UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

November 23, 1992

Docket No. 70-3070

MEMORANDUM FOR: John W. N. Hickey, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

FROM: Lidia A. Roché
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

SUBJECT: LOUISIANA ENERGY SERVICES (LES) MEETING, NOVEMBER 13, 1992

MEETING SUMMARY

On November 13, 1992, the Nuclear Regulatory Commission staff met with representatives of LES to discuss issues related to the disposition of depleted uranium tails (DU). The meeting was requested by LES President, Dr. Howard Arnold. Mr. R. M. Bernero, Director, Office of Nuclear Material Safety and Safeguards (NMSS), chaired the meeting.

The notice of the meeting was forwarded by memorandum of November 6, 1992. In addition, a facsimile of the notice was sent to the intervenor, Citizens Against Nuclear Trash (CANT) on the same date. Enclosure 1 is a list of attendees. Enclosure 2 includes: (1) LES agenda for the meeting; (2) a November 6, 1992, letter from LES to the Department of Energy (DOE) concerning disposition of DU in relation to the Energy Policy Act of 1992; and (3) NRC letter of September 22, 1992, to LES.[1]

Mr. M. McGarry, legal counsel to LES, led the discussion of the agenda items at the meeting. The applicant's position may be summarized as follows:

1. NRC to impart equal treatment to the LES application, and to the certification of the U.S. Enrichment Corporation (USEC) gaseous diffusion plants.

2. DOE to take the lead, LES offering to participate, in the DU national inventory disposal scheme. The time scale of LES operations, with respect to USEC and DOE, allows pace for coordination.

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[1]Please note discrepancy between LES November 6, 1992, letter (page 2, 3rd paragraph), and NRC September 22, 1992, letter (page 1, 3rd paragraph). NRC letter states that although near-surface disposal of such large quantities of DU is not appropriate, "other disposal alternatives under 10 CFR Part 61 may be viable."

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3. Disposition of DU to be an element of LES operational and maintenance costs, not part of decommissioning. In other words, DU removal from the site to be treated as a waste management, not a decommissioning issue. Once LES is selling its product, they will have the means to accumulate funds for the disposition of the tails.

When asked by Mr. McGarry if she had any questions or comments, CANT representative, Ms. Diane Curran, said that she would prefer for LES to have a mechanism in place whereby the funds to dispose of the tails could be obtained through pricing the SWU. Then, with a percentage of the proceeds, perhaps set an escrow account to be used for this purpose only. She expressed concern that funds for the disposition of the tails should not go to the operational and maintenance reserves.

The meeting closed with the applicant stating that they will be shortly responding to our letter dated September 22, 1992, including their plan for the disposition of the DU tails.

/S/

Lidia A. Roché
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

Enclosure: As stated

cc: Attached list

OFC	IMAF	IMAF	IMAF		
NAME	LRoché:ls	FBrown	JSwift		
DATE	11/23/92	11/23/92	11/23/92		

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MEETING WITH LOUISIANA ENERGY SERVICES L.P.

November 13, 1992

Attendees

Name	Affiliation	Telephone
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Jerry J. Swift	NRC/NMSS	301 504-2609
John Hickey	NRC/NMSS	301-504-3328
John Greeves	NRC/NMSS	301-504-3334
Peter LeRoy	LES	704-373-8466
MARC ROWDEN	FRIED, FRANK	202-639-7070
Diane Curran	CANT	202 328-3500
JACK SPRAUL	NRC/NMSS	301-504-2446
Lidia A. Roché	NRC/NMSS	301-5042695
ERICH KRASKA	URENCO	202-337-66[illegible]
[illegible]	DE&S	704/3[illegible]
Howard Arnold	LES	(202) 467-5490

MEETING WITH LOUISIANA ENERGY SERVICES L.P.

