UNITED STATES OF AMERICA
RAS 10747 NUCLEAR REGULATORY COMMISSION

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COMMISSIONERS

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Jeffrey S. Merrifield
Gregory B. Jaczko
Peter B. Lyons

In the Matter of	)	
LOUISIANA ENERGY SERVICES, L.P.	)	Docket No. 70-3103-ML
(National Enrichment Facility)	)	

CLI-05-28

MEMORANDUM AND ORDER

The Commission has before it a petition for review of LBP-05-13,[1] an Atomic Safety and Licensing Board Partial Initial Decision on environmental contentions. In the petition, intervenors Nuclear Information and Resource Service (NIRS) and Public Citizen (PC) allege seven Licensing Board errors. Recently, the Commission issued CLI-05-21, which addressed one of those alleged errors (regarding waste disposal impacts), and remanded an environmental contention on disposal impacts to the Board. Our decision today addresses the remaining claims, and finds no basis for further Commission review.

1. Groundwater Impacts and Water Supply Impacts

NIRS/PC allege that the Licensing Board erred in its findings after an evidentiary hearing, that the NRC staff's environmental reviews had adequately assessed impacts on

[1] 61 NRC 385 (2005).

groundwater and water supplies.[2] These environmental impacts issues involved highly technical, fact-intensive questions. On such technical matters, "where the affidavits or submissions of experts must be weighed," we are "generally disinclined to upset" the findings and conclusions of a Presiding Officer.[3] In short, while in some circumstances the Commission may choose to make its own *de novo* findings of fact, we "generally do not exercise that authority where a Licensing Board has issued a plausible decision that rests on carefully rendered findings of fact."[4] While it is always possible "to come up with ... more areas of discussion that conceivably could have been included,"[5] we find the Board's conclusions on groundwater and water supply impacts plausible, and see nothing in NIRS/PC's petition for review demonstrating the likelihood of "clear error" warranting plenary review.[6]

For the water supply impacts, NIRS/PC would have preferred to see additional impacts analyses, including estimates of 30-year water usage at "high, middle, and low values." But the Board found additional impacts analyses unnecessary, given its conclusion that the evidence "clearly establishes that the effects of the additional National Enrichment Facility-related water withdrawal are *de minimis* when compared with any relevant water resources, rights, or usage."[7] In seeking more impacts analyses, NIRS/PC cite to a decision where a "reasonably foreseeable

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[2] *Id.* at 405-26.

[3] *See Hydro Resources, Inc.* (Rio Rancho, NM), CLI-00-12, 52 NRC 1, 3 (2000). *Accord Private Fuel Storage* (Independent Spent Fuel Storage Installation), CLI-05-19, 62 NRC ___, ___ (slip op. at 9-10)(Sept. 9, 2005).

[4] *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-03-8, 58 NRC 11, 25-26 (2003).

[5] *Hydro Resources, Inc.* (Rio Rancho, NM), CLI-01-4, 53 NRC 31, 71 (2001).

[6] *See* 10 C.F.R. § 2.341(b)(4).

[7] *See* LBP-05-13, 61 NRC at 426; *see also id.* at n.8.

significant adverse impact[]" was "completely ignored" and not analyzed.[8] Here, however, the Board simply found additional impact analyses unnecessary given the evidence showing *de minimis* impacts.

2. Nuclear Proliferation Impacts

NIRS/PC argue that the Licensing Board erred in declining to admit for hearing their proposed contentions alleging a need to analyze the potential impacts of the proposed LES facility on national nuclear non-proliferation objectives, including the objectives of a 1993 agreement between the United States and Russia on the purchase of enriched uranium from Russian weapons stocks.[9] NEPA, however, "requires a 'reasonably close causal relationship' between the [alleged] environmental effect and the alleged cause."[10] Nuclear non-proliferation concerns span a host of factors far removed from the licensing action at issue. Any potential effects of the LES facility on non-proliferation policies and programs are speculative, and far afield from our decision whether to license the facility, given that achieving non-proliferation goals depends on independent future actions by numerous third parties, including the President, Congress, and officials of other nations. The NEPA process simply "does not extend to all conceivable consequences of agency decisions, no matter how far down the causal chain from a nuclear licensing decision and no matter how unpredictable."[11] The nation's non-proliferation

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[8] *See Mid States Coalition for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 550 (8th Cir. 2003).

