

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE SECRETARY

In the Matter of

Docket No. 70-3103

Louisiana Energy Services, L.P.
National Enrichment Facility

**REPLY BY
NUCLEAR INFORMATION AND RESOURCE SERVICE
AND
PUBLIC CITIZEN
TO ANSWERS OF
NUCLEAR REGULATORY COMMISSION STAFF
AND
LOUISIANA ENERGY SERVICES, L.P.**

Eleven citizens of Lea County, New Mexico, have filed declarations in this proceeding, authorizing Petitioners Nuclear Information and Research Service (“NIRS”) and Public Citizen (collectively, “Petitioners”) to seek leave to intervene in this proceeding and to raise certain issues material to the issuance of the licenses sought by Louisiana Energy Services, L.P. (“LES”). Petitioners have filed 33 pages of contentions for consideration by the Nuclear Regulatory Commission (the “Commission” or “NRC”). Commission Staff have answered, concurring that Petitioners have standing and that most of their contentions should be admitted. LES does not dispute Petitioners’ standing to question the issuance of such licenses. However, LES maintains that none of the issues raised in Petitioners’ contentions may be considered by the Commission.

LES maintains that most of the contentions raised by Petitioners are barred by the Commission’s hearing order, or by LES’s efforts, in its answer, to rebut Petitioners’ contentions.

LES's position would leave few issues for the Commission to consider on the merits. LES's position is neither good policy nor supported by the precedents of this Commission. We show herein that Petitioners' contentions (except as withdrawn herein) are fully admissible under the Commission's "contentions rule," now contained in 10 CFR § 2.309. It must be borne in mind that, although the contentions rule requires specific allegations, it does not impose formalistic pleading nor evidentiary standards. Rather, allegations are to be read generously in favor of a petitioner:

"An intervenor need not, however, prove its case at the contention stage. The factual support necessary to show that a genuine dispute exists need not be in affidavit or formal evidentiary form, or be of the quality necessary to withstand a summary disposition motion. What is required is a 'minimal showing' that material facts are in dispute, indicating that a further inquiry is appropriate." In re *Georgia Institute of Technology* (Georgia Tech Research Reactor), CLI-95-12, 42 NRC 111, 117 (1995).

Moreover, when determining admissibility of contentions, it is not appropriate to reach the merits or to consider the evidence, and LES may not exclude contentions by raising a factual conflict. In re *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station), CLI-91-12, 34 NRC 149, 156 (1991).

Petitioners refer below to their contentions and the positions of NRC Staff and LES; thereafter Petitioners reply to objections interposed by either party. Petitioners' contentions fall into these categories:

1. Impacts upon ground water and water supplies
2. Waste storage and disposal
3. Decommissioning costs
4. Costs of management and disposal of depleted UF₆
5. Need for the facility; impact on national security
6. Natural gas-related accident risks not adequately accounted for

1. Impacts upon ground water and water supplies:

1.1 Contention: Petitioners contend that the Environmental Report (“ER”) contained in the application does not contain a complete or adequate assessment of the potential environmental impacts of the proposed project on ground and surface water, contrary to the requirements of 10 CFR 51.45.

NRC Staff Answer: “The Staff does not oppose the admission of this contention, limited to the matters raised in the statements offered in support of the basis. . . . The arguments advanced by NIRS provide sufficient specificity and basis to raise genuine issues of material fact and law on these matters.” (Staff Ans. 10).

LES Answer: LES asserts that its effluent-control system is perfect, “effects on natural water systems will be precluded” (LES Ans. 10), and there can be no contentions made concerning such effects, since there will be *no discharge* from the plant. Thus, LES says, contentions as to the fate and transport of contaminants in ground water must be rejected, since there will be none.

Discussion: Petitioners support this contention with analyses by George Rice, an experienced hydrologist, who has stated that “some water from the evaporation basins and septic leach field will infiltrate into the alluvium.” (Pet. 20). Rice’s analyses point out numerous hydrologic issues that have not been analyzed by LES in preparing the Environmental Report (“ER”) (See Pet. At 20-23). Among the issues are: “How much water would infiltrate into the alluvium from” the various basins and septic field to be constructed by LES.

Despite LES’s claims in its Answer that “no discharge” will take place, LES’s ER concedes that there is a “remote possibility of stormwater runoff from the UBC Storage Pad becoming contaminated with UF6 or its derivatives” (ER at 4.13-3). LES admits, further, that

the “sources of potential water runoff contamination (albeit unlikely) would be either residual contamination on the cylinders from routine handling, or accidental releases of UF₆ and its derivatives resulting from a leaking cylinder or cylinder valve (caused by corrosion, transportation or handling accidents, or other factors).” (id.). LES also notes: "Potential sources for runoff contamination during plant operation include an outdoor storage pad containing UBCs of depleted uranium. Although a highly unlikely occurrence, this pad is a potential source of low-level radioactivity that could enter runoff.” (ER 4.4-2 to -3). In recognition that lined basins will ultimately leak, there will be a Liquid Effluent Monitoring system (ER. 6.1.1.2), and the effluent basins will have leak detection systems. (ER at 4.4-3). Stormwater runoff will flow to an unlined basin and infiltrate to the alluvium (LES Ans. 9), and sewage will flow to the ground as well (id. 10).

