

RAS 10964

**Louisiana Energy Services, L.P.**  
**Exhibits for February 2006 Hearing**

<b>Exhibit #</b>	<b>Issue</b>	<b>Description</b>
118	Cylinder/Cost of Capital	Letter from R. M. Krich to Director, NMSS, "Clarifying Information Related to Cost Estimate for Deconversion of Depleted UF <sub>6</sub> ," NEF#05-033 (Nov. 23, 2005).
119	Cost of Capital	"Financial Assurance for Materials Licensees: Final Rule," 68 Fed. Reg. 57327 (Oct. 3, 2003).
120	Cost of Capital	"General Requirements for Decommissioning Nuclear Facilities: Final Rule," 53 Fed. Reg. 24108 (June 27, 1988).
121	Cost of Capital	NUREG-1827, "Safety Evaluation Report for the National Enrichment Facility in Lea County, New Mexico," Chapter 1 (2005).
122	Cost of Capital	Letter from R. M. Krich to Director, NMSS, "Request for Exemption to Certain Provisions of 10 CFR 40.36 and 10 CFR 70.25, Financial Assurance and Recordkeeping for Decommissioning," NEF#05-023 (May 11, 2005).

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ATTN: Document Control Desk  
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Washington, DC 20555-0001

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

**Subject: Clarifying Information Related to Cost Estimate for Deconversion of Depleted UF<sub>6</sub>**

During the October 2005 evidentiary hearings on Louisiana Energy Services' (LES's) strategy and related cost estimate for the commercial dispositioning of depleted uranium hexafluoride (DUF<sub>6</sub>) from the proposed National Enrichment Facility (NEF), a question arose concerning the potential costs of washing and recertifying empty DUF<sub>6</sub> cylinders for reuse or, in the alternative, of disposing of those cylinders. In addition, a question arose regarding the manner in which LES accounted for the cost of capital associated with the construction of a private deconversion facility in its estimate for constructing such a facility. The information that follows addresses these two issues, and reflects the testimony delivered by LES's expert witness panel during the evidentiary hearing on October 24 and 25, 2005.

### **I. Cylinder Washing and Disposal**

LES's witness panel testified that any empty DUF<sub>6</sub> cylinders would be a valuable operational commodity, in that such cylinders could be continuously reused or recycled for storing and/or transporting radioactive material. As LES's witnesses testified, LES does not believe that it is reasonable to assume that fully serviceable cylinders would be cut up and disposed of as a routine matter. This is a key assumption underlying LES's cost estimate.

Additionally, absent unusual circumstances, LES's witnesses testified that it is necessary to wash a used DUF<sub>6</sub> cylinder only once every five years in conjunction with the "recertification" of that cylinder for further use. As indicated above, cylinders are not simply used once, washed, and then disposed of. Such a practice would squander a valuable commercial resource. Furthermore, LES's witnesses testified that much of the washing and recertification of the cylinders would occur during the operational life of the NEF as these cylinders are used and reused, and would therefore constitute an operational cost. At the end of plant life, therefore, many of the cylinders already will have been washed and recertified. LES's witnesses testified that the assumption that a third party operating a deconversion facility would be required to wash

**LES Exhibit 118**

and recertify, or to dispose of, 30 years worth of empty DUF<sub>6</sub> cylinders represents a worst case and unrealistic scenario. For these reasons, cylinder wash costs were not included in the deconversion cost estimate.