[9] *See* LBP-04-14, 60 NRC 40, 70 (2004); Petition on Behalf of NIRS/PC for Review of First Partial Initial Decision on Environmental Contentions (June 24, 2005)(NIRS/PC Petition) at 16-17.

[10] *Department of Transp. v. Public Citizen*, 541 U.S. 752, 767 (2004).

[11] *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 347 (2002)(finding that the NRC has no obligation under NEPA to consider terrorism).

objectives, and the United States – Russia highly-enriched uranium (HEU) purchase agreement (commonly known as the "Megatons to Megawatts" program) are international in nature and do not have a "proximate cause" connection to the proposed NEF uranium enrichment facility sufficient to require a NEPA inquiry.[12]

NIRS/PC also alleged that the proposed LES facility would enhance nuclear proliferation risks because two individuals who were contractors working for Urenco (which owns financial interests in LES) "took plans for centrifuge construction to Iraq" in the late 1980s, and another individual working for Urenco in the mid-1970s stole centrifuge technology information that later was obtained by Pakistan and later shared with Libya, North Korea, and Iran.[13] But NIRS/PC nowhere linked these individuals to Urenco or LES's *current* management personnel or practices, and thus they have not shown how these long-ago alleged historical events pertain to the proposed LES facility. "Allegations of management improprieties or poor 'integrity' ... must be of more than historical interest: they must relate directly to the proposed licensing action."[14] The Board correctly found that NIRS/PC did not demonstrate a "direct and obvious relationship" between the alleged management "character" issues and the licensing action at issue.[15] We discern no reason to revisit the Board's rulings on the NIRS/PC non-proliferation contentions.[16]

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[12] *See id.* at 349 & n.33, (*citing Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 760, 772-75 (1983)).

[13] NIRS/PC Petition at 17.

[14] *See Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 366 (2001)(citation omitted); *petition for reconsid. denied,* CLI-02-01, 55 NRC 1, 3-4 (2002).

[15] LBP-04-14, 60 NRC at 70.

[16] Those contentions were NIRS/PC EC-8 ("Impacts on National Security and Non-Proliferation Efforts") and Basis G of NIRS/PC EC-7 ("Need for the Facility").

3. Impact on Uranium Enrichment Market:

NIRS/PC argue the Licensing Board erred in limiting the NEPA analysis of the need for and costs and benefits of the LES facility. Specifically, the Board held that LES had no obligation to litigate a "business plan" or "business case," nor to demonstrate the potential profitability of the proposed facility.[17] On review, NIRS/PC argue that a NEPA analysis of the "need" for a proposed enrichment facility requires analysis of the facility's "impact on the enrichment market," including likely effects on market price.[18] In support, NIRS/PC cite to a Commission decision in the earlier *LES* proceeding involving the Claiborne, Louisiana site.

But contrary to NIRS/PC's suggestion, our decision in the earlier *LES* proceeding did not hold that a NEPA analysis must detail potential market price effects. In that decision, the Commission merely deferred to and affirmed "a Board factual determination [on price effects], concluding that the Board had 'sufficient reason to examine' the price-related matters that LES [itself] had 'repeatedly advanced.'"[19] In short, because "the record before the [Claiborne] Board included numerous specific claims of beneficial market price effects, ... *made by LES*," the Commission concluded that it had been "legitimate for the Board to evaluate this claimed economic benefit."[20] But the Commission did not endorse LES's or the Board's price-effects approach. On the contrary, the Commission criticized the Board's over-emphasis on price-effects, and noted the "inherent unpredictability of future market conditions and prices."[21] The

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[17] LBP-04-14, 60 NRC at 69.

