moreover, Orange County's claim of injury -- offsite radiation exposure in the event of a spent fuel pool accident -- is speculative, given the small likelihood of such an accident, and does not amount to the kind of "certain and great" harm necessary for a stay. See Cuomo v. NRC, 772 F.2d 972, 976 (D.C. Cir. 1985); accord Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB-820, 22 NRC 743, 747-48 & n.20 (1985).

Of the four stay factors, "the most crucial is whether irreparable injury will be incurred by the movant absent a stay." Alabama Power Co. (Joseph M. Farley Nuclear Plant, Units 1 and 2), CLI-81-27, 14 NRC 795, 797 (1981). Accord Sequoyah Fuels Corp. (Gore, OK), CLI-94-9, 40 NRC 1, 7 (1994). Here there was (and is) no such injury.

F. Compliance with Commission Adjudicatory Rules

We close on a procedural note. The Commission's rule providing for review of decisions of a presiding officer plainly states that a "petition for review...must be no longer than ten (10) pages." See 10 C.F.R. § 2.786(b)(2). Orange County's petition for review, although nominally confined to 10 pages, resorts to the use of voluminous footnotes, references to multi-page sections of earlier filings, and supplementation with affidavits that include additional substantive arguments. This can only be viewed as an attempt to circumvent the intent of our page-limit rule. See Production and Maintenance Employees Local 504 v. Roadmaster Corp., 954 F.2d 1397, 1406 (7th Cir. 1992); see also Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), CLI-89-8, 29 NRC 399, 406 n.1 (1989). While we did not strike Orange County's petition, and we expanded other parties' page limits to allow them to respond fully to Orange County's submission, we do not condone the County's effort to evade our page-limits rule.

Page limits "are intended to encourage parties to make their strongest arguments clearly and concisely, and to hold all parties to the same number of pages of argument." Hydro Resources, Inc., CLI-01-4, 53 NRC at 46. We are quite aware that our current 10-page limit for petitions for review (and responses) requires the parties to be direct and concise. This may be difficult in cases where, as here, the issues are numerous and complex. Hence, Orange County's effort to find creative means to avoid the page limits is in a sense understandable. Indeed, the Commission itself has invited public comment on a proposed rule that would, among other procedural reforms, increase the pages permitted for a petition for review from 10 to 25. See "Changes to Adjudicatory Process: Proposed Rule," 66 Fed. Reg. 19,610, 19,626 (Apr. 16, 2001).

For now, though, we advise NRC litigants against taking Orange County's self-help approach. We expect parties in Commission proceedings to abide by our current page-limit rules, and if they cannot, to file a motion to enlarge the number of pages permitted. In the future, the Commission may exercise its authority to deal more harshly with attempts to circumvent page-limit or other procedural rules.

III. Conclusion

For the foregoing reasons, the Commission *(*1*) denies* Orange County's petition for review of the Board rulings in LBP-00-12, LBP-00-19, and LBP-01-09; and (2) *denies* Orange County's request for an emergency stay of LBP-01-09.

IT IS SO ORDERED.

For the Commission

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 10th day of May, 2001.