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**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
  
BEFORE THE COMMISSION**

**OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF**

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In the Matter of

Docket No. 70-3103

Louisiana Energy Services, L.P.  
National Enrichment Facility

ASLBP No. 04-826-01-ML

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**BRIEF ON BEHALF OF PETITIONERS  
NUCLEAR INFORMATION AND RESOURCE SERVICE/  
PUBLIC CITIZEN  
IN SUPPORT OF  
NIRS/PC CONTENTION EC-3/TC-1**

**Preliminary statement**

This memorandum is submitted on behalf of petitioners Nuclear Information and Resource Service and Public Citizen ("NIRS/PC") pursuant to the Memorandum and Order of the Nuclear Regulatory Commission (the "Commission") dated August 18, 2004. That Order allows the parties to file briefs with the Commission concerning the admissibility of the contention, advanced by NIRS/PC, which was admitted by the Atomic Safety and Licensing Board (the "Board"), identified as NIRS/PC EC-3/TC-1.

**Factual background**

The Applicant, Louisiana Energy Services, L.P. ("LES"), has filed its application ("App.") for a license to construct and operate a uranium enrichment facility in southeastern New Mexico, to be called the National Enrichment Facility ("NEF"). Such a facility, if licensed, would become the first privately-constructed uranium enrichment facility in the United States. In its application LES addressed the disposition of the depleted uranium hexafluoride ("DUF<sub>6</sub>")

tails to be generated as a product of enrichment processes. LES stated that its first preference was to have the  $\text{DUF}_6$  converted to  $\text{DU}_3\text{O}_8$  in a privately-built conversion plant and, thereafter, to have the  $\text{DU}_3\text{O}_8$  disposed of in a deep disposal site, such as an exhausted uranium mine. (App. Rev. 2, at 4.13-8 – 9). LES stated that its second preference (App. 4.13-6) would be to tender the  $\text{DUF}_6$  to the U. S. Department of Energy (“DOE”) for disposition by DOE pursuant to Sec. 3113 of the U.S. Enrichment Corporation Privatization Act, Pub. L. 104-134, Title III, Ch. 1, Subch. A, 110 Stat. 1321- 35) (1996). Under Sec. 3113, LES has stated that “the Section 3113 requirements of the U.S. Enrichment Corporation Privatization Act mandate, in LES’s view, that DOE dispose of depleted uranium from a uranium enrichment facility licensed by the NRC.” (App. 4.13-6).

The Commission on January 30, 2004, issued its order specifying further proceedings on the application. (69 Fed. Reg. 5873 (Feb. 6, 2004)). The Commission then noted that, since an applicant to construct an enrichment plant is required, under the precedent of LES’s Claiborne Enrichment Center application (56 Fed. Reg. 23310, 23313) (May 21, 1991)), to present a “plausible strategy” for disposition of the DU generated in enrichment operations, LES might, under certain conditions, propose transfer to DOE under Sec. 3113 as such a strategy:

“In addition, if such waste meets the definition of ‘waste’ in 10 CFR 61.2, the depleted tails are to be considered low-level radioactive waste within the meaning of 10 CFR part 61 in which case an approach by LES to transfer to DOE for disposal by DOE LES’s depleted tails pursuant to Section 3113 of the USEC Privatization Act constitutes a ‘plausible strategy’ for dispositioning the LES depleted tails.” (69 Fed. Reg. at 5877)

The “definition of ‘waste’ in 10 CFR 61.2,” the rule that the Commission cited, is “low-level radioactive waste,” and contains further conditions, as discussed below.

Petitioners NIRS/PC filed their petition to intervene in this proceeding on April 6, 2004. ("NIRS/PC Pet."). NIRS/PC included contention NIRS/PC EC-3/TC-1, which asserted that LES lacks the required "plausible strategy" (NIRS/PC Pet. 25-31). The contention states:

"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 ("DUF<sub>6</sub>") waste that the operation of the plant would produce. See NRC Order, 69 Fed. Reg. 5873, 5877 (Feb. 6, 2004)."

Basis D (NIRS/PC Pet. 27) states:

"The LES application (ER 4.13.3.1.3 Depleted UF<sub>6</sub> Disposition Alternatives) states, 'The disposition of UBCs by DOE conversion and disposal is described...since it is also a 'plausible strategy,' but is not considered the preferred option.' In support of this assertion, LES points to § 3113 of the 1996 USEC Privatization Act (which requires the DOE to take possession and dispose of DU from private uranium enrichment plants *if* the waste is considered by the NRC to be low-level radioactive waste) and to two letters, one from DOE, dated July 25, 2002, and one from NRC, dated March 24, 2003."

Basis D continues, pointing out, first, that the Commission has not made the required determination that depleted uranium ("DU") is low-level waste (NIRS/PC Pet. 27). Second, Basis D explains at length that, under the criteria of Part 61, DU would not meet the definition of "waste." (NIRS/PC Pet. 28-31).

LES opposed admission of this contention. (LES Ans., May 3, 2004, at 17-37).

