



10 CFR 30.6  
10 CFR 40.5  
10 CFR 70.5

December 10, 2004

NEF#04-052

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

DOCKETED   
USNRC   
  
December 21, 2005 (3:30pm)   
  
OFFICE OF SECRETARY   
RULEMAKINGS AND   
ADJUDICATIONS STAFF

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

Subject: Response to NRC Request for Additional Information Regarding Decommissioning Funding Plan.

- 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"

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U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of Louisiana Energy Services, L.P.

Docket No. 70-3103-M Official Exhibit No. LES 107

OFFERED by Applicant/Licensee Intervenor \_\_\_\_\_

NRC Staff Other \_\_\_\_\_

IDENTIFIED on 10/26/85 witness Panel LES Disposal

Action Taken: ADMITTED REJECTED WITHDRAWN

Reporter/Clerk Bethany Engel

25-01-05

10/26/85 10:00 AM

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 dated October 20, 2004; from T. C. Johnson (NRC) to R. Krich (Louisiana Energy Services) regarding "Louisiana Energy Services - Request for Additional Information on Decommissioning Funding Plan"

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.

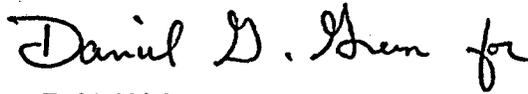
By letter dated October 20, 2004 (Reference 5), the NRC provided the technical review of decommissioning funding plan information included in Revision 2 of the Safety Analysis Report, dated July 30, 2004, and requested additional information and clarification be provided within 30 days (i.e., by November 19, 2004). In a November 18, 2004; telephone call between LES and NRC representatives, it was agreed that the LES responses to the NRC Request for Additional Information (RAI) would be delayed past the November 19, 2004; due date. In a subsequent discussion with T. Johnson (NRC), a submittal date of December 10, 2004 was committed to. This letter transmits the LES responses to the requested additional information and clarifications included in the Reference 5 letter, with the exception of the RAIs related to the cost to disposition depleted uranium hexafluoride. The requested information on the cost to disposition depleted uranium hexafluoride will be forthcoming. Some of the decommissioning funding plan information is classified information (i.e., confidential national security information (CNSI)). Therefore, updated information associated with the classified portion of the decommissioning funding plan, resulting from the LES responses to the RAIs, has been separated from the rest of the unclassified decommissioning funding plan information and is being submitted separately in accordance with 10 CFR 95.39, "External transmission of documents and materials."

Attachment 1 to this letter provides the RAIs and the associated LES response. Attachment 2 to this letter provides unclassified information, in the form of updated License Application pages that reflect the LES response to the RAIs. The unclassified updated pages will be formally incorporated into the License Application in a future revision.

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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

Attachments:

1. LES response to October 20, 2004, Request for Additional Information
2. Updated License Application Pages

cc: T.C. Johnson, NRC Project Manager

**ATTACHMENT 1**

**Louisiana Energy Services  
Response to October 20, 2004  
Request for Additional Information**

**Louisiana Energy Services  
Requests for Additional Information on  
Decommissioning Funding Plan, Revision 2**

**1. Tables 10.1 through 10.3**

Provide additional detail in the tables to justify the proposed decommissioning cost estimates.

Under 10 CFR 70.25, an applicant for a uranium enrichment facility is required to prepare a decommissioning funding plan. The decommissioning funding plan includes a site-specific cost estimate for decommissioning and a financial assurance mechanism ensuring that funds will be available to decommission the facility. Guidance on preparing decommissioning cost estimates is provided in NUREG-1757, Volume 3, "Consolidated NMSS Decommissioning Guidance." Section 4.1 of NUREG-1757, Volume 3, states that a cost estimate for decommissioning would be judged acceptable if it meets nine specific criteria, including:

1. **Criterion 2:** The cost estimate is based on documented and reasonable assumptions,
2. **Criterion 3:** The unit cost factors used in the cost estimate are reasonable and consistent with NRC cost estimation reference documents, and
3. **Criterion 5:** The cost estimate applies a contingency factor of at least 25 percent to the sum of all estimated costs.

In preparing the decommissioning cost estimate, Louisiana Energy Services (LES) modified the tables in NUREG-1757, Appendix A to reflect that their costs were derived from recent Urenco decommissioning experience. It appears LES used an activity based methodology to estimate costs at a less detailed level than the Appendix A tables use. This activity based approach does not provide sufficient detail to allow independent verification of criterion 2 and 3 (described above). Put another way, although LES may use a reasonable basis for their cost estimate (i.e., past decommissioning experience), they have not provided the detail necessary to verify that their cost estimate meets the guidance criteria. Generally speaking, additional labor detail, more information on the decontamination methods (which have not been specified) and the total area/volume of the component to be cleaned, and the specific unit costs for waste packaging, shipping, and disposal costs are needed to determine if LES's cost estimate is adequate.

