

March 29, 2005

NEF#05-016

ATTN: Document Control Desk
Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Louisiana Energy Services, L. P.
National Enrichment Facility
NRC Docket No. 70-3103

Subject: Clarifying Information Related to Depleted UF₆ Disposition Costs and Request for License Condition.

- References:**
1. Letter NEF#03-003 dated December 12, 2003, from E. J. Ferland (Louisiana Energy Services, L. P.) to Directors, Office of Nuclear Material Safety and Safeguards and the Division of Facilities and Security (NRC) regarding "Applications for a Material License Under 10 CFR 70, Domestic licensing of special nuclear material, 10 CFR 40, Domestic licensing of source material, and 10 CFR 30, Rules of general applicability to domestic licensing of byproduct material, and for a Facility Clearance Under 10 CFR 95, Facility security clearance and safeguarding of national security information and restricted data"
 2. Letter NEF#04-002 dated February 27, 2004, from R. M. Krich (Louisiana Energy Services, L. P.) to Director, Office of Nuclear Material Safety and Safeguards (NRC) regarding "Revision 1 to Applications for a Material License Under 10 CFR 70, "Domestic licensing of special nuclear material," 10 CFR 40, "Domestic licensing of source material," and 10 CFR 30, "Rules of general applicability to domestic licensing of byproduct material"
 3. Letter NEF#04-029 dated July 30, 2004, from R. M. Krich (Louisiana Energy Services, L. P.) to Director, Office of Nuclear Material Safety and Safeguards (NRC) regarding "Revision to Applications for a Material License Under 10 CFR 70, "Domestic licensing of special nuclear material," 10 CFR 40, "Domestic licensing of source material," and 10 CFR 30, "Rules of general applicability to domestic licensing of byproduct material"

11/15/01

4. Letter NEF#04-037 dated September 30, 2004, from R. M. Krich (Louisiana Energy Services, L. P.) to Director, Office of Nuclear Material Safety and Safeguards (NRC) regarding "Revision to Applications for a Material License Under 10 CFR 70, "Domestic licensing of special nuclear material," 10 CFR 40, "Domestic licensing of source material," and 10 CFR 30, "Rules of general applicability to domestic licensing of byproduct material"
5. Letter NEF#05-009 dated March 3, 2005, from R. M. Krich (Louisiana Energy Services, L. P.) to Director, Office of Nuclear Material Safety and Safeguards (NRC) regarding "Clarifying Information Related to Decommissioning Funding Plan"
6. Letter NEF#05-004 dated February 11, 2005, from R. M. Krich (Louisiana Energy Services, L. P.) to Director, Office of Nuclear Material Safety and Safeguards (NRC) regarding "Response to NRC Request for Additional Information Related to Preparation for the Final Environmental Impact Statement for the National Enrichment Facility"

By letter dated December 12, 2003 (Reference 1), E. J. Ferland of Louisiana Energy Services (LES), L. P., submitted to the NRC applications for the licenses necessary to authorize construction and operation of a gas centrifuge uranium enrichment facility. Revision 1 to these applications was submitted to the NRC by letter dated February 27, 2004 (Reference 2). Subsequent revisions (i.e., revision 2 and revision 3) to these applications were submitted to the NRC by letters dated July 30, 2004 (Reference 3) and September 30, 2004 (Reference 4), respectively.

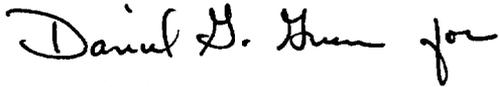
The Reference 5 letter, in part, provided references to supporting documentation for the depleted uranium hexafluoride (UF_6) disposition costs for the National Enrichment Facility (NEF). In a March 17, 2005, conference call between LES and NRC representatives, the NRC requested that clarification be provided concerning the depleted UF_6 disposition costs, including an explanation of development of the UF_6 disposition costs using the references identified in the Reference 5 letter. Some of the supporting documentation and explanation of the development of the depleted UF_6 disposition costs include information that is considered by LES to be confidential (i.e., proprietary) pursuant to 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," paragraph (a)(4). Accordingly, the proprietary information will be submitted in accordance with 10 CFR 2.390 (b)(1) in a forthcoming letter. The remaining supporting documentation and explanation of the development of the depleted UF_6 disposition costs are included in the Enclosure, "Clarifying Information Related to Depleted UF_6 Disposition Costs."