November 13, 1992

Attendees

Name	Affiliation	Telephone
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JOSEPH D. PRICE	SAIC	(301) 353-8374
LEITH McDONALD	NRC/NMSS/FCWS	504-3441
Mike McGarry	Winston & Strawn	202-371-5737
Richard Bachmann	NRC/OGC	301 504-1574
Eugene Holler	NRC/OGC	301 504-1520
Michael F. Weber	NRC	301-504-1271
Hallie Brown	NMSS/IMNS	301-504-2605

AGENDA
NRC-LES MEETING
White Flint, November 13, 1992

- NRC letter to LES September 22, 1992
  - · Mentions "national inventory disposal scheme"
  - · Provides specific suggestions for handling DUF_6
  - · Suggests dispositioning of DUF_6 as decommissioning issue

- Energy Policy Act of October 24, 1992 Requires
  - · A DOE uranium inventory study
  - · NRC to certify operation of USEC GDPs

- LES letter to DOE of November 6, 1992
  - · USEC, LES, and DOE will all possess DUF_6
  - · NRC oversight of both LES and USEC
  - · Time scale of LES operations allows coordination
  - · LES offer to participate in national program

- Disposition of DUF_6 an element of LES O&M costs
  - · DUF_6 removal from site separate from decommissioning
  - · LES benefit-cost estimate provided: ER Chapter 8
  - · Cost changes accommodated through product pricing
  - · LES' DUF_6 disposition costs similar to major competitor

- Suggested NRC actions

LOUISIANA ENERGY

Louisiana Energy Services
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(202) 467-5490
(202) 467-5495 Fax

W. Howard Arnold
President

November 6, 1992

Mr. Leo Duffy, Assistant Secretary for Environmental
Restoration and Waste Management
United States Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Re: Louisiana Energy Services
Claiborne Enrichment Center
Energy Policy Act of 1992
Uranium Inventory Study
LES File #: 8.4.6

Dear Mr. Duffy:

The Energy Policy Act of 1992 ("Energy Act"), Sec. 1016 requires that a uranium inventory study be performed by October 24, 1993. Among other things, this study shall include "recommendations for the future use and disposition of such [uranium] inventories." The referenced inventories include depleted tailings (i.e., depleted uranium hexafluoride). By the year 2000, it is expected that at least three domestic entities - the Department of Energy ("DOE"), the United States Enrichment Corporation ("USEC"), and Louisiana Energy Services ("LES") will possess significant quantities of depleted uranium hexafluoride ("DUF_6").

Rather than have three or four separate entities deal with this issue in different ways and on different time scales, we would suggest that DOE take the lead and establish a national program for the handling of this potentially valuable material. Such a program would be most economical for all parties because of economies of scale, and a single point of control would allow the environmental consequences of shipment, conversion, handling and storage to be minimized. Absent such a coordinated program, one or more of these entities could take actions which might prejudice the optimum solution of this situation. LES would be pleased to participate in such a program, and we would be prepared to provide assistance in the study phase and share in expenses for conversion, storage and disposition on an equitable basis.

LES applied for a license to construct and operate the Claiborne Enrichment Center ("CEC") in January 1991. The application is currently under review by the United States Nuclear

Regulatory Commission ("NRC"). We expect a license to construct and operate the facility to be issued in the third quarter of 1994. One of the outstanding licensing issues is disposition of the depleted uranium hexafluoride produced at the CEC. Although not a waste, the NRC has indicated they believe it will be treated as such.

Depleted uranium is a potential energy source, and should be preserved in retrievable form. One potential is as input to a future enrichment plant, which would become economical were the price of separative work to drop significantly or the price of natural uranium ore to rise dramatically. Another potential is as breeding material in liquid metal reactors. Such reactors have been demonstrated to be technically feasible, and may become economical if the price of natural uranium ore becomes high enough. However, such uses are undoubtedly decades away, and extended storage of the material will be required before it can be decided that the material is indeed useful or should be dispositioned.

The LES license application postulated that UF_6 would be sufficiently stable for extended periods, but the NRC, by letter to LES dated September 22, 1992 (copy enclosed), has stated its preference for disposition to be as U_3O_8 in a facility not as yet defined other than that it is not licensed under 10 CFR 50 part 61. Such an approach, our studies show, could be quite costly and result in a disposal plan which reaches well beyond the low level of risk presented by depleted tails. However, we do agree that U_3O_8 is stable, non-corrosive, and insoluble in water so that it would be an excellent form for either extended storage or disposal. In a draft study prepared for DOE by Martin Marietta dated September 1991, it is stated that a preferable option (as opposed to disposing of the DU_3O_8) may be to create a strategic reserve and store the converted material in retrievable form in a facility designed for indefinite, low maintenance operation. This is currently being done in France with a portion of the D[illegible] being generated in the Eurodif gaseous diffusion facility.

