NATIONAL ENRICHMENT FACILITY

RAS 10908

10 CFR 30.6
10 CFR 40.5
10 CFR 70.5

DOCKETED
USNRC

2005 DEC 21 PM 3:30

OFFICE OF THE SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

January 7, 2005

NEF#05-001

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: Response to NRC Request for Additional Information Regarding Depleted Uranium Hexafluoride Disposition Costs

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"

LES-05306
LES Exhibit 84

Template = SECY-028

SECY-02

U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of Louisiana Energy Services, LP

Docket No. 70-3103-ML Official Exhibit No. LES 84

OFFERED by: (Applicant/Licensee) Intervenor _____

NRC Staff Other _____

IDENTIFIED on 10/24/05 Witness/(Panel) DE Deconversion

Action Taken: (ADMITTED) REJECTED WITHDRAWN

Reporter/Clerk Bethany Engel

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"

6. Letter NEF#04-052 dated December 10, 2004, 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 Regarding 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 requested additional information and clarification regarding the decommissioning funding plan be provided.

The Reference 5 letter includes Request for Additional Information (RAI) 1.c, RAI 2, RAI 3, and RAI 5 concerning depleted uranium hexafluoride disposition costs. In the Reference 6 letter, LES indicated that the information concerning depleted uranium hexafluoride disposition costs would be forthcoming. Attachment 1 to this letter provides the LES responses to RAI 1.c, RAI 2, RAI 3, and RAI 5. Attachment 2 to this letter provides information, in the form of updated License Application pages, which reflects the LES response to these RAIs. The updated pages will be formally incorporated into the License Application in a future revision.

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

Respectfully,

Daniel B. Green for

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

Attachments:

1. LES response to October 20, 2004, Request for Additional Information 1.c, 2, 3, and 5
2. Updated License Application Page

cc: T.C. Johnson, NRC Project Manager

ATTACHMENT 1

Louisiana Energy Services
Response to October 20, 2004,
Request for Additional Information 1.c, 2, 3, and 5

Louisiana Energy Services
Requests for Additional Information on
Depleted Uranium Hexafluoride Disposition Costs

Introduction

In preparing the cost estimate for dispositioning the depleted uranium byproduct generated at the National Enrichment Facility (NEF), we first determined that we needed to consider the pertinent historical estimates that were available. These are the estimates in the Lawrence Livermore National Laboratory (LLNL) report (LLNL, 1997) and the Claiborne Enrichment Center (CEC) license application (CEC, 1991). We also determined that recent actual contract costs such as the Uranium Disposition Services (UDS) contract with the U.S. Department of Energy (DOE) and the contracts that Urenco has to disposition its byproduct would logically be given greater weight in arriving at our cost estimate. Finally, we considered the range of variables that affect the cost estimate, such as:

- Deconversion process
- Resale or disposal of the deconversion hydrogen fluoride (HF) byproduct
- Transportation mode and distance, and
- Disposal method.

We found that the three estimates and the Urenco contracts covered most if not all likely combinations of these variables.

In using the historical estimates (i.e., LLNL and CEC), we decided to treat these as "stand-alone" estimates; that is, we would not try to adjust these estimates to account for more recent information or for NEF site specific considerations since such adjustments, such as accounting for the more recent (i.e., reduced) cost of deconversion, transportation distance, HF byproduct resale, etc., may not be consistent with the methodology that was used to derive the original estimate. Accordingly, the manner in which we estimated the cost was to consider actual depleted uranium disposition costs (i.e., UDS and Urenco contracts) taking into account typical transportation and disposal (e.g., burial) costs. Based on these considerations, we established $5.50/kgU as the Louisiana Energy Services (LES) estimate. Since the Urenco contract costs were proprietary, we compared this figure to the average of the historical and UDS figures. This comparison showed the $5.50/kgU estimate to be reasonable. If, for example, the average of the historical and UDS costs had been higher, the LES estimate would have been adjusted commensurately.

Considering the above description of how the historical estimates were used to arrive at an LES cost estimate, revising the cost estimates to account for different values of the variables that make up the cost is not meaningful. Instead, as agreed to during a telephone conference with NRC representatives and their consultants on November 18, 2004, we are providing the following estimate of costs for the three components that make up the total disposition costs estimate, i.e., deconversion, disposal, and transportation (note that costs are in 2004 dollars and the $5.50/kgU (2002 dollars) has been escalated by a factor of 2.1% to $5.62/kgU). These individual cost estimates are based on information from corresponding vendors.

Conversion: $2.69/kgU

This estimate is considered conservative and is independent of the deconversion process. This estimate includes the cost of disposing of the neutralized HF as industrial waste (i.e., approximately $0.02/kgU). Contrary to assumptions used in the LLNL report, actual experience shows that the HF product from the deconversion process is not contaminated above allowable free release levels.

Disposal: $1.14/kgU

This estimate is considered to reflect the costs associated with expected disposal methods.

Transportation: $0.85/kgU

This estimate is independent of distance traveled and accounts for the different rates for transporting UF_6 or U_3O_8.

Total: $4.68/kgU
25% contingency $5.85/kgU

Based on continuing discussions with the DOE, we expect the DOE cost estimate to disposition the depleted uranium byproduct to be significantly lower than the $5.85/kgU figure (i.e., under $5.00/kgU). Accordingly, while we consider our original estimate of $5.62/kgU to be a reasonable estimate for the purposes of estimating decommissioning costs, we have revised it to the $5.85/kgU figure to be consistent with this more recent conservative estimate.

Louisiana Energy Services
Requests for Additional Information on
Depleted Uranium Hexafluoride Disposition Costs

1. **Tables 10.1 through 10.3**

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.c The requested information regarding packaging and shipping of radioactive wastes for wastes generated during decommissioning was provided in letter NEF#04-052 dated December 10, 2004, 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 Regarding Decommissioning Funding Plan.

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.

5. Section 10.3, p. 10.3-3

Provide a contingency factor of 25 percent for tails disposition.

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.

LES is applying a 25 percent contingency factor to all decommissioning costs except those associated with tails disposition. LES explains that the 25 percent contingency factor was not applied to the costs associated with tails disposition because tails disposition contingency costs are built into the LLNL cost estimate which provides for a 20 percent contingency factor for conversion plant process and manufacturing facility and balance of plant capital costs and a 30 percent contingency factor for process and manufacturing equipment. In addition, LES points to the margin between the value LES is proposing and the most recent U.S. Department of Energy/Uranium Disposition Services (DOE/UDS) estimates.

The contingency factors cited by LES are applied to the LLNL capital costs (associated with buildings and some equipment). There are no contingencies applied to the technical development, regulatory compliance, operations and maintenance transportation, or preparation and disposal costs, which account for a substantial portion of the overall costs. A contingency factor should apply to all of these types of costs.

LES Response

The response to this request is provided in the Introduction. As noted there, adjusting the LLNL cost estimate is not meaningful.