- a. **Additional Labor Detail:** Labor hours by category were not estimated for planning and preparation, restoration of contaminated areas of facility grounds, or the final radiation survey. In addition, labor detail for the project management and HP&S/Chem labor categories were not broken out by component. Without this detail, the total labor costs cannot be calculated, and thus, the impact on the cost of using a third party contractor to conduct decommissioning also cannot be calculated. That is, it is impossible to calculate the magnitude of adding contractor overhead and profit.
- b. **Decontamination or dismantling of radioactive facility components:** LES has not specified decontamination methods. Instead, LES notes that "Urenco plant experience in Europe has demonstrated that conventional decontamination techniques are effective for all plant items." However, without additional detail on the decontamination methods, we cannot verify if appropriate unit costs and labor rates were used, if all potential contaminated areas and equipment were included, if the costs include cleaning

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materials, and if disposal of these materials were included. Further, while tables 10.1-1(a)-(f) sometimes provide information on the total dimensions of each type of component, this information is also frequently missing. Total dimensions are multiplied by unit costs of the decontamination method to determine the total decontamination costs. Total dimensions should be provided for all facility components expected to be contaminated (in some cases this information may be classified).

- c. **Packaging and shipping of radioactive wastes:** Because packaging and shipping costs were included in the waste disposal costs, we cannot verify that adequate labor, containers, and transport rates were used, that an adequate number of containers were used, or that differences in shipping distance do not matter. This information should be provided for both the tails disposition costs as well as the disposal costs for wastes generated during decommissioning.

**LES Response**

- 1.a The attached revised Safety Analysis Report (SAR) Table 10.1-2, "Planning and Preparation," Table 10.1-5, "Final Radiation Survey," Table 10.1-7, "Total Work Days by Labor Category," and Table 10.1-9, "Total Labor Cost by Major Decommissioning Task," provide the requested additional labor detail for the "planning and preparation" and "final radiation survey" cost estimates, respectively. The estimated man-hours provided have been proportioned based on the experience-based estimate that forms the basis for the original estimated activity costs and durations for these activities. Most costs are reflected under the Project Management labor cost column. These costs include managerial, engineer, technical writing and administrative support costs. Additional labor details for Health Physics and Safety/Chemistry (HP&S/Chem) technicians and laborers (or multi-task workers) are appropriately shown for the site characterization activity and for activities for the final radiation survey work.

The attached SAR Table 10.1-3, "Decontamination or Dismantling of Radioactive Components," is also revised to show the detailed man-hours for the Project Management and HP&S/Chem labor categories.

The costs associated with the "restoration of contaminated areas of facility grounds" are activity-based and described below in the LES response to Request for Additional Information (RAI) 7.

The attached revised SAR pages will be formally incorporated into SAR Chapter 10, "Decommissioning," in a future revision.

- 1.b The decommissioning cost estimate for the NEF is based on the Urenco decommissioning cost estimate methodology. For unclassified decommissioning work (i.e., other buildings), the methodology involves producing a "bottom-up" cost estimate consisting of an inventory of all contaminated or potentially contaminated equipment. The type of equipment includes fume cupboards, benches, tanks, pipework, etc. Based

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through 10.1-1F and Table 10.1-10. These tables provide the following information.

- The Technical Services Building (including the total area). This building houses various unclassified facilities such as a vent room, environmental laboratory, etc.
- The equipment within the above buildings including quantity and sizes when specified, i.e., sinks, laboratory benches, fume hoods, pipework, etc.
- Gaseous Effluent Vent System, Blending and Sampling, and Test and Post Mortem Facility.
- Decommissioning of the dismantling/decontamination facility.
- The disposal volume for contaminated waste including the transportation costs.

In response to NRC RAI 1.a, the working hours for Craftsman, Supervision, Project Management and HP&S/Chem labor categories associated with decontamination and dismantling of radioactive components have been provided in the attached revised SAR Table 10.1-3. Using the information in existing SAR Tables 10.1-1B through 10.1-1F, the worker unit cost schedule information in existing SAR Table 10.1-8, and attached revised SAR Table 10.1-3, the unit cost associated with decontamination and dismantling can be derived, to the extent practicable, on a "per component" or "per unit length" basis, as applicable.

For the classified components, the response to NRC RAI 1.b is classified and is provided in a separate submittal.

- 1.c In Table 10.1-10, "Packaging, Shipping, and Disposal of Radioactive Wastes," the unit cost for waste disposal ranges from \$100/ft<sup>3</sup> to \$150/ft<sup>3</sup>. These unit costs include packaging, shipping and disposal of bulk Class A low-level radioactive waste at the Envirocare facility in Utah. The unit cost of \$100/ft<sup>3</sup> was used for bulk (large volume) waste product disposal where the large volume results in a lower rate (e.g., the aluminum disposal volume). Otherwise, the unit cost of \$150/ft<sup>3</sup> was conservatively applied for the smaller volume miscellaneous wastes. Early project discussions with Envirocare relative to the expected waste streams indicated that use of a disposal cost of \$75/ft<sup>3</sup> was appropriate. Envirocare also recommended using a \$2.00/mile transportation cost. For the unit cost of \$100/ft<sup>3</sup> and similarly for the \$150/ft<sup>3</sup> unit cost, \$25/ft<sup>3</sup> adequately accounts for the associated packaging and transportation costs from the NEF site to the Envirocare facility in Utah.

The shipping costs associated with depleted uranium byproduct disposition are included in the estimates provided in the Introduction. The packaging costs, i.e., filling the certified cylinders with depleted uranium hexafluoride and filling the disposal drums with depleted uranium oxide, are part of the enrichment and deconversion processes, respectively, and are therefore considered as part of the operating costs of these facilities.