Moreover, LES has already introduced the subject of groundwater impacts by examining in some detail the underlying strata and groundwater resources, flow, and recharge. (See ER 3.4, pages 3.4-1 through 3.4-15; Tables 3.4-1 through 3.4-5; Figures 3.4-1 through 3.4-7). Such examination is called for in the ER. (See NUREG-1748, Environmental Review Guidance for Licensing Actions Associated with NMSS Programs (2003) at 6-7). LES states in the ER: “This information provides the basis for evaluation of any potential facility impacts on surface water, groundwaters, aquifers, water use and water quality.” (ER 3.4-1). LES also undertook a “groundwater exploration and sampling program.” (id.). LES drilled 14 boreholes and installed three monitor wells in the Chinle Formation. (SAR 3.2-17, 3.2-20; ER 3.4.1.1.1, ER 3.3-2, Fig. 3.3-5, 3.4-6). This work and these plans plainly seek to determine how contaminants might be carried, were they released.

In *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 192 (April 22, 1998), the board admitted contentions very similar to those made here:

“Contention: The Applicant has failed to adequately assess the health, safety, and environmental effects from the construction, operation and decommissioning of the ISFSI and the potential impacts of transportation of spent fuel on groundwater, as required by 10 CFR §§ 72.24(d), 72.100(b) and 72.108, with respect to the following contaminant sources, pathways, and impacts:

1. Contaminant pathways from the applicant’s sewer/wastewater system, the retention pond, facility operations and construction activities.
2. Potential for groundwater and surface water contamination.
3. The effects of applicant’s water usage on other well users and on the aquifer.
4. Impacts of potential groundwater contamination on downgradient hydrological resources.

* * *

Ruling: Except as it seeks to litigate the groundwater impacts of spent fuel shipments on transportation routes, which is inadmissible as an impermissible challenge to the Commission’s regulations or rulemaking-associated generic determinations, including 10 CFR Part 71, . . . this contention is admitted as supported by bases establishing a genuine material dispute adequate to warrant further inquiry.”

See also *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), LBP-91-41, 34 NRC 332, 351-52 (1991). This is a similar situation, and the contention should be admitted in this case. NRC Staff recently issued its Scoping Summary Report (April 23, 2004), which underscores “the requirement for NRC to weigh all environmental effects of the proposed action, including the degradation, if any, of water quality, and to consider alternatives to the proposed action that are available for reducing adverse effects.” (at 16). Petitioners’ Contention 1.1 seeks such an inquiry and should be admitted.

1.2 Contention: Petitioners contend that the ER contained in the application does not contain a complete or adequate assessment of the potential environmental impacts of the proposed project upon water supplies in the area of the project, contrary to 10 CFR 51.45.

NRC Staff Answer: Staff does not oppose the admission of this contention, limited to matters stated as bases, i.e., data concerning a long-term shortage and withdrawals that exceed recharge. (Staff Ans. 10).

LES Answer: LES opposes admission of this contention, stating that it falls beyond the scope of the proceeding. (LES Ans. 16). LES states that the NEF has obtained contractual commitments to supply water from municipalities and that any issues regarding NEF's water usage are "within the purview of the municipal authorities and beyond the scope of this NRC proceeding."

Discussion: Plainly, a federal agency must examine the environmental impacts of its decisions, even when other governments are involved. Here, NRC's action may lead to additional withdrawals of water. NRC Staff fully understands the need to examine the impact on water resources of such a decision. In its Scoping Summary Report, Staff states: "Water resources. The draft EIS will assess the potential impacts on groundwater quality and water use due to the implementation of the proposed action." (at 17). Contention 1.2 should be admitted.

2. Waste storage and disposal

2.1 Contention: Petitioners contend that LES does not have sound, reliable, or plausible strategy for disposal of the large amounts of radioactive and hazardous Depleted Uranium Hexafluoride ("DUF₆") waste that the operation of the plant would produce. See NRC Order, 69 Fed. Reg. 5873, 5877 (Feb. 6, 2004).

NRC Staff Answer: Staff does not oppose admission of this contention, limited as stated in the bases. Staff relates that Petitioners claim that LES has stated that a uranium mine may be available for use as a disposal site, but in fact it is not available, that LES reports discussions with a potential conversion supplier, but without result, and that "LES has provided

no substantive support for plausibility from this representation.” (Staff Ans. 13). Staff concludes that there is “a genuine question as to the adequacy of the application.” (id.). Further, Petitioners, by providing a detailed analysis for their conclusion that depleted uranium cannot be considered low-level waste, have raised a genuine issue material to the proceeding. (id. 14).

LES Answer: LES opposes admission of this contention, asserting that under the hearing order, LES need only demonstrate that the DUF_6 is “waste,” and the option of transferring it to the U.S. Department of Energy (“DOE”) under § 3113 of the United States Enrichment Corporation (“USEC”) Privatization Act becomes a “plausible strategy,” and LES need show nothing further about waste disposal. Thus, LES reasons, all contentions on such subject are inadmissible. (LES Ans. 18-19).

Discussion: LES has asserted (ER 4.13.3.1.3, at 4.13-6) that it has two “plausible strategies” for disposition of DUF_6 . LES asserts that its “preferred option” is “private sector conversion and disposal,” and it relates its discussions with companies that might furnish such services. (ER 4.13-8). LES states that DOE conversion and disposal pursuant to § 3113 of the USEC Privatization Act is another “plausible strategy.” (ER 4.13-8). Petitioners wish to demonstrate, based on analyses by Dr. Arjun Makhijani, that there is no substantive support for these supposed “plausible strategies.” LES argues that, under the hearing order (69 Fed. Reg. 5873) (Feb. 6, 2004), any such proofs constitute “impermissible challenges to the Commission’s Hearing Order” (LES Ans. 22). LES even asserts that, to meet the “plausible strategy” test, it need only show that DUF_6 constitute 10 CFR Part 61 “wastes.” (LES Ans. 18) LES’s position seriously overstates the effect of the hearing order.