[18] NIRS/PC Petition at 21.

[19] Answer of LES in Opposition to Petition for Review of LBP-05-13 (July 5, 2005) at 23-24 (citing *Louisiana Energy Servs., L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 91, 96 (1998)).

[20] *Claiborne Enrichment Center*, 47 NRC at 91 (emphasis added).

[21] *See id.* at 94-95.

Commission stressed the other benefits asserted for the Claiborne facility, including lessening dependence on foreign suppliers and providing the United States with a more technologically advanced uranium enrichment technology.[22]

The Commission has said that the NRC is "not in the business of regulating the market strategies of licensees" or "determin[ing] whether market conditions warrant commencing" operations, and that we leave to licensees the "ongoing business decisions that relate to costs and profit."[23] "An agency's primary duty under NEPA is to take a hard look at environmental impacts ....Determination of economic benefits and costs that are tangential to environmental consequences are within a wide area of agency discretion."[24] Here – in contrast to the earlier *LES* proceeding -- LES does not claim that the facility will bring about significant market price reductions, but that it will supplement and diversify existing domestic sources of enriched uranium, thus decreasing dependence on foreign sources and enhancing security of supply, and that it will do so by a technology (gas centrifuge) more advanced and energy efficient than that currently available in the United States.[25] We agree with the Board that LES need not litigate its "business plans," nor must the NRC under NEPA perform a detailed market analysis of whether the LES facility would bring about appreciably lower uranium enrichment service prices.

4. Impacts of Deconversion Process

LES intends to convert the depleted uranium hexafluoride (DUF6) to be generated by its

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[22] *See id.*

[23] *See Hydro Resources,* 53 NRC at 48-49.

[24] *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 145 (2004).

[25] *See, e.g.,* FEIS, Vol. 1 at 1-2 to 1-5; 2-33 to 2-34; 2-40.

proposed uranium enrichment facility to a more stable product form, specifically triuranium octaoxide (U3O8), prior to disposal. The process of converting DUF6 to another product form for ultimate disposal is commonly referred to as "deconversion." Deconversion would not be performed at LES's proposed uranium enrichment facility, but at a separate facility. In their petition for review, NIRS/PC argue that the Board erroneously limited consideration of the impacts of deconversion. Specifically, they argue that depleted uranium dioxide (DUO2) is an "appropriate alternative" disposal form, but that the Board incorrectly prohibited NIRS/PC from raising arguments on DUO2 as an "alternative deconversion product."[26]

As we see the record, the Board correctly ruled that NIRS/PC were late with their allegations about a need to analyze the alternative of converting DUF6 to DUO2. LES's Environmental Report made clear LES's intention to convert depleted uranium to the U3O8 form.[27] NIRS/PC plainly could have and should have raised their DUO2 "alternative" claim following LES's Environmental Report. Indeed, that LES intended to dispose of "deconverted U3O8" was clearly understood by NIRS/PC in its intervention petition,[28] yet their petition nowhere argued that an alternate product form should be considered.

Moreover, the bases referenced in support of the conversion impacts contention in NIRS/PC's original petition referred specifically to a "U3O8 deconversion plant," a "depleted UF6 to depleted U3O8 facility," and "convert[ing] DUF6 into U3O8."[29] In short, there simply was no indication that the NIRS/PC contention also encompassed impacts of converting DUF6 to an

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[26] *See* NIRS/PC Petition at 18.

[27] *See* LES Environmental Report (Dec. 2003) at 4.13-8; 4.13-14 to 4.13-15.

[28] *See* Petition to Intervene by NIRS/PC (April 6, 2004) at 36, 37, 38; see also *id.* at 25-26, 29.

