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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

November 14, 2005 (7:47am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of

Docket No. 70-3103

Louisiana Energy Services, L.P.
National Enrichment Facility

ASLBP No. 04-826-01-ML

MOTION ON BEHALF OF INTERVENORS
NUCLEAR INFORMATION AND RESOURCE SERVICE AND PUBLIC CITIZEN
FOR ADMISSION OF SUPPLEMENTAL AND ADDITIONAL LATE-FILED
CONTENTIONS UNDER 10 CFR 2.309(c)

Preliminary statement

This Motion is submitted on behalf of Intervenors Nuclear Information and Resource Service and Public Citizen ("NIRS/PC"), to amend and supplement NIRS/PC Contention EC-4 in view of (a) the decision of the Nuclear Regulatory Commission (the "Commission") dated October 19, 2005, *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-20, __NRC__ (Oct. 19, 2005) ("CLI-05-20"), holding admissible contentions proposed by NIRS/PC on October 20, 2004 and on February 2, 2005, (b) issuance of the Final Environmental Impact Statement ("FEIS") in June 2005, and (c) evidence submitted at the hearing held on October 24 through 27, 2005.

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Factual background

On October 19, 2005, the Commission remanded certain contentions advanced by NIRS/PC involving the “impacts” discussion in the LES Draft Environmental Impact Statement (“DEIS”), for “further consideration and appropriate action” before the Atomic Safety and Licensing Board (the “Board”) (CLI-05-20, at 1). NIRS/PC advanced these contentions by motions dated October 20, 2004, and February 2, 2005. The Commission held that the contentions had been advanced by NIRS/PC in a timely manner (CLI-05-20, at 10 and note 19, 19-20) and that NIRS/PC had adequately supported their contentions with expert evidence and citations. (at 23). The Commission also held that NIRS/PC properly presented such contentions a second time on February 2, 2005, effectively reviving the contentions presented on October 20, 2004. (id.).

In its October 19, 2005 decision the Commission paraphrased the contentions in issue, stating that NIRS/PC had alleged that the DEIS impact analysis was incorrect or deficient because it assumed that LES’s depleted uranium may be disposed of in near-surface facilities (CLI-05-20, at 6), that NIRS/PC had argued that the Commission’s adoption of the Part 61 waste classification rules did not include an environmental analysis of disposal of depleted uranium in the large quantities involved, so that further additional environmental analysis was necessary to determine whether near-surface disposal was appropriate in this case, that depleted uranium more appropriately should be disposed of in a deep geologic repository comparable to the Waste Isolation Pilot Plant, that the DEIS failed to acknowledge or account for earlier statements by the NRC expressing concern or doubt about whether near-surface disposal of depleted uranium would meet the 10 CFR Part 61 performance objectives for land disposal, and that instead the DEIS simply assumes that disposal may occur at a near-surface disposal site. (CLI-05-20, at 8-

10). The Commission also noted that NIRS/PC had challenged the DEIS's estimates of the radiological releases from postulated mine disposal sites, claiming that the DEIS did not specify the models used and that the geologic dose estimates for LES's New Mexico facility were unlike any reported for LES's earlier Claiborne Enrichment Center application and therefore it was unclear whether the DEIS had used the same models used in the Claiborne proceeding. (CLI-05-20, at 10).

Thus, the Commission has held that (a) those environmental contentions that were advanced on October 20, 2004 and (b) those contained in the renewed motion advanced on February 2, 2005, "to the extent that it raises or elaborates upon essentially the same 'impacts' analysis arguments made following the DEIS," are remanded for further proceedings. (CLI-05-20, at 20 and see *id.* 15-18 notes 30-34). The specific contentions remanded for further proceedings are the following:

1. Contentions contained in NIRS/PC's October 20, 2004 motion to amend and supplement contentions:
 - a. Page 13, first full paragraph.
 - b. Pages 15-16, paragraphs A, B, and C.
2. Contentions contained in NIRS/PC's February 2, 2005 motion to amend and supplement contentions:
 - a. Page 8, first full paragraph.
 - b. Pages 9-10, paragraph B.
 - c. Pages 10-11, paragraph B.
 - d. Pages 11-12, paragraph C.
 - e. Pages 12-13, paragraph D.

f. Pages 16-17, paragraph J.

g. Page 17, paragraph K.