A “plausible strategy” for disposition of uranium tails must be shown, partly because decommissioning cost estimates must have a reasonable basis: “For the regulation [on

decommissioning costs and funding] to have meaning the cost estimate should contain reasonable estimates for an adequately described decommissioning strategy.” In re *Louisiana Energy Services, L.P.* (Claiborne Enrichment Services), LBP-91-41, 34 NRC 332, 338 (1991) (quoted at LES Ans. 21). “Thus, in assessing the plausible tails disposal strategy adopted by the Applicant as part of its decommissioning funding plan, we must first determine whether the funding plan contains a reasonable or credible plan to dispose of the DUF₆ tails generated at the CEC and then determine whether the Applicant’s cost estimates for the components of the plan are reasonable.” *Louisiana Enrichment Services, L.P.* (Claiborne Enrichment Center), LBP-97-3, 45 NRC 99, 105 (1997). LES must have a decommissioning cost estimate, based on an adequately described strategy, for private deconversion and disposal as well as for a DOE dispositioning strategy. (id. 109). On the issue of absence of a “plausible strategy,” Petitioners wish to make the following points:

A. Petitioners seek to show that the private deconversion and disposal strategy has no plausibility. For example, no private investors, but only the Federal Government, have chosen to construct a deconversion facility for DUF₆ generated by DOE. LES claims that it need not show that a private deconversion facility makes economic “sense.” (LES Ans. 23). But, surely, the Commission’s February 6 hearing order did not exclude proof of the costs required for private deconversion, since a decommissioning cost estimate “should contain reasonable estimates for an adequately described decommissioning strategy.” (34 NRC at 338).

LES also objects to Petitioners’ point that an LES-built on-site deconversion facility would be far more “plausible” and would avoid transportation risks. (LES Ans. 25-26). However, the likelihood of dispersal of hazardous materials in a transportation accident is supported by the DOE PEIS, cited by LES. (*DOE Final Programmatic Environmental Impact*

Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride (1999) (“DOE PEIS”) at Appx. J, sections J.3.4.1, J.3.4.2 and Tables J8, J9. In addition, the reactivity of UF₆ is well known: “When UF₆ comes into contact with water, such as water vapor in the air, the UF₆ and water react, forming corrosive hydrogen fluoride (HF) and a uranium-fluoride compound called uranyl fluoride (UO₂F₂).” DUF₆ Guide (<http://web.ead.anl.gov/uranium/guide/ucompound/forms/index.cfm>).

B. LES advanced the claim in its application that General Atomics may have “access to an exhausted uranium mine . . . where depleted U₃O₈ could be disposed” (ER 4.13-8), and Petitioners wish to respond with evidence that the mine (the Cotter Mine in Colorado) is not available for use. Now LES claims (Ans. 27-28) that such fact is immaterial to the “plausible strategy” requirement—as though the fact that the sole disposal location identified by LES *cannot be used* for disposal has no bearing on “plausibility” or the cost of disposal. LES would also forestall proof that DOE is no nearer a solution to its own massive DUF₆ disposal problem (LES Ans. 29), although the lack of progress toward disposal should indicate the gravity of the problem. Clearly, such facts bear directly on plausibility of LES’s preferred strategy.

C. LES stated in its application that it has held discussions with Cogema about a private deconversion facility (ER 4.13-8). In response, Petitioners would show that LES has failed to secure a commitment from Cogema to build such a plant, and LES objects that the lack of a “substantive commitment” is irrelevant. (LES Ans. 30). Petitioners would simply show that the discussions with Cogema, which LES considered important enough to include in its application, have had no substantive outcome. Again, such fact bears on plausibility of LES’s strategy.

D. LES has claimed that the DOE “dispositioning” option is also a “plausible strategy” (ER 4.13-8). Petitioners propose to show that this alternative, under which DUF₆ is transferred

to DOE for disposal *if* it is found to be low-level waste, faces the problems that (1) NRC has not made, and may not make, such determination, (2) no facilities exists to deconvert the DUF₆ and to dispose of it, and (3) DOE has not yet determined the costs of such service. Further, for several reasons a NRC determination that the DUF₆ is 10 CFR § 61.2 low-level waste “acceptable for disposal in a land disposal facility” is not plausible, such as the fact that the waste is not appropriate for shallow land burial or 100-year institutional control.

Petitioners also propose to show that DUF₆ has most of the characteristics of transuranic waste and should be marked for deep disposal. LES asks to exclude all such matters, claiming that they would contradict the hearing order and NRC regulations. (LES Ans. 32-37). But nothing in the hearing order says that the DUF₆ constitutes “waste” or low-level waste or what the conversion and disposal cost would be, and the regulations do not so state. To the contrary, LES’s argument reflects its own interpretation of the regulations, which NRC has not espoused. In reality, LES is improperly asking the Commission to decide the merits of this issue at the stage of admitting contentions. At present the Commission is simply determining which issues may be addressed. In re *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station), CLI-91-12, 34 NRC 149, 156 (1991). Nothing in the regulations or the record of this proceeding bars consideration of evidence bearing upon whether tendering DUF₆ to DOE is a “plausible strategy.”

2.2 Contention: Petitioners contend also that the LES ER lacks adequate information to make an informed licensing judgment, contrary to the requirements of 10 CFR Part 51. As set forth below, the ER fails to discuss the impacts of construction and operation of deconversion and disposal facilities that are required in conjunction with the proposed enrichment plant.