DOE currently possesses essentially all the DUF_6 inventory in the United States. However, the USEC will begin to generate this material as soon as the DOE facilities come under its operational control via the lease specified in the Energy Act. Since the Energy Act also specifies that the USEC must be certified by the NRC within two years, we anticipate that the NRC requirements indicated to us in the letter of September 22 will apply to the USEC as well. The LES licensing and the USEC certification regulations are now being examined by the NRC, prompting an early resolution of this issue. This schedule is compatible with the time frame of your uranium inventory study, so we urge that you define its scope broadly enough to include these issues. As our date of commencement of operations is no earlier than the middle of 1997, and the deadline for removal of the first DUF_6 from the CEC site is well beyond 2010, we expect that there will be sufficient time for us to coordinate the specific arrangements for the actual handling of our material once the plan is in place. Indeed, in this time period other parties could also generate depleted uranium in the United States. For example, the Energy Act

contemplates licensing the Atomic Vapor Laser Isotope Separation ("AVLIS") technology currently owned by DOE to a private entity who would build an enrichment plant.

As stated above, LES would be pleased to participate with you and the USEC in discussing this matter at your earliest convenience. We are prepared to provide input to your study, and would look forward to working with you in the implementation phase when our inventory of DUF_6 is to be dealt with.

Sincerely,

Howard Arnold

WHA/pp

Enclosure

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 22, 1992

Docket No: 70-3070

Louisiana Energy Services, L.P.
ATTN: W. Howard Arnold
President
2121 K Street, N.W.
Suite 850
Washington, DC 20037

Gentlemen:

Since disposition of depleted uranium (DU) tails is an important decommissioning licensing issue for the proposed Claiborne Enrichment Center, the Nuclear Regulatory Commission performed an assessment of the issues involved. Our evaluation assumes that the bulk of DU tails will eventually be disposed of as a waste. We examined the acceptability of disposal of the LES enrichment plant tails, as depleted UF_4, in a licensed 10 CFR Part 61 disposal facility as suggested by LES's "Depleted Uranium Hexafluoride Management Study." We have completed our review of this proposal. Based on our analysis, we have reached the following conclusions.

The preferred chemical form for final disposition of the DU tails is U_3O_8 regardless of U-235 concentration. Even if stored tails were later further processed and depleted of U-235, the bulk of DU tails must still be disposed of. Compared with UF_4, U_3O_8 is the more stable physicochemical form and the more compatible, as regards to safety, with long-term disposition of tails. Conversion of the DUF_6 to DUF_4 for final disposition is not acceptable because its physicochemical, long-term stability is incompatible with final disposal under 10 CFR Part 61.

The Environmental Impact Statement (EIS) supporting 10 CFR Part 61 did not contemplate large volumes of DU tails. Our analysis, using methodology similar to that used for the Part 61 EIS, concludes that near-surface disposal of such large quantities of DU tails is not appropriate, both because of its potential radiological impact and its chemical toxicity. However, other disposal alternatives under 10 CFR Part 61 may be viable; e.g., deep mine disposal. Therefore, disposal options, other than near-surface disposal, must be considered for the DU tails. Disposal options must be accompanied with supporting analyses. The analyses should include funding provisions for storage, tails conversion to the oxide form, final disposition and, if applicable, transportation costs.

Your analyses should also consider an appropriate schedule for conversion and disposal. Since you are proposing to start production in phases, which may take several years, the conversion of DUF_6 to DU_3O_8, or other suitable waste form, should start 10 to 15 years after initiating production, or after generating 80,000 tons of tails, whichever is reached first.

In summary, demonstration of viable means of DU tails ultimate disposition and provision for financial assurance are needed. It is recognized that the total volume of waste to be generated for the LES Claiborne Enrichment Center is part of a much larger national inventory. Therefore, LES DU tails disposition may be addressed as part of the national inventory disposal scheme.

We would be pleased to discuss these matters further with you after you have considered them. If you have any questions, please contact Dr. Lidia A. Roche' at (301) 504-2695.

Sincerely,

for

John W.N. Hickey, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Safety
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cc: Attached list

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Administrative Judge
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LES MEETING NOVEMBER 13, 1992

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