Under Commission practice, such contentions addressed to the Draft Environmental Impact Statement ("DEIS") are construed to address the Final Environmental Impact Statement ("FEIS") without the need for modification. 10 CFR 2.309(f)(2); *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 84 (April 3, 1998); *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382 (Dec. 18, 2002); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-26, 54 NRC 199, 208 (Sept. 20, 2001); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-23, 54 NRC 163, 172 n. 3 (Aug. 1, 2001). Thus, they will not be repeated here.

Argument

The contentions advanced in the present motion update the contentions previously made with regard to the DEIS, in light of matters contained in the FEIS, which was issued in June 2005. Thus, the contentions in this motion allege that the FEIS contains additional statements on certain of the subjects addressed by the October 2004 and February 2005 contentions, and that the FEIS discussion remains legally deficient. A party may advance new contentions when data or conclusions in a final EIS "differ significantly" from the discussion in the draft EIS. (10 CFR 2.309(f)(2)) (See CLI-05-20, at 23). NIRS/PC could not effectively advance such contentions at an earlier time because similar contentions had been rejected, and the issues were pending on review before the Commission. NIRS/PC have timely advanced the present contentions upon the remand by the Commission.

I. Applicable standards support admission of the proposed contentions.

The late-filing standards are contained in 10 CFR Section 2.309(c):

a. Section 2.309(c) (i)

The rule requires a showing that NIRS/PC have good cause for the failure to file on time. As noted above, NIRS/PC sought to amend its contentions to set forth matters similar to those in the present contentions in two motions dated October 20, 2004 and February 2, 2005, which were denied. A petition for review was submitted to the Commission and was pending when the Final EIS was issued in June 2005. The Board has stated that "filing a new contention at that time would have been procedurally difficult, to say the least." (Tr. 2598). The Commission remanded the contentions addressed to the DEIS on October 19, 2005. The Board on October 26, 2005 denied a motion to dismiss contentions originally addressed to the Draft EIS that might have been amended to reflect the discussion in the Final EIS. (*id.*). To make the record clear as to NIRS/PC's position, NIRS/PC now move formally to amend the remanded contentions to update them as to the Final EIS. Under the ruling of the Board the motion should be deemed timely.

b. Section 2.309(c) (ii) - (iv)

The Board has ruled that factors 2.309(c) (ii) through (iv) need not be considered in the context of an existing intervenor whose standing has been determined. (Memorandum and Order, Nov. 22, 2004, at 6; Memorandum and Order, June 30, 2005, at 7 n. 6).

c. Section 2.309(c) (v) - (vi)

The Board has ruled that factors (v) and (vi), availability of other means to protect the intervenor's interest and representation of intervenor's interest by existing parties, are accorded less weight than other factors. (Memorandum and Order, Nov. 22, 2004, at 9). In any event, no

other proceeding would permit the present issues to be asserted, and no other party appears prepared to assert them here.

d. Section 2.309(c)(vii)

The contentions raised here parallel those considered and upheld by the Commission in CLI-05-20 and should be deemed admissible. Thus, the Commission has determined that any delay and effort involved in hearing these contentions is outweighed by the value of determining the merits of the contentions.

e. Section 2.309(c)(viii)

This section inquires whether NIRS/PC will assist in developing a sound record. This criterion is principally a factor of the expert knowledge that NIRS/PC can bring to the hearings. Dr. Arjun Makhijani, expert witness for NIRS/PC, has been qualified as an expert before this Board. He has a doctorate in engineering from the University of California, Berkeley, with a specialization in nuclear fusion and has published works on the performance of nuclear waste disposal sites, such as the near-surface disposal units at Idaho National Laboratory. (A. Makhijani and M. Boyd, *Poison in the Vadose Zone: An Examination of the Threats to the Snake River Plain Aquifer* from the Idaho National Engineering and Environmental Laboratory (Oct. 2001); M. Fioravanti and A. Makhijani, *Containing the Cold War Mess: Restructuring the Environmental Management of the U.S. Nuclear Weapons Complex*, at 76-100 (Oct. 1997)). Further, the expert reports already on file, *Costs and Risks of Management and Disposal of Depleted Uranium from the National Enrichment Facility Proposed to be Built in Lea County New Mexico* by LES, by Arjun Makhijani, Ph.D. and Brice Smith, Ph.D. (Institute for Energy and Environmental Research, November 24, 2004) (the "Nov. 2004 Report"), and *Update Costs and Risks of Management and Disposal of Depleted Uranium from the National Enrichment*