NRC Staff Answer: Staff does not oppose admission of this contention with regard to the environmental impacts of construction and operation of a private deconversion facility, which is one of the strategies proposed by LES. Staff opposes admission of this contention insofar as it concerns the impacts of construction and operation of a repository, which LES does not propose as a disposal option. (Staff Ans. 14).

LES Answer: LES opposes admission of this contention, both as to the deconversion facility and as to a repository. (LES Ans. 37-42).

Discussion: Petitioners wish to show that the ER is incomplete for failure to discuss impacts of LES's DUF₆ disposal strategies. "Where the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient for the intervenor to explain why the application is deficient." In re *Georgia Power Co.* (Vogle Electric Generating Plant), CLI-93-16, 38 NRC 25, 41 (1993).

NRC Staff recognizes that the Environmental Impact Statement must discuss such issues:

"Depleted uranium disposition. The draft EIS will address concerns about the depleted uranium hexafluoride material, or tails, resulting from the enrichment operation over the lifetime of the proposed plant's operation. These concerns include the safe and secure storage and ultimate removal of this material from New Mexico, and potential conversion of UF₆ to U₃O₈ and ultimate disposition." Scoping Summary Report, April 23, 2004, at 17.

Petitioners wish to present the following points:

A. Petitioners would show that the environmental impacts of construction and operation of a deconversion plant have not been set forth, and in particular the impacts of disposal of contaminated hydrofluoric acid ("HF") have not been examined. LES argues that it has not been established that contaminated HF would need to be disposed of and that it has referred to the discussion of the impacts of a deconversion facility in the DOE PEIS. (LES Ans. 37). It is true that the hearing order states that NRC Staff may refer to the DOE EIS in preparing the staff's

EIS (69 Fed. Reg. at 5877); however, the order does not relieve LES of the responsibility to prepare a complete ER. LES admits that the “ER does not specifically discuss deconversion-related impacts” (LES Ans. 39) and refers at length to the DOE PEIS (LES Ans. 38-39). That document analyzes impacts of a generic deconversion plant that differs markedly in volume from the plant envisioned by LES (2300 cylinders/year; see DOE PEIS, Appx. F at F-4, or 28,000 metric tons per year, Hatem Elyat et al., “Cost Analysis Report for the Long-Term Management of Depleted Uranium Hexafluoride,” UCRL-AR-127650, May 1997) (“LLNL Report”) at 97) and does not address the issue of treating or disposing of contaminated HF (id. F-12). Instead, LES assumes that the anhydrous HF byproduct generates revenue. (ER 4.13-17). The contention should be admitted.

B. Petitioners have previously explained in detail why DUF_6 should be disposed of as GTCC waste in a deep geologic repository (Pet. 28-31). Petitioners point out here that the impacts of construction and operation of such a repository are not examined in the ER. LES concedes that the ER does not discuss such impacts and asserts that a repository is not needed. (LES Ans. 41). However, if a repository is needed, plainly there must be ER and EIS support for its selection. LES is wrong when it interprets the hearing order as determining this issue; that order is expressly conditioned on a determination that DUF_6 is a low-level waste, a decision that has not been made and, petitioners submit, could not correctly be made. (69 Fed Reg. at 5877).

LES misunderstands the second part of this contention. Petitioners are not claiming a cumulative impact of production of additional DUF_6 waste. Rather, Petitioners assert that the impact of generation of an additional 132,942 metric tons of DUF_6 waste is not adequately addressed.

3. Decommissioning costs

3.1 Contention: LES has presented estimates of the costs of decommissioning and funding plan as required by 42 U.S.C. 2243 and 10 CFR 30.35, 40.36, and 70.25 to be included in a license application. See SAR 10.0 through 10.3; ER 4.13.3. Petitioners contest the sufficiency of such presentations, as set forth more specifically herein.

NRC Staff Answer: Staff does not oppose this contention insofar as it is based upon the insufficiency of the contingency factor. It finds the remaining bases insufficiently based and opposes them. (Staff Ans. 15).

LES Answer: LES opposes this contention, asserting that no supporting information is provided (LES Ans. 52-60).

Discussion: Petitioners point out several bases for the inadequacy of the cost estimates for decommissioning. They are as follows:

A. Cleanup effort depends largely upon the length of time a plant has been in operation, and to use short-term pilot projects as the model for cleanup effort is erroneous with respect to a plant that will operate for 30 years. This opinion is offered by William J. Weida, who has published several articles concerning the economics of weapons programs (see NIRS/PC Petition at 69-71). Petitioners submit that the experience underlying the judgment expressed provides the needed support.

B. The contingency cost allowance of 10% and the cost of capital of 6% are inadequate, and the estimates should allow for the classification of certain waste as higher level than low-level waste. LES contends that its use of these figures is based upon “10 years of Urenco experience” (LES Ans. 56), but it declines to regard Dr. Weida’s years of study of the economics of major manufacturing (Pet. 68-71) as basis for disagreement. Petitioners respectfully point out

that Dr. Weida's estimate is at least as well-supported as those presented by LES. LES erroneously argues the merits of its position (LES Ans. 52-60), but such arguments should be postponed to the hearing on the merits.

4. Costs of management and disposal of depleted UF₆.

4.1 Contention: Petitioners contend that LES's application seriously underestimates the costs and the feasibility of managing and disposing of the depleted UF₆ ("DUF₆") produced in the planned enrichment facility.

NRC Staff Answer: NRC Staff does not oppose admission of this contention, finding sufficient specificity and basis to raise genuine issues of material fact and law. (Staff Ans. 16).