However, NRC Staff stated that this contention raises a genuine issue material to the proceeding:

"NIRS also contends that option (2), involving conversion and disposition by DOE, is not plausible because, as a precondition for acceptance by DOE, the DU must first be determined to be low-level waste and, in their view, DU does not meet the NRC's definition for low-level waste. NIRS, by providing a detailed analysis for its conclusion that DU cannot be considered low level waste, has raised a genuine issue of fact which is material to this proceeding further supporting the admission of this contention." (NRC Staff Ans. 14, May 3, 2004).

The Board ruled that the contention, supported by Bases B, C, and D, is "sufficient to establish a genuine material dispute adequate to warrant further inquiry." It stated, further, that such ruling "raises a novel legal or policy question regarding the status of depleted uranium

hexafluoride waste as low-level waste,” and accordingly it referred the ruling to the Commission. (Memorandum and Order, July 19, 2004, at 29).

On August 18, 2004, the Commission entered its order allowing the parties to submit briefs addressing the issue referred, noting that contention NIRS/PC EC-3/TC-1 “contends that LES does not have a ‘plausible strategy’ to dispose of the depleted uranium hexafluoride waste that the LES facility will produce.” (Memorandum and Order, Aug. 18, 2004, at 6). The Commission specifically requested the parties to address 10 CFR 61.55(a)(6) and the ruling by the Atomic Safety and Licensing Board in the Claiborne Enrichment Center proceeding, March 2, 1995, denying an intervenor’s petition for a waiver of applicable portions of 10 CFR 61.55 as to waste classification. (Id. 8 note 18).

#### ARGUMENT

**a. The only issue presented concerns admissibility of the contention; no decision on the merits of the contention can be made until a hearing is held.**

In addressing contention NIRS/PC EC-3/TC-1, it is important to bear in mind what issues are presented and what issues are not presented. No hearing has been held on this contention, and no evidence regarding it has been introduced. The issue here is admissibility of an allegation. The only question before the Commission is whether contention NIRS/PC EC-3/TC-1 should be admitted for purposes of further proceedings before the Board. To establish admissibility, NIRS/PC need only make “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). At the stage of determining admissibility, the Commission is neither to decide the merits of a contention nor to make a summary disposition. In re *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station), CLI-91-12, 34 NRC 149, 156 (1991). The only question is whether the contention satisfies the

requirements of 10 CFR 2.309(f). Here, the contention clearly satisfies the requirements of specificity, basis, scope, materiality, supporting information, and existence of a dispute with the applicant of Sec. 2.309(f). Rather, the question referred appears to involve whether contention NIRS/PC EC-3/TC-1 conflicts with a Commission regulation, contrary to 10 CFR 2.335(a), or with existing statutes.

Thus, the Commission is not now called upon to determine the merits of contention NIRS/PCEC-3/TC-1. It would be a serious error for the Commission to attempt to decide, on this referral, whether certain DU in fact constitutes "low-level radioactive waste" for purposes of Sec. 3113 or Part 61. There has been no opportunity to submit evidence in support of or in opposition to the contention. Whether a particular form of DU constitutes "low-level radioactive waste," and if so what class of waste, is a "subtle and complex" issue which should not be addressed without opportunity for full inquiry. In re *Louisiana Energy Services* (Claiborne Enrichment Center), CLI-95-7, No. 70-3070-ML (June 22, 1995).

Moreover, the regulatory status of DU produced in enrichment facilities is a question that involves significant quantities of waste at several locations, in addition to the proposed NEF, and affects persons who are not parties to this proceeding. Only a procedure that allows all interested parties to be heard should be employed to address such an issue.

On the issue presented, which involves the adequacy of NIRS/PC's pleading, two main points can be made:

**b. Transfer to DOE under Sec. 3113 cannot be deemed a plausible strategy, because the Commission has not determined that depleted uranium constitutes low-level waste.**

First, contention NIRS/PC EC-3/TC-1 alleges that, before transfer to DOE under Sec. 3113 may be regarded as a "plausible strategy," the Commission itself must make a determination, which it has not yet made, that DU constitutes low-level radioactive waste. This

contention is clearly supported by the applicable statutes. Section 3113 was adopted in 1996 and authorizes the transfer of depleted uranium to DOE for dispositioning only after such DU has been "ultimately determined to be low-level radioactive waste." Clearly, when Congress enacted Sec. 3113 in 1996, it acted on the premise that no determination had been made by this Commission classifying DU as low-level radioactive waste.

The legislative history shows that in 1995, before enactment of the USEC Privatization Act, representatives of several states informed Congress of their concern that DU might in the future be determined to be low-level radioactive waste under the Low-Level Radioactive Waste Policy Act, 42 U.S.C. 2012b, *et seq.*, and that, as a result, privately-generated DU might be required to be accepted by facilities created under interstate compacts. (Hearing Before the Senate Committee on Energy and Natural Resources, June 13, 1995, at 5, 101 (104th Cong. 1st Sess.)). Therefore, language was introduced which would require DOE to accept such DU for disposal—if a determination were made that DU constitutes low-level radioactive waste. Under Secretary of Energy Charles B. Curtis explained to the Senate Energy Committee that DOE's obligation to accept DU for disposal would only arise if it "should at some time in the future become classified as low-level waste." (*id.* 12; see also 35).