Facility Proposed to be Built in Lea County New Mexico by LES, by Arjun Makhijani, Ph.D. and Brice Smith, Ph.D. (Institute for Energy and Environmental Research, July 5, 2005 (the "July 2005 Report")) contain analyses and discussion of the shortcomings of near-surface disposal of DU. These reports establish that a sound record will be developed by the participation of experts on behalf of NIRS/PC.

g. Compliance with 10 CFR 2.309(f):

NIRS/PC submit that the demonstration herein satisfies 10 CFR 2.309(f). The specific issues to be litigated are set forth, and technical bases for updated matters are presented, with record references. In the motions made by NIRS/PC on October 20, 2004 and February 2, 2005, the bases for the amended and supplemental contentions were set forth in detail, demonstrating the existence of expert support by Dr. Makhijani. The Commission has ruled that the bases presented are sufficient under the rules. (CLI-05-20, at 23). The issues are clearly within the scope of the proceeding, wherein the Board must determine the compliance of environmental documents with the National Environmental Policy Act ("NEPA") and must ascertain whether LES's chosen disposal strategy is a "plausible" one. Further, the existence of a dispute with the Applicant cannot be doubted. LES is required to disclose its disposal strategy and establish its costs, and Staff must issue an EIS analyzing the impacts of such strategy. Such tasks must be completed before a license may issue.

II. The proposed amended contentions in issue are highly relevant and well supported by expert technical analysis.

The contentions proposed by NIRS/PC constitute updated contentions with regard to the Final Environmental Impact Statement ("FEIS"), paralleling the contentions proposed to be added in NIRS/PC's motion dated October 20, 2004 and admitted by order of the Commission in CLI-05-20. New matter is set forth in bold face:

Contention EC-4: Bases:

Further, as to the impacts of waste disposal, the FEIS analysis is insufficient for the following reasons:

A. The FEIS contains a narrative description of the near-surface disposal site operated by Envirocare of Utah ("Envirocare") at page 4-63. The discussion contained in the FEIS falls far short of the hard look that NEPA requires at the impacts of near-surface disposal of large amounts of depleted uranium from an enrichment facility. The FEIS states that the Envirocare site is authorized by the State of Utah to dispose of depleted uranium with no volume restrictions and that several site-specific factors contribute to the acceptability of the Envirocare site for disposal of depleted uranium. The FEIS then concludes that the impacts of near-surface disposal at Envirocare would, therefore, be small. In fact, no valid scientific analysis underlies such a conclusion about the acceptability of the Envirocare site for disposal of large quantities of depleted uranium. Neither the State of Utah nor the NRC Staff has presented a valid scientific analysis demonstrating that the disposal of large quantities of bulk depleted uranium at the Envirocare site would meet the performance requirements of 10 CFR Part 61, Subpart C. Such an analysis should include a waste inventory of depleted uranium at the volumes and concentrations under consideration by LES, scenarios involving the future use and potential occupancy of the site, the consideration of impacts extending to the time of peak dose in compliance with the regulation, and the prospects of the loss of cover of the disposal site through erosion, intrusion, or other processes. Such analyses for "dry" sites have been conducted by the Department of Energy and by experts for NIRS/PC and show violations of the 10 CFR Part 61 dose limits by large margins. Other analyses indicate that near-

surface disposal of large quantities of depleted uranium in other environments (i.e., "wet" sites) is likely, over time, to result in doses in violation of 10 CFR Part 61. No valid analyses have been presented in this case that show such near-surface disposal to be able to meet the performance criteria in 10 CFR Part 61, Subpart C at the time of peak dose.