LES Answer: LES opposes admission of this contention, asserting that insufficient factual basis is advanced. (LES Ans. 68-80)

Discussion: Petitioners would show that LES's estimates of the costs of deconversion, transportation, and disposal of DUF₆ have been seriously understated. We deal in order with the matters advanced in support of this contention.

A. Petitioners assert that LES's reliance on median values from the LLNL Report, rather than considering values at the high end of the range, is misleading. The judgment expressed is that of William J. Weida, who must be acknowledged an economic expert. LES may disagree with the opinion, but it can hardly be said that the criticism is insufficiently clear. Further, the LLNL Report apparently assumes that DUF₆ waste is low-level; this assumption has been challenged in detail by Petitioners (Contention 2.1 Basis D), and its use undercuts cost estimates based upon such assumption.

B. Petitioners note that the transportation distances used in the LLNL Report are inappropriate to LES's deconversion and disposal plans. LES asserts that, in the final analysis,

travel distance makes little difference. (LES Ans. 70). Petitioners believe that distance is more significant, but in any case, it is not the time to litigate the merits of contentions; the issue is admissibility. In re *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station), CLI-91-12, 34 NRC 149, 156 (1991). Clearly, the use of incorrect travel distances discredits LES's reliance on the LLNL Report, and the basis should be allowed.

C. Petitioners have pointed out that contaminated steel is not marketable, and the LLNL Report assumes that such materials would be recyclable. LES challenges Petitioners to show why the steel would be contaminated. (Ans. 70-71). The fact cannot be asserted with certainty; however, there is clearly a probability of such contamination, and an analysis that ignores such risk is defective.

D-F. Petitioners point out that revenue projections by LLNL, in calculating deconversion costs, contain major uncertainties, viz: they assumed ready markets for byproducts of deconversion, which markets may not exist. Further, some of the byproducts may be contaminated and require disposal as low-level waste. Similar issues have been raised previously in connection with LES's projections of deconversion costs. See *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), LBP-97-3, 45 NRC 99, 115-19 (1997). LES does not quarrel with these points but claims that it does not rely upon such revenues. (Ans. 71-75). However, the ER discusses at length the cost analyses of deconversion contained in the LLNL Report, covering both the anhydrous hydrogen fluoride ("AHF") process and the hydrogen fluoride ("HF") neutralization process (ER 4.13.3.1.6 at 4.13-17). The ER includes tables that show costs of deconversion using both processes (Tables 4.13-2, -3, -5). Nowhere in the ER does LES direct the Commission to disregard one process in favor of another. Now LES claims that it "focused on" the AHF process (LES Ans. 72). However, LES has not withdrawn any part

of the ER nor its reliance on the LLNL Report, which concerns both processes. LES's attempt to forestall contentions about the uncertainties of the LLNL estimates cannot render the issue immaterial. These contentions should be admitted.

G. Petitioners raise several problems with the “preferred strategy” of private deconversion, i.e., the nonexistence of such facility; the unavailability of DOE deconversion facilities, which will be occupied with DOE's needs for 25 years; the higher cost of deconverting at the rate required by LES; and the uncertainty of LES's ongoing need for deconversion. For instance, the LLNL Report states that a reduction in throughput from the 28,000 metric tons per year required by DOE to 7,000 metric tons per year—approximately LES's needs (ER 4.13-19)—barely reduces total deconversion costs (Table 6.4) or disposal costs (Table 6.11). LES asserts that all of these very real problems are inadmissible, because the hearing order states that LES's strategy need only be “plausible,” and LES need not show that its plan will actually work. But the hearing order does not block inquiry into the reality of LES's hypothetical disposal plans. Moreover, this contention specifically addresses LES's cost estimates. LES's decommissioning funding plan must contain a cost estimate for decommissioning. “For the regulation to have meaning the cost estimate should contain reasonable estimates for an adequately described decommissioning strategy.” *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), LBP-91-41, 34 NRC 332, 338 (1991).

LES asserts that it need only cite § 3113 of the USEC Privatization Act, imposing on DOE the “statutory obligation to accept for disposal DUF₆ generated by NRC-licensed facilities” (LES Ans. 77), and there can be no further litigation about the “plausible strategy” or the costs of waste disposal. But LES cannot rely upon the DOE option unless there is first (1) a determination that the DUF₆ is “waste” and (2) a determination that the DUF₆ is low-level waste.

No such determinations have been made. Moreover, such an argument overlooks LES's obligation to furnish a cost estimate for decommissioning, and it wholly ignores LES's claim that private deconversion and disposal is LES's "preferred strategy" (ER 4.13-8). Contrary to LES's assertion, the hearing order has not resolved all of the issues of this case.

H. Petitioners contend that the mine disposal option advanced by LES is not plausible, because the single mine mentioned in the ER—the Cotter Mine in Colorado—is not available and, more generally, a mine would not be acceptable for GTCC waste, and it is not acceptable to bury DU_3O_8 in 55-gallon drums in a mine, because most mines are wet and will corrode the drums. LES states that such contentions are irrelevant, because it need not identify a specific mine, the waste is not GTCC, and there is no evidence that a mine would be wet. But certainly it is relevant to the "plausibility" of LES's strategy that LES's sole example of its preferred disposal method is not available. Further, Petitioners explain in connection with Contention 2.1 why DUF_6 should be classified as GTCC waste. Last, concerning the wetness of uranium mines, the DOE PEIS states: "For purposes of analysis, if no sustained effort was made to maintain a disposal facility, failure of the facility (defined as the release of uranium material to the surrounding soil) was assumed to occur 100 years after closure (see Appendix I). This failure could be caused by natural degradation of the disposal structures over time, primarily from physical processes such as the intrusion of water." (at 5-91, -92). Water, in other words, should be assumed.