The congressional language recognized that no such classification had been made, and it protected the interstate compact facilities, in the event such a determination were made in the future. Thus, Section 3113, as enacted, reads as follows:

"(a) Responsibility of DOE—

(1) The Secretary, at the request of the generator, shall accept for disposal low-level radioactive waste, including depleted uranium if it were ultimately determined to be low-level radioactive waste, generated by—

(A) The Corporation as a result of the operations of the gaseous diffusion plants or as a result of the treatment of such wastes at a location other than the gaseous diffusion plants, or

- (B) Any person licensed by the Nuclear Regulatory Commission to operate a uranium enrichment facility under sections 53, 63, and 193 of the Atomic Energy Act of 1954 (42 U.S.C. 2073, 2093, and 2243).
- (2) Except as provided in paragraph (3), the generator shall reimburse the Secretary for the disposal of radioactive waste pursuant to paragraph (1) in an amount equal to the Secretary's costs, including a pro rata share of any capital costs, but in no event more than an amount equal to that which would be charged by commercial, State, regional, or interstate compact entities for disposal of such waste.
- (3) In the event depleted uranium were ultimately determined to be low-level radioactive waste, the generator shall reimburse the Secretary for the disposal of depleted uranium pursuant to paragraph (1) in an amount equal to the Secretary's costs, including a pro rata share of any capital costs."

To underscore the Commission's essential role in classifying radioactive waste, the USEC Privatization Act in Sec. 3102(6) defines "low-level radioactive waste," by applying the meaning "given such term in section 2(9) of the Low-Level Radioactive Waste Policy Act (42 USC 2021(b)(9))." That definition, in turn, emphasizes the requirement for a Commission determination to classify such material as low-level radioactive waste:

"(9) Low-level radioactive waste.—The term "low-level radioactive waste" means radioactive material that—

- (A) is not high-level radioactive waste, spent nuclear fuel, or byproduct material (as defined in section 11e.(2) of the Atomic Energy Act of 1954 (42 USC 2014(e)(2)); and
- (B) The Nuclear Regulatory Commission, consistent with existing law and in accordance with paragraph (A), classifies as low-level radioactive waste." 42 USC 2021b.

At today's date, no Commission determination has been made with regard to DU. Thus, DOE is still not obligated to accept DU under Sec. 3113.

Basis D enumerates additional evidence, showing that the essential Commission determination has not been made, and accordingly Sec. 3113 does not present a "plausible strategy." Responsible officials of both DOE and the Commission have recently stated that a Commission determination would be needed before DU could be considered low-level radioactive waste, and that such determination has not been made. DOE's letter states:

“Tails Disposition: There has been *no formal determination* by NRC that depleted uranium is low-level radioactive waste for purposes of Section 3113 of the 1996 USEC Privatization Act. Consequently, the Department is not obligated to accept it for disposal unless and until NRC makes such a determination.” (Letter, W.D. Magwood, Dir. Office of Nuclear Energy, Science, and Technology, to M.J. Virgilio, Dir. Office of Nuclear Material Safety and Safeguards, July 25, 2002) (*emphasis supplied*).

The letter from Commission Staff states:

“NRC staff considers that Section 3113 would be a ‘plausible strategy’ for dispositioning depleted uranium tails *if NRC determines* that depleted uranium is a low-level radioactive waste. In that regard, the staff expects that LES will indicate in its application whether it will treat the tails as a waste or a resource. LES should also demonstrate in its application, given the expected constituents of its depleted tails, that the tails meet the definition of low-level radioactive waste in 10 CFR Part 61.” (Letter, R.C. Pierson, NRC ONMSS, to R.M. Krich, LES, March 24, 2003) (*emphasis supplied*).

Thus, the validity of NIRS/PC’s contention that LES lacks a plausible strategy based upon Sec. 3113 could not be more clear. The contention is well-founded and consistent with existing law, and its admissibility should be sustained.

**c. Depleted uranium cannot be considered low-level waste under 10 CFR Part 61.**

Secondly, contention NIRS/PC EC-3/TC-1 asserts that DU could not be classified as low-level radioactive waste under 10 CFR Part 61. Such a contention does not constitute an attack on that regulation but, to the contrary, constitutes the application of that regulation.

The history of Part 61 shows that, in the course of that rulemaking, the Commission made no determination whether to classify DU as low-level radioactive waste under that rule. Rather, the issue has been left for future decision. Moreover, the criteria and framework of Part 61 indicate that DU would not qualify as low-level radioactive waste.

Part 61 contains standards for disposal of “waste,” which is defined as (a) low-level radioactive waste (b) limited to waste that is acceptable for disposal in a land disposal facility:

“*Waste* means those low-level radioactive wastes containing source, special nuclear, or byproduct material *that are acceptable for disposal in a land disposal facility*. For purposes of this definition, low-level waste has the same meaning as in the Low-Level

Waste Policy Act, that is, radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11e.(2) of the Atomic Energy Act (uranium or thorium tailings and waste).” 10 CFR 61.2 (*emphasis supplied*)

Part 61 further defines “land disposal facility” to exclude a “geologic repository”:

“*Land disposal facility* means the land, building, and structures, and equipment which are intended to be used for the disposal of radioactive wastes. For purposes of this chapter, a ‘geologic repository’ as defined in Part 60 or 63 is not considered a land disposal facility.” (id.).