The Reference 6 letter provided the LES responses to NRC Requests for Additional Information (RAI), needed to support preparation of the final environmental impact statement for the NEF. The LES response to NRC RAI 4-6.A, in the Reference 6 letter, indicated that a facility that employs a depleted UF_6 deconversion process that results in the production of anhydrous hydrogen fluoride (HF) would not be pursued. Accordingly, LES formally requests a separate license condition be issued in the license for construction and operation of the NEF that states, "For the disposition of depleted UF_6 , LES shall not use a depleted UF_6 deconversion facility that employs a process that results in the production of anhydrous HF."

March 29, 2005
NEF#05-016
Page 3

If you have any questions or need additional information, please contact me at 630-657-2813.

Respectfully,



R. M. Krich
Vice President – Licensing, Safety, and Nuclear Engineering

Enclosure:

Clarifying Information Related to Depleted UF₆ Disposition Costs

cc: T.C. Johnson, NRC Project Manager
M.C. Wong, NRC Environmental Project Manager

ENCLOSURE

Clarifying Information Related to Depleted UF₆ Disposition Costs

Clarifying Information Related to Depleted UF₆ Disposition Costs

The estimated cost of converting the depleted uranium hexafluoride (DUF₆) to depleted triuranium octoxide (DU₃O₈), \$2.67/kg depleted (D)U, is based on analyses performed by Louisiana Energy Services (LES), L.P., using information provided by Urenco. The analyses input and detailed results are considered proprietary and will be submitted separately. The cost of neutralizing the hydrogen fluoride byproduct of the conversion process to calcium fluoride (CaF₂) is subsumed in the conversion cost based on it being a step in the process and the conservative nature of the estimate. The estimate of approximately \$0.02/kgDU to dispose of the CaF₂ as industrial waste is based on information in a November 19, 2004 paper attached to an e-mail from Rod Krich to James Curtiss, dated November 21, 2004, and information in the November 21, 2004, e-mail. The e-mail and its attachment are attached (Attachment 1) to this enclosure.

The estimated cost for disposing of the depleted U₃O₈, \$1.14/kgDU, was derived from calculations based on information provided by Waste Control Specialists. The \$1.14/kgDU estimate is approximately the average of the costs per kgDU assuming a U₃O₈ density of 2.7 g/cc and 3.0 g/cc. The input and detailed results of this estimate are considered proprietary and will be submitted separately. Consistent with this estimate, a letter from Al Rafati, Envirocare of Utah, to E. James Ferland, LES, dated February 3, 2005, is attached (Attachment 2). The following conversion factors were used to convert from kgDUF₆ and kgDU₃O₈ to kgDU.

$$1 \text{ kgDUF}_6 = 0.68 \text{ kgDU}$$

$$1 \text{ kgDU}_3\text{O}_8 = 0.85 \text{ kgDU}$$

The estimated cost of transporting the DUF₆ and the DU₃O₈, \$0.85/kgDU was calculated from the range of costs provided by Transportation Logistics International (TLI), a worldwide shipper of uranium. The \$0.85/kgU estimate is approximately the average of the lower figure from the ranges for shipping DUF₆ and DU₃O₈. The specific range of costs is considered to be proprietary and will be submitted separately. The \$0.85/kgDU is independent of the distance traveled within the US and an e-mail from Rod Fisk, TLI, to Rod Krich, LES, dated March 23, 2005, providing the basis for this conclusion is attached (Attachment 3).

The overall estimate for dispositioning the DUF₆ is therefore \$4.68/kgU. Adding a 25% contingency to this figure brings it to \$5.85/kgDU. Consistent with this estimate, the US Department of Energy (DOE) has provided its cost estimate for dispositioning the DUF₆ generated by the National Enrichment Facility in its letter from Paul M. Golan, (DOE), to Rod Krich, LES, dated March 1, 2005 (Attachment 4). The DOE estimate of \$3.34/kg DUF₆ equates to \$4.91/kgDU, which is in good agreement with the LES estimate.