LES's witnesses further testified that the estimated cost of washing and recertifying an empty DUF<sub>6</sub> cylinder is approximately \$0.58 to \$0.60 per kgU. As LES's witnesses indicated during the hearing, this cost estimate is based on information contained in the 2004 Urenco business study. Based upon this business study, LES's witnesses further testified that the cost of washing an empty cylinder for purposes of its recertification would bound the cost of cleaning that same cylinder for purposes of disposing of it under "free release" standards. In particular, the Urenco business study projects the cost for disposing of a cylinder. This projection translates into about \$0.56 per kgU (assuming an exchange rate of \$1.29 per Euro). Additionally, LES's witnesses testified that based upon information provided by Cameco, a company that mines uranium and converts it to yellowcake for eventual enrichment, it is less expensive to wash and sandblast a cylinder for purposes of free release of that cylinder than the estimated cost for cylinder washing and recertification contained in the Urenco business study, since the cost of recertification is eliminated. For the foregoing reasons, LES's witnesses testified that the cost of cylinder washing for purposes of recertification would bound the estimated cost of cleaning the cylinder for purposes of disposing of it under "free release" standards. As explained in the testimony, the only part of the cylinder that will be required to be disposed of as low-level radioactive waste is the end cap welding rings.

Finally, as explained above, LES testified that it did not include the cost of cylinder washing or disposal in its cost estimate for a private sector deconversion facility. Notwithstanding, LES commits to an additional \$0.60 per kgU for the cost of cylinder washing. For the reasons discussed above, LES testified that this is a very conservative figure, since it assumes that all cylinders will be washed and recertified or disposed of once the DUF<sub>6</sub> has been removed, and because this estimate bounds the cost of cylinder cleaning and disposal.

## II. Cost of Capital

With regard to the "cost of capital" necessary to construct a private deconversion facility, LES's witnesses testified that the LES cost estimate of \$2.67 per kgU is based upon the Urenco business study, adjusted to account for the cost of constructing and operating such a facility in the United States. This per kgU estimate, multiplied by the total kgU to be generated by the NEF during its 30-year license period (*i.e.*, 110,027,923 kgU) and escalated in accordance with the required periodic adjustment, will result in sufficient financial assurance at the end of the license period of the NEF to construct and operate a deconversion facility. Thus, in the event that LES fails to fulfill its responsibility to disposition the DUF<sub>6</sub> produced by the NEF, sufficient funds would be available at that time from the LES financial assurance instrument for the NRC to contract with a third party for the construction and operation of a deconversion facility. No funds would need to be borrowed for this purpose, and hence there would be no debt to service (*i.e.*, cost of capital).

Additionally, as a backup alternative to the preferred use of a private deconversion facility, LES's financial assurance would also provide sufficient funds for the NRC to enter into an arrangement with the Department of Energy (DOE) to disposition all DUF<sub>6</sub> generated by NEF -- at any time during the licensed period of the NEF -- in the event that LES fails to fulfill its responsibility. Indeed, based upon DOE's estimated per kgU cost of \$4.68 per kgU for all costs associated with the dispositioning of DUF<sub>6</sub>, the financial assurance provided by LES of \$5.28 per kgU (the original estimate of \$4.68 per kgU plus the \$0.60 per kgU for cylinder washing committed to above) would be more than sufficient to cover the DOE option as a backup alternative for any DUF<sub>6</sub> generated by NEF up to that point.

The approach described above complies with all applicable NRC financial assurance requirements. Further, it ensures that in any reasonably foreseeable circumstance, sufficient financial assurance will be available to disposition all DUF<sub>6</sub> generated by the NEF without the need to borrow funds and the attendant debt service obligations associated with such borrowing.

Nevertheless, understanding that questions that have arisen regarding how LES has accounted for the cost of capital associated with the construction of a private deconversion facility, LES is prepared to commit to an additional \$0.40 per kgU to account for the cost of capital, on the basis of an assumed borrowing rate of 10 percent. The \$0.40 per kgU is based upon an assumed amortization period of 17 years, the projected operating life of the deconversion facility, during which all the DUF<sub>6</sub> generated by the NEF will be deconverted. While LES views the assumed interest rate of 10 percent to be highly conservative, LES is prepared to commit to the addition of \$0.40 per kgU to its deconversion cost estimate for purposes of ensuring that this issue is resolved in a satisfactory manner.

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

Respectfully,

*Martin J. O'Neill*  
for

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

cc: T.C. Johnson, NRC Project Manager