Thus, waste destined for disposal in a geologic repository would not be “acceptable for disposal in a land disposal facility” and would not be “waste” under Part 61.

The regulation also defines “near-surface disposal facility.” Part 61, as adopted, contains specific criteria only for disposal of wastes in a near-surface disposal facility, as defined:

“*Near-surface disposal facility* means a land disposal facility in which radioactive waste is disposed of in or within the upper 30 meters of the earth’s surface.” (id.).

In the hearing notice for the current licensing proceeding, the Commission stated that a “plausible strategy” based on Sec. 3113 would require LES to establish that the depleted tails “meet[] the definition of ‘waste’ in 10 CFR 61.2. (69 Fed. Reg. 5873, 5877 (Feb. 6, 2004). To meet that definition, LES would need to establish that DU from the proposed NEF would constitute low-level radioactive waste acceptable for disposal in a land disposal facility, and *not* required to be disposed of in a geologic repository. Contention NIRS/PC EC-3/TC-1 asserts that DU does not meet that definition—the very issue pointed out by the Commission in its January 30, 2004, order.

It should be noted that the burden of proof of a “plausible strategy” remains with LES, and in that regard much remains to be established. To begin with, LES has not established the nature of the material which it proposes to tender to DOE for dispositioning. Depleted uranium hexafluoride itself is unstable and is not proposed for disposal. (App. 4.13-10). LES cites

DOE's Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride (1999) ("DOE PEIS"), which postulated the conversion of  $\text{DUF}_6$  to  $\text{DU}_3\text{O}_8$ ,  $\text{DUO}_2$ , or uranium metal (App. 4.13-10). More recent environmental analyses discuss the possible conversion of  $\text{DUF}_6$  to DU metal,  $\text{DUF}_4$ ,  $\text{DUO}_2$ , and  $\text{DU}_3\text{O}_8$ , among the possible disposal alternatives. (Assessment of Preferred Depleted Uranium Disposal Forms, ORNL/TM-2000/161). Here, it is not even known what disposal form the DU generated by LES would be converted to. Thus, LES is in no position to assert that such a waste form conclusively qualifies as low-level waste acceptable for disposal in a land disposal facility.

Even assuming that the DU material were to be converted to  $\text{DU}_3\text{O}_8$  for disposal, NIRS/PC contend, in contention NIRS/PC EC-3/TC-1 that such DU clearly would not meet the definition of low-level waste contained in Part 61. An examination of the origins of Part 61 demonstrates that that rule was never intended to address DU, and if it Part 61 were applied to DU, that DU would fall outside the category of low-level waste.

Part 61 was considered and adopted without any analysis of the environmental impact of applying its disposal criteria to the DU produced by enrichment plants. The rule was initially proposed in 1980. (Licensing Requirements for Land Disposal of Radioactive Waste, Proposed Rule, 46 Fed. Reg. 38,081)(July 24, 1981). At that time the gaseous diffusion enrichment plants operated by DOE were outside the Commission's jurisdiction. Depleted uranium, which was generated in huge volume by such plants, as well as other DOE waste streams, were not considered in the Commission's analysis. The record is clear on this point:

"[A]ll DOE wastes are now disposed of at DOE owned and operated facilities which are not subject to NRC or Agreement State licensing authority. Such wastes are thus not addressed in this EIS." (Draft Environmental Impact Statement on 10 CFR Part 61

"Licensing Requirements for Land Disposal of Radioactive Waste," NUREG-0782, vol. 2, at 3-8 (Sept. 1981) ("Draft EIS").

The Commission specifically referred, in this connection, to the existing DOE-operated enrichment plants:

"Currently, three enrichment plants using the gaseous diffusion process are in operation and these are located at Portsmouth, Ohio; Paducah, Kentucky; and Oak Ridge, Tennessee. These plants are owned and operated by the federal government and wastes produced from plant operation are not sent to commercial disposal facilities. Hence, waste streams produced from uranium enrichment operations are not considered further in this appendix." (Draft EIS at D-7).

In choosing its overall regulatory approach, the Commission determined that Part 61 would incorporate both "prescriptive" and "performance" requirements as to the disposal of low-level waste:

"NRC believes that development of a regulation using solely prescriptive requirements or solely performance objectives would not prove effective for the future regulation of LLW disposal. Given the wide variation in the form and characteristics of waste that has and will continue to be generated; given the wide range in potential site characteristics in various regions of the U.S.; and given the fact that technological innovation in waste disposal problems is now receiving greater emphasis in finding improved solutions to LLW disposal problems, requirements of both types are needed." (Draft EIS at 2-3).