I. Petitioners have pointed out that one of the disposal alternatives contained in the ER—the engineered trench method—would not be acceptable. LES contends that the contention is not material, because LES has not cited it as a proposed or "plausible" strategy (LES Ans. 79-

80). However, the alternative is presented as part of LES's NEPA analysis in its ER, and it is certainly material to the completeness of the NEPA presentation by LES.

5. Need for the facility; impact on national security

5.1 Contention: Petitioners contend that the Environmental Report ("ER") does not adequately describe or weigh the environmental, social, and economic impacts and costs of operating the National Enrichment Facility ("NEF") (See ER 1.1.1 et seq.).

NRC Staff Answer: The Staff does not contest the admission of this contention, supported by Bases A, B, and F. Staff states that Bases C, D, and G do not set forth sufficient information to show a genuine dispute. (Staff Ans. 16-18).

LES Answer: LES opposes this contention with regard to all bases. (LES Ans. 80-92).

Discussion: Petitioners show, based on analyses by David Osterberg, that the cost-benefit analysis required by the National Environmental Policy Act, 42 U.S.C. § 4321, *et seq.* ("NEPA"), has not been fully presented. "NEPA is generally regarded as calling for some sort of weighing of the environmental costs against the economic, technical, or other public benefits of a proposal." In re *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 88 (1998). Moreover, the EIS must "to the fullest extent practicable, quantify the various factors considered." 10 CFR § 51.71(d). Such analysis of "public benefits" cannot be limited to economic impacts and should account for a range of benefits sought by national policy. (*LES*, 47 NRC at 95-96). The EIS must "indicate what other interests and considerations of Federal policy, including factors not related to environmental quality if applicable, are relevant to consideration of environmental effects." 10 CFR § 51.71(d).

LES argues that NEPA does not require a "business case" supporting the viability of its project (LES Ans. 85). However, the impacts to be considered in NEPA analysis include (but

are not limited to) the market and price effects of a new plant; thus it is pertinent under NEPA to ask whether the new plant will be economically viable at various different price levels. (*LES*, 47 NRC at 94).

NRC Staff recognizes that a full analysis of reasonable alternatives is necessary:

“Alternatives. The draft EIS will describe and assess the no-action alternative and other reasonable alternatives to the proposed action. Other reasonable alternatives to the proposed action will be considered such as alternative sites, enrichment sources, or technological alternatives to the proposed centrifuge technology.” Scoping Summary Report, April 23, 2004, at 17.

Bases for Petitioners’ contention that the NEPA cost-benefit analysis in the ER is inadequate are as follows:

A. Petitioners note that *LES* has assumed a shortage of enrichment capacity, rather than demonstrating it. Thus, unless there is some need for the added capacity of the NEF, the environmental costs of constructing and operating the NEF may have no compensating benefit. *LES* objects to the contention, stating that to focus on “supply and requirements” is “beside the point.” (*LES* Ans. 87). However, under *LES*, 47 NRC 77, it is distinctly relevant to examine the effect of a new facility on the enrichment market.

B. Petitioners point out that *LES* has not shown that United States nuclear facilities will be unable to obtain enrichment services without the NEF. Such a claim raises an inadequacy in the cost-benefit analysis. See *LES*, 47 NRC at 88-96. There, the Commission discussed the Claiborne project’s aim to obtain 15% to 17% of the U.S. market. (47 NRC at 92). It seems clear that discussion of the effect of a new plant on U.S. customers should be included in the ER.

C. Petitioners assert that *LES*’s demand projections fail to account for plant license non-renewals and shortened extensions. Staff and *LES* have pointed out that the ER in fact projects such reductions in demand. (ER 1.1.2.1). Petitioners therefore withdraw this basis.

D. Petitioners state that LES’s projections erroneously assume that the NEF will participate in enrichment sales, without showing that NEF will enjoy a competitive advantage, such as a cost advantage. LES objects that the Commission should not inquire as to its “economic viability” (LES Ans. 90). However, NEPA cost-benefit analysis includes the market impact (i.e., on price and market share) of a new facility, and such impact is largely a factor of the facility’s cost advantage or lack of same. If no cost advantage is expected, no significant impact on price and competition can be expected.

E. Petitioners also state that the analysis in the ER fails to show that the existing level of foreign enrichment supply has adverse effects. Petitioners submit that any cost-benefit analysis must address the concrete benefits of an additional domestic enrichment supplier. LES repeatedly recites the need for a new domestic enrichment plant (LES Ans. 81-82, 87, 88, 90-91, 93, 96, 100), but it fails to specify or quantify the economic, social, or technical benefits of having such a plant. If the benefits are real, LES should be able to estimate the benefits.

F. Petitioners assert that LES has failed to show, as with a business plan, that the NEF will enjoy a competitive position in which it can make sales in the face of other suppliers and thereby contribute some benefit. This basis overlaps with Basis D. Before seeking a license, LES presumably studied the costs of other suppliers and the responsiveness of customers to price and other factors, to satisfy itself that utilities would buy SWUs from the NEF. The NEPA analysis underlies NRC’s decision whether to license this plant. If NRC is to make an informed decision, it must know the benefits of this project, viz: whether the project will produce SWUs better, faster, or cheaper—with the benefits quantified—than others can do. There is no benefit to another domestic enrichment plant if it cannot compete.