B. The FEIS attempts to estimate the impact of disposal of large amounts of depleted uranium from the proposed NEF in its modeling of the releases expected from a generic mine site. (at 4-64, Table 4-19). The FEIS fails to adequately disclose the models used and the parameter values, and such disclosures have never been made by the Commission Staff in this case. The FEIS text suggests that the models used in analyzing generic deep disposal sites in the CEC FEIS were used, and in Table 4-19 of the FEIS certain errors made in generating Table 4-19 of the Draft EIS have been corrected; however, the modeling results shown in FEIS Table 4-19 vary by several orders of magnitude from results obtained in similar studies of depleted uranium disposal (see, e.g., NIRS/PC Ex. 128 at 14, 31; NIRS/PC Ex. 190 at 21-23), remain unsupported by adequate specification of the models and input parameters used, and the results cannot be reproduced using the information contained in the CEC FEIS. The Commission Staff itself has apparently failed to try to reproduce the dose estimates presented in the NEF FEIS from the information presented in the CEC FEIS. The results are quite literally incredibly low and cannot be viewed as scientifically credible. Further, the model addresses only two hypothetical disposal sites and fails to examine any real-world location of potential disposal. Performance of a disposal site is highly site-specific.

Bases for new matter concerning the statements in the FEIS are contained in expert opinions offered by Dr. Arjun Makhijani and testimony in the October 2005 hearings, as follows:

- A. There has been no adequate scientific analysis presented by either LES or Commission Staff of the impact of near-surface disposal at the Envirocare site, or any other proposed disposal site, of depleted uranium in the large quantities produced by uranium enrichment. No data have been gathered and analyzed, and no performance assessment has been carried out by LES or Commission Staff. The Commission has long held that near-surface disposal of such quantities of depleted uranium requires careful analysis of environmental impacts and is not likely to be permissible under the standards of 10 CFR Part 61. (See Direct testimony of Dr. Arjun Makhijani concerning disposal, Oct. 18, 2005, at A6; Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A3; Oct. 2005 Tr. 2929-44; 2994).
- B. With respect to its potential health and environmental impact over the long term, depleted uranium requires disposal in a deep geologic repository. (See Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A4, A5, A6, A7).
- C. Further, disposal in a facility on the same order as the Waste Isolation Pilot Plant would be required for depleted uranium despite claims that transuranic waste disposed of in the WIPP to date has had a higher activity on average. (See Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A8, A9).
- D. Generic screening calculations in the Department of Energy Programmatic Environmental Impact Statement of the impacts of disposal of large quantities of depleted uranium from enrichment plants indicate, among other things, that exposures to depleted uranium waste following erosion or removal of the surface covering would violate the dose limitations of 10 CFR Part 61 by a wide margin. (See

Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A12; Oct. 2005 Tr. 2688, 2691). Significantly, the language of 10 CFR Part 61, subpart C states, among other requirements, that

Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste *at any time* after active institutional controls over the disposal site are removed. (*emphasis added*).

(10 CFR 61.42).

- E. Analyses undertaken by the Commission in connection with the issuance of 10 CFR Part 61, using scenarios designed to protect the inadvertent intruder, indicate that depleted uranium would cause doses to such intruders at such a level that it would be unacceptable for near-surface disposal. (NIRS/PC Ex. 275 at 7-7, 7-18).
- F. Generic analyses of near-surface disposal of depleted uranium from the proposed Claiborne Enrichment Center in a wet environment indicated noncompliance with the dose limits of 10 CFR Part 61. (See NRC Staff Ex. 46 at 4-67, A-9; NIRS/PC Ex. 190 at 23, 25; NIRS/PC Ex. 128 at 13, 49; Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A12).
- G. Screening analyses undertaken by IEER of generic near-surface sites in a dry environment showed that doses from an external pathway alone could reach as much as 30 to 75 rem per year. (See Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A12; NIRS/PC Ex. 190 at 23-29).
- H. Detailed analysis of the impacts of near-surface disposal of large amounts of depleted uranium from an enrichment plant requires examination of the geology, hydrology, soil chemistry, meteorology, and specific exposure scenarios—in other words, a site-

specific analysis of a proposed disposal site. (See Direct testimony of Dr. Arjun Makhijani concerning disposal, Oct. 18, 2005, at A7; NIRS/PC Ex. 190, at 26-28).