Thus, the proposed Part 61 included a "prescriptive" classification system, governing containment of wastes, depending mainly upon the activity and half-life of the radionuclide content. (46 Fed. Reg. 38081, 38084, 38097) (July 24, 1981). The Commission examined the risk to a possible future intruder who would be exposed to buried waste. In light of such prospect, certain categories of radioactive waste were considered by the Commission to be acceptable for disposal without additional stabilization measures, *i.e.*, principally wastes containing radionuclides that would decay to a safe level within a few years (46 Fed. Reg. at 38091). Other radionuclide-contaminated wastes were considered by the Commission to present an acceptable risk, but only provided that stabilization measures were applied, under the

Commission's assumption of 100 years of institutional control of the site. (id.). Still other radionuclides were regarded as presenting acceptable risks, but only if additional containment measures were used, on the assumption that such wastes would be protected from disturbance for a period of 500 years, and at the 500 year point they would not present a significant risk to an intruder (id.). The Commission remarked that, of the waste streams under consideration, nearly all such wastes would decay within 500 years to levels that the Commission considered acceptable:

"From the analyses performed earlier in the EIS, it can be seen that due to radioactive decay, exposures to a potential intruder from almost all waste streams typically considered to be LLW have fallen to a few millirems after a few hundred years—e.g., 500 years. After 500 years, only a few waste streams are estimated to result in potential intruder exposures of a few hundred millirems." (Draft EIS at 4-71; see also 4-52)

Proposed Part 61 contained a table that was the original of the system that ranks low-level waste as Class A, B, or C, and creates the additional category of "Greater-than-Class C" waste. In the proposal DU was listed as one of the possible contaminant radionuclides. (Draft EIS, Table 7.2, at 7-18). Significantly, the table listed DU in all three columns with the same concentration level of 0.05 microcuries per cubic centimeter. (id.). Under the proposal, uranium-bearing waste in concentrations in excess of the specified limit could not be disposed of in a near-surface facility. The effect of the proposal was to classify DU in excess of 0.05 microcuries per cubic centimeter into the Greater-than-Class C category. The contention in issue here alleges that the DU from operation of the NEF would far exceed that value. (NIRS/PC Pet. 29).

The Commission explained later that the intent of listing certain radionuclides (e.g., DU) with the same concentration in each column was to identify radionuclides with extremely long half-lives. (Licensing Requirements for Land Disposal of Radioactive Waste, Final Rule, 47

Fed. Reg. 57,446, 57,746 (Dec. 27, 1982)). Since uranium (and some other radionuclides) decays scarcely at all in 500 years, the Commission proposed that any waste exceeding the concentration limit be ineligible for near-surface disposal. The Commission explained in the proposal for Part 61 that disposal methods for such wastes would be addressed in a subsequent rulemaking:

“Column 3 presents a list of radionuclide concentrations above which the waste would generally not be considered suitable for near-surface disposal. Wastes which exceed this concentration would need to be disposed of by disposal methods providing greater protection against potential intrusion. These methods could include much deeper disposal, mined cavity disposal, or special engineered disposal techniques. As noted in Chapter 2, NRC plans to address these other methods in subsequent rulemaking actions.” (Draft EIS at 7-19).

The Commission later made clear that wastes in the Greater-than-Class C category would be disposed of in a geologic repository. (Final Rule, Disposal of Radioactive Wastes, 54 Fed. Reg. 22578) (May 25, 1989)). By definition, such wastes are not “acceptable for disposal in a land disposal facility” (10 CFR 61.2, “Waste”).

In issuing the final Part 61 the Commission reaffirmed its decision to include both prescriptive and performance requirements in Part 61. (Final Environmental Impact Statement on 10 CFR Part 61 “Licensing Requirements for Land Disposal of Radioactive Waste,” Nov. 1982, at S-3)(“Final EIS”):

“[T]he preferred approach selected and followed by NRC in the preparation of Part 61 was to develop both performance objective and prescriptive requirements. Overall performance objectives were developed to define the level of safety that should be achieved in the land disposal of LLW. Minimum technical performance requirements were also developed for each of the major components of a LLW disposal system that should be considered in all cases in the disposal of LLW to help ensure that the overall performance objectives for land disposal would be met. . . . Finally, prescriptive requirements were established where they were deemed necessary and where sufficient technical information and rationale were available to support them.” (Final EIS at S-3, S-4).

In the final rule the Commission also eliminated uranium from the tables that categorized wastes into Classes A, B, and C. The Commission explained that it had done so in response to comments that stressed the difficulty of measuring the curie content of uranium-bearing wastes. At the same time, the Commission noted that it might later add additional isotopes to the classification table in general or in regulating disposal of particular waste streams:

“These changes are principally in response to comments on proposed Part 61 regarding the costs and impacts of compliance with the waste classification requirements. In particular, many commenters were concerned that they would have to directly measure each isotope in every waste package. This would be difficult since measurement of many of the listed isotopes—which would usually be present only in trace quantities—could not be performed except by complex radiochemical separation techniques by laboratories. Commenters were concerned that costs and personnel radiation exposures would be significantly increased. Thus to ease the burden of compliance, the number of isotopes treated generically in the waste classification tables was reduced to those judged to be needed on a generic basis for waste characterization purposes. Other isotopes may be added later either generically or in specific waste streams.” (Final EIS at S-22, S-23; see also 5-37, 5-38).