G. Petitioners point out that the cost-benefit presentation fails to examine the impact of the proposed plant upon the “megatons-to-megawatts” program, established by treaty with Russia, whereby Russian highly-enriched uranium (HEU) is downblended for use in U.S. power reactors, thereby reducing Russian inventories of weapons-grade uranium. Petitioners cite several U.S. government statements supporting the program, which serves important national security objectives. (Pet. 41-42). The addition of enrichment capacity would tend to slow such program, and Petitioners submit that such a market impact should be examined as part of the cost-benefit analysis. LES states that the ER assumes that the downblending program will continue without reduction and asserts that “the two activities are entirely unrelated” (LES Ans.92), but to assume no impact is no substitute for analysis. One of the costs of addition of enrichment capacity is reduction, to some extent, of this important program. The impact should be assessed and quantified.

5.2 Contention: Petitioners also contend that the operation of the proposed LES facility would pose an unnecessary and unwarranted challenge to national security and to global nuclear non-proliferation efforts.

NRC Staff Answer: NRC Staff opposes this contention on the ground that Petitioners have made no specific challenges to security procedures, Urenco’s security lapses in Europe were not within NRC jurisdiction, and nonproliferation issues are not required to be covered in the application. (Staff Ans. 18-19).

LES Answer: LES opposes this contention on the ground that it goes beyond the scope of environmental review. (LES Ans. 92-102).

Discussion: Petitioners have sought to show that the addition of a further centrifuge enrichment plant, operated by a partnership dominated by Urenco, to the world’s inventory

would have adverse effects in causing proliferation of weapons technology. Certainly, weapons proliferation ultimately has the most severe environmental effects, since it can lead to war, and such effects may be beyond measurement or assessment. But proliferation also has lesser and more immediate costs, such as the costs of protection against further proliferation or weapons use. If the cost-benefit analysis is to consider benefits such as a broadening of the sources of supply and technological advances (*LES*, 47 NRC at 95), it must also account for costs such as additional proliferation risk.

Put another way, the no-action alternative must be explored fully, so that the benefits of *not* building the NEF are fully explored, including the reduced proliferation risk. The no-action discussion cannot remain “virtually silent on the benefits of not building it”; rather, the reader must “readily discern how the agency weighed the various benefits and costs of not building the facility.” (*LES*, 47 NRC at 98). Petitioners propose the following bases for this contention:

A. Petitioners contend that the ER and EIS should discuss the benefits of using, in lieu of NEF production, downblended Russian uranium and production of the USEC centrifuge plant. Benefits include non-proliferation benefits and the reduced need for uranium mining, milling, enrichment, and waste generation. *LES* asserts that the ER assumes that use of downblended uranium will continue and the USEC centrifuge plant will operate (*LES* Ans. 93-94). Such assumptions are not an analysis of the actual impact. *LES* argues that, in considering needs, NRC may only weigh *LES*'s business needs and goals, but it is established that the cost-benefit analysis must balance numerous nonprice and other social benefits, *LES*, 47 NRC at 99-100, which should include nonproliferation and reduced uranium production impacts. See *Citizens Committee to Save Our Canyons v. U.S Forest Service*, 297 F.3d 1012, 1030 (10th Cir. 2002).

LES tells NRC that “for the ‘no action’ alternative, there need not be much discussion” (LES Ans. 95), but, to the contrary, NRC has called for full treatment of “how the agency weighed the various benefits and costs of not building the facility” (LES, 47 NRC at 98).

B. Petitioners assert that the no-action alternative should include increasing the amount and pace of downblending of HEU, with the benefits of reduced mining and proliferation impact. Petitioners cite specific supply sources that would enable U.S. enrichment demand to be met. LES responds that it considered increases in sales of downblended uranium but rejected the alternative because “it does not serve LES’s stated purpose and need for the facility—assurance of security and diversity of supply for domestic purchasers.” (LES Ans. 96). So stating, LES confuses its corporate aims with the public costs and benefits to be weighed under NEPA. NEPA requires “a weighing of the environmental costs against the economic, technical, or other public benefits of a proposal.” LES, 47 NRC at 88. Neither is it relevant that existing agreements with Russia limit the purchase of downblended uranium (LES Ans. 96-97), for NEPA alternatives are not constrained by existing law. *City of Angoon v. Hodel*, 803 F.2d 1016, 1021 n. 2 (9th Cir. 1986), *cert. denied*, 484 U.S. 870 (1987); *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 834-36 (D.C. Cir. 1972).

C. Petitioners point out that an additional 600 metric tons of U.S. HEU could be declared surplus and used for downblending, an alternative that should be considered. LES rejects this alternative as “highly speculative” but acknowledges that such amounts of HEU are reported to exist. (LES Ans. 98). This alternative, as an aspect of the no-action alternative, should be considered for its non-proliferation benefits. Petitioners note that on May 7, 2004, DOE Secretary Abraham announced that his Department would undertake its own study of additional downblending of U.S. HEU:

“Third, we need to explore whether we can down-blend substantial quantities of our HEU holdings. Potentially, this could yield a number of security benefits, but the programmatic impact of a major campaign of down-blending needs to be assessed. I have also directed NNSA to conduct a study to assess the down-blending of large quantities, perhaps as much as 100 tons, of the HEU stored at Y-12 and to assess the programmatic impacts of such a large campaign.” Remarks of Sec. Abraham at Savannah River Site, May 7, 2004.

Thus, it is not correct to describe downblending of U.S. HEU as “speculative,” since it is actively being considered by DOE.