[29] *See id.* at 25-26; *see also id.* at 31 (referencing and incorporating the bases filed in support of NIRS/PC's "plausible strategy" contention on depleted uranium disposition).

alternative disposal product form. Nor did NIRS/PC make any mention of a need to examine a DUO2 alternative when it submitted a proposed supplement to the "impacts" contention, following issuance of the LES Draft Environmental Impact Statement.[30] Instead, NIRS/PC said nothing about the DUO2 alternative until later, when their expert in a filed report and written direct testimony, respectively, stated that a "possible waste form that should be examined ... is the encapsulation of DUO2 in an engineered ceramic," an option he described had "potential unknowns ... includ[ing] the fact that little industrial experience exists with these ceramic materials."[31]

We therefore agree with the Board that NIRS/PC improperly and belatedly sought through its expert's testimony to "introduce ... essentially a new contention outlining an additional alternative for consideration."[32] NRC adjudicatory proceedings "would prove endless" if parties were free at hearing to introduce entirely new claims which they either "'originally opted not to make or which simply did not occur to [them] at the outset.'"[33] NIRS/PC had no need to await additional documents or analyses from LES or the NRC staff to raise their DUO2 alternative product form issue.[34]

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[30] *See* Motion on Behalf of NIRS/PC to Amend and Supplement Contentions (Oct. 20, 2004) at 12-15.

[31] *See* "Costs and Risks of Management and Disposal of Depleted Uranium from the National Enrichment Facility" (Nov. 24, 2004)(Proprietary) at 30-31; Direct Testimony of Dr. Makhijani Regarding NIRS/PC Contention EC-4 (Jan. 7, 2005) at 16.

[32] *See* Memorandum and Order (Ruling On In Limine Motions)(01/21/05) at 8.

[33] *Hydro Resources, Inc.* (Rio Rancho, NM), CLI-04-33, 60 NRC 581, 591 (2004)(quoting *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 428-29 (2003)).

[34] Indeed, NIRS/PC's expert argued in his filed testimony of January 2005 that LES's *Environmental Report* (as well as the later-issued DEIS) should have considered producing "UO2 rather than U3O8" by the deconversion process because UO2 may be "more suited for final disposal." *See* "Direct Testimony of Dr. Arjun Makhijani Regarding Contention EC-4" (Jan. 7, 2005) at 8, 14. Obviously, this claim could have been raised following the Environmental

Moreover, NEPA does not require a separate analysis of alternatives that would have "substantially similar consequences."[35] LES's Environmental Report describes and references a Department of Energy study of disposal strategies for depleted uranium hexafluoride, which assessed the impacts of disposing of depleted uranium in both the U3O8 and UO2 product forms. As LES's Environmental Report notes, the DOE study found that potential disposal impacts would "tend to be [only] slightly larger for U3O8 than for UO2" because the volume of U3O8 would be greater.[36] NIRS/PC's petition did not challenge this conclusion.

In addition, NEPA does not require a detailed study of rejected alternatives, only a brief discussion of why an option was eliminated from further consideration.[37] In the DEIS, the NRC staff concluded that deconversion to U308 would be preferable over other disposition options due to its chemical stability.[38] NIRS/PC did not challenge this conclusion in its October 2004 motion to amend contentions, filed after the DEIS was issued.

On review, NIRS/PC also argue that the LES DEIS is deficient because it does not analyze a particular deconversion process. Deconversion of DUF6 to U3O8 is a chemical process that produces aqueous hydrofluoric acid (HF). One method of deconversion utilizes lime to neutralize the hydrofluoric acid to produce calcium fluoride (CaF2) for disposal or sale. Another method converts the DUF6 to DU3O8 and anhydrous hydrofluoric acid (AHF) through a

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Report.