ATTACHMENT 1

**E-Mail and Attachment from R. Krich (LES) to J. Curtiss (Winston & Strawn)
Calcium Fluoride Disposal Summary
November 21, 2004**

-----Original Message-----

From: rod.krich@exeloncorp.com [mailto:rod.krich@exeloncorp.com]
Sent: Sunday, November 21, 2004 5:44 PM
To: Curtiss, James
Subject: FW: Calcium Fluoride Disposal Summary

Jim,

Here is information relating to the disposal of CaF₂ at the Lea County landfill. Based on the costs given by George, he and I estimate that the cost will be about \$0.02/kgU in 2004 dollars.

Rod

-----Original Message-----

From: HARPER George A [mailto:George.Harper@framatome-anp.com]
Sent: Friday, November 19, 2004 3:58 PM
To: 'rod.krich@exeloncorp.com'; 'schwartz@energyresources.com'
Subject: Calcium Fluoride Disposal Summary

Rod / Mike,

Attached summarizes my discussions earlier this week regarding CaF₂ disposal at the landfill. Addresses classification of waste, disposal cost and landfill capacity.

George

<<CaF2 Disposal.doc>>

George A. Harper, P.E.
Manager, Regulatory Compliance Programs
Framatome ANP, Inc.
An AREVA and Siemens Company

LES-05297

11/19/2004

CaF₂ Disposal Option

Objective:

Evaluate feasibility of disposing of calcium fluoride (CaF₂) at the Lea County Landfill. Include considerations of landfill disposal, cost and available landfill capacity.

Evaluation:

Framatome ANP (FANP) first contacted Dennis Holmberg on 11/15/04. Admin. Assistant informed us that Holmberg had resigned. Recommended we contact J.D. Norby, Lea County Public Works Director (Office: 505-396-8609, Cell: 505-370-4772). Contacted Norby on 11/15/04. Norby will be leaving his position 12/16. He recommended we contact his Admin. Assistant (Cristene at office number) after that date for new contact name.

FANP explained that we were exploring the option of disposing CaF₂ at the landfill. He asked for an approximate time frame and FANP stated that disposal could commence in the 6 to 10 year time frame. He noted that landfill is permitted for industrial waste. He further recommended speaking with Keith Gordon of Gordon Environmental to ascertain if CaF₂ could be disposed at the landfill. Cost to dispose is presently \$24/ton, which will rise to \$31/ton in the beginning of 2005. He recommended that we could escalate disposal cost 4% per year beyond 2005. Landfill capacity was quoted by Norby as sufficient for 100 years.

Subsequently spoke with Keith Gordon on 11/16/04 (Office: 505-867-6990, Cell: 505-301-2026). Following main points:

Discussed that aqueous HF would be neutralized with lime to produce CaF₂. FANP explained that it could contain trace amounts of uranium. The CaF₂ would need to be classified as a "Industrial Solid Waste" in order to be considered for disposal at the landfill. The criteria to determine if the CaF₂ could be disposed at the landfill include:

- It cannot become hazardous when wet – based on our discussion this condition is met.
- It needs to be dry when disposed – this condition should be able to be met.
- It cannot be low level waste, byproduct material, transuranic, or spent fuel – this condition is met.

The landfill will need a "Disposal Management Plan" (DMP) to dispose of the CaF₂ which would be approved by NMED. The DMP is required when a new waste stream is identified for disposal. Gordon noted that NMED has approved all of their DMP submittals to date. The DMP specifies waste stream, form, packaging, handling requirements, etc. of the waste stream.

Gordon confirmed disposal cost (\$31/ton in 2005) and landfill capacity (80 to 100 years or 20 million cubic yards).

LES-05299

Based on an assumed disposal cost of \$31/ton for CaF₂ as a bulk powder (density approximately 100 lbs/ft³), FANP estimates that the disposal cost of the CaF₂ powder would be about \$1.55/ft³, or \$41.85/yd³. This does not include any allowance for the container package.