D, E, F, H. Petitioners cite several other alternatives whose costs and benefits should be considered in NEPA analysis, particularly as they affect proliferation risks. These include (D) the benefits of declaring additional amounts of U.S. or Russian HEU surplus and available for downblending, (E) the adverse impact of constructing two U.S. centrifuge plants, (F) the adverse impact of construction of a centrifuge plant upon international nonproliferation objectives, and (H) the proliferation impact of additional centrifuge facilities in light of the possible secret use of such plants for weapons production. LES argues that Petitioners improperly claim that such matters simply “ought to be considered” (LES Ans. 99). To the contrary, Petitioners specifically request that the no-action alternative account for such benefits of foregoing the NEF project. At present the no-action discussion (ER 2.1.1, 2.4, 8.4) is “virtually silent on the benefits of not building it” (LES, 47 NRC at 98), contrary to NRC decisions. It is no answer that NRC has no mandate to achieve nonproliferation (LES Ans. 99). Many impacts must be considered in an EIS that are outside the authority of the decision-making agency (e.g., socioeconomic impacts, environmental justice, LES, 47 NRC at 88-89, 94-96, 100-09). NRC is charged with considering the public costs and benefits of the proposed project, including impacts on the proliferation of weapons technology.

G. Petitioners contend that NRC must consider, in connection with its national security findings, the history of security lapses in Urenco’s European facilities. See, e.g., Boer, J., H. van der Keur, K. Koster & F. Slijper, *Urenco and the Proliferation of Nuclear Weapons Technology* (2004). The problem raised here, LES correctly notes (LES Ans. 102), concerns the management character of Urenco, a company that has permitted its employees and contractors to release centrifuge technology to non-nuclear states. Urenco clearly controls LES. The management failures in the European Urenco plants occurred at centrifuge enrichment facilities like the NEF, and LES has not presented any new management structure or any commitment to overcome the security lapses that have led to extremely dangerous nuclear proliferation. There is a “direct and obvious relationship between the character issues and the licensing action in dispute.” In re *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station), CLI-01-24, 54 NRC 349, 365 (2001). See also In re *Georgia Institute of Technology* (Georgia Tech Research Reactor), CLI-95-12, 42 NRC 111 (1995). LES’s omission to mention, in the application, the failures of Urenco management in operating precisely the type of facility planned for NEF constitutes a material omission. In re *Georgia Power Co.* (Vogtle Electric Generating Plant), 38 NRC 25, 41 (1993).

6. Natural gas-related accident risks not adequately accounted for

6.1 Contention: Petitioners contend that the Environmental Report (“ER”) does not contain a complete or adequate assessment of the potential environmental impacts of accidents involving natural gas transmission facilities. Further, there has been no Integrated Safety Analysis (“ISA”) based on module-specific data. 10 CFR 51.45 has not been satisfied.

NRC Staff Answer: The Staff does not oppose this contention, except as to Basis B, concerning possible terrorist attacks. (Staff Ans. 19-20).

LES Answer: LES opposes this contention as to all bases. (LES Ans. 92-110).

Discussion: Petitioners raise questions about the safety of the proposed NEF as it is affected by the presence of natural gas pipelines within 500 feet of the facility. Several safety aspects are in issue:

A. Petitioners point out that a gas pipeline leak or explosion could cause a release of UF₆, and that LES has incorrectly assigned a low (10^{-5}) probability to such an explosion based on an insufficient analysis, carried out without a detailed facility design, and that no analysis was made of the effectiveness of fire barriers. LES asserts that its analysis was adequate, using data from a Urenco plant (LES Ans. 104), and that its design has barriers. But Petitioners have made very specific contentions about the analysis that resulted in a low probability; LES is simply seeking to prevent their admission by, in effect, presenting a premature summary disposition motion. But it is not the time to address the merits but only the adequacy of the contentions, which are clear and specific. In re *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station), CLI-91-12, 34 NRC 149, 156 (1991). Basis A should be admitted.

B. Petitioners have asserted that LES's probability calculation incorrectly does not account for recent reassessments of the likelihood of terrorist attacks. Petitioners are willing to withdraw this basis for the contention.

C. Petitioners have shown that, under Transportation Department regulations for "high consequence areas," the NEF design would be rated as unsafe, since regulations call for a larger explosion buffer zone around the natural gas pipelines than the NEF design provides. LES does not dispute the violation but states that the contention is beyond the scope of this proceeding (LES Ans. 108). LES also seeks to show that the potential explosion has been assigned a low

probability. However, it is not the time to address the merits but the contention. Petitioners submit that a prima facie showing of a safety violation is made and should be admitted.

D. Petitioners have asserted that a natural gas leak could penetrate the NEF and cause an explosion. Petitioners are willing to withdraw this basis for the contention.

Conclusion

No support should be given to LES's attempts to block public inquiry into the NEF. Questions remain about DUF₆ deconversion and disposal, costs of deconversion and disposal, groundwater impacts, the benefits and detriments of this facility, and other issues that should be resolved by this Commission before construction may proceed. Petitioners respectfully submit that the Board should admit the above-listed contentions for hearing in this matter.

Respectfully submitted,

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May 10, 2004

CERTIFICATE OF SERVICE

Pursuant to 10 CFR § 2.305 the undersigned attorney of record certifies that on May 10, 2004, the foregoing Reply by Nuclear Information and Resource Service and Public Citizen to Answers of Nuclear Regulatory Commission Staff and Louisiana Energy Services, L.P. was served by electronic mail and by first class mail upon the following:

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