[35] *See Westlands Water Dist. v. United States Dept. of Interior*, 376 F.3d 853, 868, 871 (9th Cir. 2004)(quoting *Headwaters, Inc. v. Bureau of Land Mgmt.*, 914 F.2d 1174, 1181 (9th Cir. 1990)).

[36] *See* LES Environmental Report (Dec. 2003) at 4.13-13.

[37] *See Fuel Safe Washington v. FERC*, 389 F.3d 1313, 1323 (10th Cir. 2004).

[38] *See* NUREG-1790, Environmental Impact Statement for the Proposed National Enrichment Facility, Draft Report for Comment (DEIS), at 2-28 (Sept. 2004).

process involving distillation.[39] When LES filed its application, it had not yet determined whether it would convert the DUF6 using the CaF2 or anhydrous hydrofluoric acid (AHF) process.[40] Since then, as the Board noted, LES committed to amend (and did amend) its license application to assure that the anhydrous hydrofluoric acid (AHF) deconversion process will not be used at any deconversion facility selected for deconversion of LES's DUF6.[41]

NIRS/PC nonetheless argue that the AHF deconversion process "should have been examined but was not."[42] They claim that the AHF process presents "significantly greater risks" than the calcium fluoride process that LES has selected and says will be used.[43] NIRS/PC argue that because the Department of Energy (DOE) analyzed the AHF process in a Programmatic Environmental Impact Statement (PEIS) on depleted uranium disposition,[44] and an enrichment services company (Cogema) pursued an AHF process for deconversion "it is clearly a realistic alternative" requiring NEPA impacts analysis.[45]

We disagree. NEPA does not require agencies to analyze impacts of alternatives that are speculative, remote, impractical, or not viable.[46] The record in this proceeding highlights the

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[39] LBP-05-13, 61 NRC at 428.

[40] *Id.*

[41] *Id.* at 428-29.

[42] NIRS/PC Petition at 18.

[43] *Id.*

[44] Although DOE analyzed the AHF process, it ultimately decided against using an AHF deconversion process for its proposed facilities at Portsmouth, Ohio, and Paducah, Kentucky.

[45] NIRS/PC Petition at 18.

[46] *See Fuel Safe Washington v. FERC*, 389 F.3d at 1323, 1324; *see also Westlands Water District*, 376 F.3d at 868

still undeveloped nature of the AHF process for use in a deconversion facility.[47]

Additionally, as the Board noted, LES revised its license application to assure that the AHF conversion method will *not* be used by any deconversion vendor contracted to treat the LES DUF6. Such a commitment will be, as the Board stresses, "a condition on the [LES] license."[48] Accordingly, for the AHF process to be employed for deconversion of LES's DUF, LES would need to obtain a license amendment. In such an event, the staff would be required to analyze impacts of the AHF deconversion process during its review process, and the intervenors would have full opportunity to challenge the amendment and raise safety or environmental impacts concerns.

In any event, here the Board nonetheless did examine impacts associated with the AHF process. The Board noted, however, that given that there is no current deconversion facility using an AHF process, and no current plan to construct such a facility, any assessment of the impacts of using the AHF process would involve much uncertainty. Given this uncertainty, the Board found that there was sufficient consideration in the record of the "impacts of the management of anhydrous HF."[49] We find the Board's conclusion reasonable.

5. Reliance On Department of Energy Analyses

In their petition for review, NIRS/PC also argue that the Board erroneously relied upon Environmental Impact Statements prepared by the Department of Energy (DOE). Specifically, they claim that the DEIS analysis of deconversion impacts is deficient because "the NRC staff did no analysis and, instead, relied upon DOE documents, which [the] Staff neither prepared nor

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[47] *See, e.g.*, LES Hearing Transcript at 1124-25; Rebuttal Testimony of Dr. Arjun Makhijani Regarding EC-4 (Feb. 7, 2005) at 5.

[48] LBP-05-13, 61 NRC at 429.