In addition, the cost associated with the weight of the disposal container should be included. Based on a typical package size of a 55-gallon drum, the container weight could add about 10% to the total disposal weight of the CaF₂. Therefore, the total weight of CaF₂ should be increased by 10% when estimating total CaF₂ disposal costs based on weight.

ATTACHMENT 2

**Letter from A. Rafati (Envirocare of Utah) to E. Ferland (LES)
Disposal of Depleted U_3O_8
February 3, 2005**



ENVIROCARE OF UTAH, LLC

SAFE AND SECURE

February 3, 2005

By Facsimile (505) 944-0198 and UPS

Mr. E. James Ferland
President and Chief Executive Officer
Louisiana Energy Services, L.P.
One Sun Plaza, 100 Sun Avenue, N.E., Suite 204
Albuquerque, New Mexico 87109

Dear Mr. Ferland:

As a follow-up to our recent discussions, I confirm that the existing licenses and permits for Envirocare's Clive, Utah, disposal facility currently allow Envirocare to dispose of depleted U_3O_8 subject to the material meeting Envirocare's licenses, permits and operational requirements. If Envirocare were to enter into an agreement with LES for the disposal of depleted U_3O_8 , we would dispose of this material at our facility using the shallow land burial method in accordance with our regulatory authorizations in a cell with a cap (i.e., a Class A disposal cell). Envirocare has previously received and disposed of depleted U_3O_8 in this manner at our facility in Clive, Utah.

At your request, Envirocare has also reviewed the cost estimate for depleted U_3O_8 disposal contained in the license application filed before the U.S. Nuclear Regulatory Commission by Louisiana Energy Services for the National Enrichment Facility. Based on our review, and considering Envirocare's experience in disposing of depleted U_3O_8 , the cost range presented in the current LES license application is a conservative estimate of what it would currently cost at standard depleted U_3O_8 density to dispose of such material at Envirocare's Utah facility. Of course, disposal charges are subject to change in the future based on a variety of factors.

Please let me know if you need additional information.

Sincerely,

Al Rafati
Executive Vice President

ATTACHMENT 3

**E-Mail from R. Fisk (TLI) to R. Krich (LES)
Transportation of Depleted UF6 and U3O8
March 23, 2005**

Krich, Rod M.

From: Rod Fisk [rfisk@tliusa.com]
Sent: Wednesday, March 23, 2005 2:44 PM
To: rod.krich@exeloncorp.com
Subject: Transportation of Depleted UF6 and U3O8

Good afternoon Rod,

You have requested that I clarify my comments to the effect that variation in the distance that material has to be moved has a minimal effect on the overall transportation costs for transporting depleted uranium hexafluoride in 48X48Y cylinders and drums of U3O8, in a 20' ISO container. These are the standard industry methods for moving these materials.

Given the fact that overhead costs for transportation of radioactive materials include: material packaging, marking and labeling, communications, vehicle tracking, vehicle maintenance, driver training, security, loading and unloading of cargo, insurance etc. the impact of additional mileage, which affects only time and fuel, amounts to fractions of a cent per kilogram/mile. In a dedicated program where vehicles, manpower and equipment are managed for optimal efficiency, the effect of mileage can probably be reduced even further.

Please do not hesitate to contact me if you need additional information.

Sincerely,

Rod Fisk
Chief Executive Officer
TLI Inc.

The information contained in this message may be commercially sensitive and/or legally privileged. It is intended solely for the person(s) to whom it is addressed. If you are not the named recipient, you are on notice of its status. Please notify the sender immediately by return fax or email and then delete/destroy this message. You must not disclose it to any other person, copy or distribute it for any purpose.