The Commission explained that it based its decision to eliminate uranium from the classification table upon the current data base of wastes currently being disposed by NRC licensees. Such data base did not include any depleted uranium from enrichment facilities:

“Uranium has also been removed as a limiting element for waste classification. Analysis of the data base for the Part 61 EIS indicates that the types of uranium-bearing wastes being typically disposed of by NRC licensees do not present a sufficient hazard to warrant limitation on the concentration of this naturally occurring material. Both depleted and enriched uranium typically do not contain daughter products in any quantity because of the relatively short time since the uranium was refined from ore, compared to the half-lives of the uranium isotopes. The daughter products are disposed of primarily as uranium mill tailings.” (Final EIS at 5-38).

The data base referred to included no DOE wastes, and, thus, no wastes from enrichment facilities (Draft EIS at D-7).

Like the proposed rule, Part 61, as adopted, expressly ranked the regulated wastes according to the activity and half-life of the contained radionuclides. This classification system,

and the stabilization and containment measures triggered by it, constitutes a key “prescriptive” requirement of Part 61. The language of the rule is clear:

“Institutional control of access to the site is required for up to 100 years. This permits the disposal of Class A and Class B waste without special provisions for intrusion protection, since these classes of waste contain types and quantities of radioisotopes that will decay during the 100-year period and will present an acceptable hazard to an intruder.” 10 CFR sec. 61.7(b) (4).

Thus, the Commission expressly described Class A waste as the type that will decay within 100 years and present an acceptable hazard—clearly not U-238, a principal component of DU, which has a half-life of 4.46 billion years (NIRS/PC Pet. 29-30).

Part 61 continues, explaining that Class C waste, which requires special containment, is limited to waste containing radionuclides that will decay to acceptable levels within 500 years:

“Waste that will not decay to levels which present an acceptable hazard to an intruder within 100 years is designated as Class C waste. . . . A maximum concentration of radionuclides is specified for all wastes so that at the end of the 500 year period, remaining radioactivity will be at a level that does not pose an unacceptable hazard to an intruder or public health and safety. Waste with concentrations above these limits is generally considered unacceptable for near-surface disposal.” 10 CFR 61.7(a) (5).

Again, DU clearly does not decay to an acceptable level within 500 years, since the half-life of U-238 is 4.46 billion years. Thus, DU would not fall within Class C.

Part 61 explains further (as amended in 1989), as to such Greater-than-Class C waste, that a geologic repository is required for disposal:

“Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. In the absence of specific requirements in this part, such waste must be disposed of in a geologic repository as defined in part 60 or 63 of this chapter unless proposals for disposal of such waste in a disposal site licensed pursuant to this part are approved by the Commission.” 10 CFR 61.55(a) (3).”

In other words, waste that is unacceptable for near-surface disposal—Greater-than-Class C waste—does not meet the definition of “waste” under Part 61, because it is not “acceptable for

disposal in a land disposal facility," a term that by explicit regulation excludes a "geologic repository." (10 CFR 61.2).

Part 61 was expressly developed to specify technical requirements for disposal of waste "near surface." (Draft EIS at 1-2). The Commission then stated: "The development of specific technical requirements for deep mined cavities or for other very deep disposal methods will be considered at a later time through a separate rulemaking." (id.). Moreover, when the Commission issued the final Part 61, it expressly held in reserve the decision to add isotopes to the classification tables "later either generically or in specific waste streams." (Final EIS at 5-38).

Against this rulemaking background, the Commission Staff in 1991 responded to the initial proposal by LES to construct an enrichment plant at the Claiborne Enrichment Center. In SECY-91-019 (Jan. 25, 1991) Staff discussed "Disposition of Depleted Uranium Tails from Enrichment Plants" and sought Commission guidance regarding a "unique licensing issue." Staff anticipated "the development of review procedures and licensing requirements" and saw the following unanswered questions:

1. Determination of whether tails are a waste or a resource
2. Assessment of the production rate and the chemical and radiological characteristics of the final form of the enrichment process tails
3. Determination of the proper waste classification for tails
4. Analysis of disposal options" (SECY-91-019, at 4).

Clearly, in 1991 Staff did not consider that the ultimate classification of DU tails had been established by regulation. Staff specifically noted that, in issuing Part 61, the Commission had not considered the disposal of waste from an enrichment plant and that no NEPA analysis had been done of the impact of the proposed rule upon disposal of enrichment tails. (SECY-91-019,

Att. at 4). Staff concluded that DU is a "unique waste form" and pointed out the Commission's authority contained in 10 CFR 61.58 to

"authorize other provisions for the classification and characteristics of waste on a specific basis, if, after evaluation, of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objectives in subpart C of this part."

Thus, to address the question referred, *viz*, the possible conflict between contention NIRS/PC EC-3/TC-1 and 10 CFR Part 61: Plainly, DU from enrichment processes is not mandated by regulation to the category of low-level waste. The form and nature of the waste to be generated by the proposed enrichment plant has not been established. No Environmental Impact Statement, considering alternative waste classifications and disposal methods, has been prepared to support a determination of the status of DU waste from enrichment. The Commission has not been requested, in an actual licensing proposal, to specify the classification for such waste, neither has the Commission determined whether it should, in response to a request to dispose of massive quantities of DU, reinstate DU into the classification table generically or for the specific waste stream, making it manifest that DU is destined for a geologic repository; or whether it may "authorize other provisions for the classification and characteristics of waste, on a specific basis . . ." (10 CFR 61.58), or whether some other action would be appropriate. Clearly, there has been no Commission determination that specific DU waste is "acceptable for disposal in a land disposal facility." A specific proposal would clearly call for full NEPA analysis and, within the regulations, could lead to any of those outcomes.