- I. Site-specific analyses by IEER of the proposed Waste Control Specialists disposal site showed that near-surface disposal of large amounts of depleted uranium would cause doses by an external pathway as high as 44 to 120 rem per year. (See Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A12; NIRS/PC Ex. 224 at 8-24). The original performance assessments supporting the licensing of the Envirocare site likewise show likely noncompliance with 10 CFR Part 61 dose limits for depleted uranium in the intruder-agriculture and intruder-construction scenarios and noncompliance with the worker dose limit during operation at the level of 5 rem per year. (See NIRS/PC Ex. 224, at 8; Rebuttal testimony of Dr. Arjun Makhijani concerning disposal, Oct. 25, 2005, at A10, A11; Oct. 2005 Tr. 2709-10).
- J. Further, it appears that since 1990 other analyses of the Envirocare site have been undertaken, but none would support disposal of depleted uranium in large quantities. For example, it appears that studies were made in support of a Class A disposal cell, but a report from Argonne National Laboratory indicates that those analyses assumed disposal of a spectrum of low-level radioactive waste that did not include large quantities of depleted uranium. (NIRS/PC Ex. 273, at 13). Utah regulators are said to have reached a decision that depleted uranium in large quantities could be disposed of at the Envirocare site on the basis of the original performance assessments conducted in 1990 by assuming that in the future humans would not reside upon the site, would not use groundwater, would not pursue agriculture, and would not visit the

site for extended periods, and that the cover material would not be penetrated by natural processes (e.g., erosion) or by human intrusion. (LES Ex. 104 at 2, 3) (Oct. 2005 Tr. 2649-50, 2875-76). Such assumptions are at variance with activities and processes that should be reasonably anticipated in evaluating the performance of a disposal site—particularly a site where large amounts of depleted uranium, whose radionuclides and daughter products are very long-lived, may be disposed of and where activities such as hunting and recreational vehicle driving are known to have occurred in the recent past. (Oct. 2005 Tr. 2909-13, 2975-3005). Further, the performance assessments conducted in 1990 contain egregious errors and physically impossible results which cast doubt on the results that are not immediately discernible as wrong on first principles.

- K. No valid analysis of disposal of large quantities of depleted uranium in a near-surface disposal site has been presented in this case that shows compliance with the dose limits of 10 CFR Part 61, Subpart C, and a number of analyses have been presented that show the high likelihood of such disposal violating such dose limits when the time of peak dose is considered. (Oct. 2005 Tr. 2994).
- L. Concerning the analyses of the impact of disposal of depleted uranium at a deep disposal site reported in the Final EIS (at 4-64 and Table 4-19), Commission Staff have explained that certain mathematical errors made in preparing a similar table for the Draft EIS have been corrected and new results reported in the FEIS. However, the FEIS still fails to make full disclosure of the models used and the parameter values. NIRS/PC have requested such information in discovery, but it has not been made available. (Commission Staff responses to interrogatories at 6-7, Nov. 10,

2004). The FEIS text suggests that models used in analyzing generic deep disposal sites in the CEC FEIS were used. However, the results reported in the FEIS Table 4-19 cannot be reproduced using the information contained in the CEC FEIS.

Moreover, the results shown in FEIS Table 4-19 vary by several orders of magnitude from results obtained in similar studies. Examples are the 1992 report by Kozak et al. (NIRS/PC Ex. 128 at 31, showing solubility values consistent with doses of tens of mrem per year) and analyses by IEER (NIRS/PC Ex. 190 at 21-23, calculating drinking water doses from U-238 alone in the range of tens of mrem per year). The results contained in the FEIS are so low—incredibly low—that they cannot be considered scientifically credible.

Conclusion

For the reasons set forth herein, the proposed additional contentions should be admitted by the Board.

Respectfully submitted,

LSJ

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November 11, 2005

CERTIFICATE OF SERVICE

Pursuant to 10 CFR §2.305 the undersigned attorney of record certifies that on November 11, 2005, the foregoing Motion on Behalf of Intervenors Nuclear Information and Resource Service and Public Citizen for Admission of Supplemental and Additional Late-Filed Contentions was served by electronic mail and by first class mail upon the following:

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