3/28/2005

ATTACHMENT 4

**Letter from P. Golan (DOE) to R. Krich (LES)
Conversion and Disposal of Depleted Uranium Hexafluoride (DUF6) Generated by
Louisiana Energy Services, L.P. (LES)
March 1, 2005**



Department of Energy
Washington, DC 20585

March 1, 2005

Mr. Rod Krich
Vice President, Licensing, Safety and Nuclear Engineering
Louisiana Energy Services, LP
2600 Virginia Avenue, N.W.; Suite 610
Washington, D.C. 20037

**RE: Conversion and Disposal of Depleted Uranium Hexafluoride (DUF6)
Generated by Louisiana Energy Services, LP (LES)**

Dear Mr. Krich:

The purpose of this letter is to respond to LES' inquiry, as detailed in your letter dated February 28, 2005, as to the anticipated storage, conversion and disposal costs for the DUF6 Source Material product to be generated by LES' proposed commercial uranium enrichment facility, in the event LES were to request that the Secretary accept the DUF6 for disposal.

Should the Department decide to accept, upon request, such DUF6 for conversion and disposal pursuant to authorities granted to the Department under the Atomic Energy Act or other authorities, the Department's acceptance of such material would necessitate the negotiation of an agreement for storage, conversion and disposal services that would include full recovery of the Department's costs, including a pro rata share of any capital costs, and that would include the terms and conditions under which the Department would accept title to and possession of the DUF6.

In response to the initial inquiry made by LES, the Department initiated a cost estimate for providing conversion and disposal services to depleted uranium generators. The cost estimate is based on LES' projection that it would generate approximately 7,800 metric tons of DUF6 annually, expected to begin in 2010.

The Department estimates that the cost of converting and disposing of LES' projected DUF6 inventory would be approximately \$3.34 per kilogram of DUF6 in 2004 dollars. This estimated price reflects the following costs: construction (capital costs); storage of the DUF6 pending conversion; DUF6 conversion; transportation of depleted uranium to a disposal site (approximately 1900 miles); disposal of depleted uranium oxide as Low Level Radioactive Waste; and decontamination and decommissioning (D&D) of the conversion facility. For completeness, this cost estimate also includes transportation (but not packaging for transportation) of the LES DUF6 to the conversion site (approximately 1500 miles).



The following is an approximate break-out of the four principal components of the cost estimate (per kilogram of DUF6):

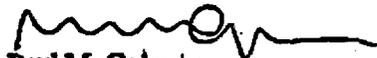
Conversion (capital and operating costs)	\$2.68
Transportation	\$0.11
Storage	\$0.003
Disposal (including D&D)	\$0.55
TOTAL	\$3.34

The Department's cost estimate assumes that the DUF6 would be converted, stored, and disposed of consistent with the terms and conditions of the Department's current contract for the construction and operation of the conversion facilities at the Portsmouth and Paducah Gaseous Diffusion Plants and DUF6 storage facilities. The cost estimate also assumes that acceptance of LES' DUF6 would not alter the Department's currently anticipated operating conditions and assumptions for the storage, conversion, and disposal facilities. The cost estimate further assumes that LES' DUF6 cylinders would meet Department of Transportation (DOT) transportation requirements, and accordingly the cost estimate does not include any incremental costs for meeting such DOT requirements. The cost estimate does not assume any resale or reuse of any products resulting from the conversion process. The Department's cost estimate takes into account the conversion and disposal of LES' projected inventory as well as the Department's current inventory of DUF6.

The Department's cost estimate is a long-term forecast that is subject to recalculation and change as assumptions and circumstances change and as the Department receives actual cost and performance data from the conversion project after operations begin in the year 2007. The Department understands that LES may provide the estimate contained in this letter to the Nuclear Regulatory Commission (NRC) in support of LES' decommissioning cost estimate during the license application process, and that if a license is granted that there is an established process at the NRC for a licensee to adjust its decommissioning cost estimate every three years, and that this process would account for future refinements in the cost estimate for the disposal of depleted uranium. Before accepting any DUF6, the Department would have to comply with all applicable laws, including the National Environmental Policy Act. Additionally, this letter does not commit the Department to the expenditure of funds, and any agreement for acceptance of DUF6 is subject to the negotiation of terms and conditions, must be in writing, and signed by the authorized DOE official.

If you have any questions about the cost estimate or other contents of this letter, please contact Mr. Larry Brown, Senior Advisor at (202) 586-9500.

Sincerely,



Paul M. Golan
Principal Deputy Assistant Secretary for
Environmental Management