In this situation, in advancing contention NIRS/PC EC-3/TC-1, NIRS/PC simply wish to present evidence on the precise matters that the Staff in SECY-91-019 indicated were most relevant in deciding the fate of this material—namely, characterization of the final form of waste; classification of the waste in light of its radioactivity, half-life, and other characteristics;

and the costs and environmental impacts of such disposal strategies as may be asserted as plausible. Such a contention should be admitted.

**d. The Board ruling in the Claiborne Enrichment Center proceeding does not affect this case.**

The Commission specifically requested that the parties address the impact in this case of the decision by the Atomic Safety and Licensing Board in the Claiborne Enrichment Center ("CEC") proceeding. (Memorandum and Order, August 18, 2004, at 8 note 18; *In re Louisiana Energy Services* (Claiborne Enrichment Center), No. 70-3073-ML, ASLBP No. 91-641-02-ML, 1995 WL 110611 (March 2, 1995). As the Commission notes, the order in question has been vacated "as a policy matter . . . [to] eliminate any future confusion and dispute over their meaning or effect." (CLI-98-5, 47 NRC 113 (1998)). Thus, the CEC Board decision, by direction of the Commission, has no enduring effect.

Further, in the CEC case the decision involved issues different from those presented here. There, the intervenor sought a waiver of Sec. 61.55(a) (6), which states that waste containing radionuclides not listed in Table 1 or 2 would be Class A waste. So doing, the intervenor responded to the Applicant's claim that DU from the enrichment plant would be not only low-level waste but also Class A waste. Assuming that Part 61 resulted in such classification, the intervenor petitioned under 10 CFR 2.758 (now 10 CFR 2.335) for a waiver of such provisions (Citizens Against Nuclear Trash's Petition for Waiver of 10 CFR Sec. 61.55(a)(3) and 10 CFR Sec. 61.55 (a)(6) and for Classification of Depleted Uranium Tails as Greater than Class C Radioactive Waste, Jan. 17, 1995). The applicable rule calls for a showing of "special circumstances . . . such that the application of the rule would not serve the purposes for which it was adopted . . ." 10 CFR 2.335(b). Under Commission precedents, the waiver rule was deemed to require "unique facts," not common to a larger class of facilities, that were not considered in

adoption of the rule, and also a showing that a waiver was necessary to address a significant safety problem. In re *Louisiana Energy Services* (Claiborne Enrichment Center), No. 70-3073-ML, ASLBP No. 91-641-02-ML, 1995 WL 110611 (March 2, 1995), at 3. Under such standards, the CEC Board declined to authorize such a waiver. The CEC Board noted, as is true, that the Commission did not take into consideration DU wastes from uranium enrichment plants in adopting Part 61: The draft EIS issued in connection with the adoption of Part 61 expressly states that “waste streams produced from uranium enrichment operations are not considered . . .” (Draft EIS at D-7), and the final EIS stated that the Commission only considered “the types of uranium bearing wastes being typically disposed of by NRC licensees.” (Final EIS at 5-38).

However, the CEC Board took the view that “special circumstances” were not shown, because the performance objectives of Subpart C of Part 61 would still apply, even if the containment methods called for by waste classification were not imposed: “In short, the Part 61 regulatory scheme is intended to accommodate all manner of wastes as long as the disposal meets the performance objectives of Subpart C” (slip op. at 5); the CEC Board stated that the “performance objectives of Subpart C are the final determinant on the type of land disposal for the wastes involved, not the waste characteristics” (id. 7). Here the CEC Board erred, because it assigned no value to the “prescriptive” provisions of Part 61, which the Commission considered essential when it adopted Part 61. Those provisions call for a determination, based upon radioactivity and half-life, of the type of containment and manner of disposal. Thus, the classification system of Sec. 61.55 is an essential part of the regulation. In any event, the decision of the CEC Board was based on a regulatory provision, 10 CFR 2.335, which is not in issue here, and which incorporates the requirement of “special circumstances” and unusual conditions that do not apply to the admissibility of a contention, and it has been vacated by this

Commission so that the issues involved in licensing a uranium enrichment plant can be viewed with fresh eyes. (In re *Louisiana Energy Services* (Claiborne Enrichment Center), 47 NRC 113, 114, CLI-98-5, Dkt. No. 70-3070-ML (April 30, 1998).

In the CEC case affidavits were presented, addressing whether DU, despite its long half-life, did not present a risk comparable to TRU waste. These affidavits are not in the record of the present proceeding. Neither is any other evidence on waste classification or disposal methods contained in the present record. No expert evidence has been presented, comparing the risks of exposure to TRU waste and DU waste. Such matters have not been developed in any hearing of this matter. However, if contention NIRS/PC EC-3/TC-1 is admitted, and this proceeding goes forward, NIRS/PC and LES will be permitted to develop a record addressing the extent and duration of the risks presented by DU. NIRS/PC suggest that the Commission will do best to consider the proper classification of DU waste based upon a full record after such a hearing.