[49] *Id.* at 435.

even checked."[50]

Environmental impact statements typically incorporate by reference other analyses and data by citing to the material and describing its content.[51] Incorporated material must be reasonably available for inspection by interested persons within the time allowed for comment.[52] Here, the DEIS properly incorporated by reference conclusions from two DOE Environmental Impact Statements which had studied the environmental impacts expected from a DUF6 conversion facility to be located at Portsmouth, Ohio and Paducah, Kentucky, respectively.[53] These EISs were publicly available for review.

In addition, the NRC staff's expert repeatedly affirmed during the hearing that he had assessed the reasonableness of the DOE assumptions, calculations, and conclusions, even though he did not redo its underlying calculations.[54] Actually redoing the DOE's calculations would have been a duplication of resources not required by law. What an agency cannot do is "reflexively rubber stamp a statement prepared by others."[55] Here, the staff's expert found the DOE conversion impacts analyses reasonable "based on an assessment of the material presented and their supporting documents."[56] In short, there was an independent evaluation of the DOE conclusions.

NIRS/PC also claim that the Board's decision erroneously relied on a 1999 DOE

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[50] NIRS/PC Petition at 19.

[51] *See* 40 C.F.R. § 1502.21.

[52] *See id.*

[53] *See* DEIS at 4-53 to 4-57.

[54] *See* LES Hearing Transcript (Feb. 8, 2005) at 965-66, 970, 971,1027, 1029-30, 1032, 1035, 1038, 1042-44, 1053.

[55] *See Save Our Wetlands, Inc. v. Sands*, 711 F.2d 634, 642 (5th Cir. 1983).

[56] *See* Transcript at 1053.

Programmatic Environmental Impact Statement (PEIS) analysis of deconversion impacts, which was not explicitly referenced in the DEIS conversion impacts analysis. They suggest, therefore, that the Board inappropriately "devise[d] new rationales to sustain [NRC] agency action."[57] But the PEIS was made available as an exhibit at the hearing, and thus NIRS/PC had full opportunity to present its own evidence challenging the relevant PEIS deconversion impacts conclusions. The Board found that the staff's analysis in the DEIS, "as supplemented by the testimony and evidence submitted in this proceeding," adequately discussed the impacts of construction and operation of a conversion plant for the DUF6 waste that would be generated by the LES proceeding.[58] In an adjudicatory hearing, the "adjudicatory record and Board decision (and, of course, any Commission appellate decisions) become, in effect, part of the FEIS."[59] "[T]o the extent that any environmental findings by the [Board] (or the Commission) differ from those in the FEIS, the FEIS is deemed modified by the decision."[60]

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[57] NIRS/PC Petition at 21.

[58] LBP-05-13, 61 NRC at 436.

[59] *See Hydro Resources, Inc.* (Rio Rancho, NM), CLI-01-4, 53 NRC 31, 53 (2001)(quoting *Claiborne*, CLI-98-3, 47 NRC at 89). While the deconversion impacts analysis in the DEIS does not cite to the DOE PEIS, it was clear from the hearing, as LES points out, that the staff's "review of environmental analyses in the PEIS substantially informed its preparation of the DEIS." *See* Answer of LES in Opposition to Petition for Review of LBP-05-13 (July 15, 2005) at 19 (citing Transcript at 1000-07, 1018-22). The NRC staff expert who prepared the DEIS conversion impacts analysis explained that he had not expressly cited to the PEIS because it was not the most current analysis of conversion impacts. *See* Transcript at 1052. Instead, the LES DEIS conversion impacts discussion cites to and describes the DOE EISs for Portsmouth and Paducah, which in turn incorporate by reference the DOE PEIS.

[60] *See Hydro Resources*, 53 NRC at 53.

Conclusion

For the reasons given in this decision, we *deny* review of the pending issues raised in the NIRS/PC petition for review of LBP-05-13.

IT IS SO ORDERED.

For the Commission

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Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 21st day of November, 2005.