Significantly, in the CEC case an attempt was made to obtain Commission review of the CEC Board waiver ruling. The Commission declined interlocutory review, stating that the waste disposal issues are "subtle and complex" and that it would prefer "to review waste disposal as a whole, rather than in a piecemeal fashion, after a final Licensing Board decision resolving the entire case has been issued." (In re *Louisiana Energy Services* (Claiborne Enrichment Center), CLI-95-7 (June 22, 1995). Such action would be appropriate in this case.

### Conclusion

Congress, in adopting the USEC Privatization Act, expressly based its legislation on the premise that the Commission had not acted to classify DU from enrichment plants as low-level waste or in any other manner. Since that enactment, the Commission has made no determination as called for by Sec. 3113.

Further, when this Commission, in proposing Part 61, specifically focused upon DU disposal, the Commission unambiguously placed such waste into the Greater-than-Class C category, inappropriate for disposal as low-level waste. Thereafter, the Commission removed DU waste from the rulemaking and no longer analyzed its impacts. Plainly, in 1981 the huge volume of DU was principally the problem of DOE, which operated the government-owned gaseous diffusion plants and managed the waste produced by them without Commission regulation. Management and disposal of such waste was not regulated under the Commission's rules. (See 10 CFR 61.2, "Person" definition). The Commission therefore elected to omit uranium from the table of concentration limits and thereby abstain from regulating DU disposal.

Against this history, to hold that DU waste in the volumes generated by enrichment plants is nevertheless intended to be subject to Part 61, without environmental analysis or Commission action, and to use the Commission's considered abstention from regulating DU under Part 61 as the basis to invoke a catchall provision, placing such waste in the Class A category, would demonstrably contradict the structure and purpose of Part 61. Class A is intended to contain waste that presents an acceptable risk after the 100-year period of institutional control. Depleted uranium does not do so; DU does not decay to acceptable levels within 100 years or 500 years, and no rule that presumed otherwise could withstand scrutiny. Depleted uranium is not low-level waste of any class, and NIRS/PC should be allowed to present evidence of that fact.

NIRS/PC submit that the Commission should not make a determination of the disposal methods applicable to DU without a formal rulemaking, with supporting environmental analysis, because such decision affects waste not merely from the proposed LES plant but also from other enrichment plants in other communities. In adopting Part 61, the Commission fully examined

the environmental impacts of disposal of wastes commonly generated at commercial sites in 1981. The request to expand the application of Part 61 to encompass hundreds of thousands of metric tons of DU from enrichment facilities, having a half-life far different from most low-level waste, would require a supplement to the Final EIS. Under Commission rules a supplement is to be prepared:

“(a) if the proposed action has not been taken, the NRC staff will prepare a supplement to a final environmental impact statement for which a notice of availability has been published in the Federal Register as provided in Sec. 51.18, if:

- (1) There are substantial changes in the proposed action that are relevant to environmental concerns; or
- (2) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”  
10 CFR Sec. 51.92

The application of Part 61 to DU, never before subjected to environmental impact analysis, should be examined in a supplemental environmental impact statement and endorsed by the Commission before the Commission can identify it as a “plausible strategy.”

In advancing contention NIRS/PC EC-3/TC-1, NIRS/PC wish to show that, should a determination of the status of DU be attempted in this licensing proceeding, it can have only one outcome, namely, that DU does not constitute low-level waste. Such a showing will make clear what would have become obvious, had the Commission in 1982 chosen to pursue its analysis of the risks and half-life of DU in the disposal scenario. Specifically, NIRS/PC would show that DU, as proposed to be disposed, has a radioactivity well in excess of that of radionuclides that are already clearly precluded from near-surface disposal and has a half-life well in excess of the limits thought to preclude near-surface disposal. (NIRS/PC Pet. 28-31). Therefore, NIRS/PC contend that Part 61 should not be construed to cover DU, which the Commission specifically withdrew from consideration in drafting the rule and did not include in its analyses.

On the question referred to the Commission, the Commission should rule, in agreement with the Board in this case, that NIRS/PC contention EC-3/TC-1 shall be admitted for further proceedings, since there has been no determination by the Commission that DU constitutes low-level waste, and NIRS/PC should therefore be allowed to show that, under the standards of 10 CFR Part 61, DU would not and should not be classified as low-level waste.

Respectfully submitted,



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September 8, 2004

## CERTIFICATE OF SERVICE

Pursuant to 10 CFR § 2.305 the undersigned attorney of record certifies that on September 8, 2004, the foregoing Brief on Behalf of Petitioners Nuclear Information and Resource Service /Public Citizen in Support of NIRS/PC Contention EC-3/TC-1 was served by electronic mail and by first class mail upon the following:

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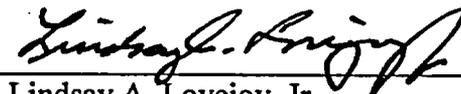
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