

October 18, 2005

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	Docket No. 70-3103
LOUISIANA ENERGY SERVICES, L.P.)	
)	ASLBP No. 04-826-01-ML
(National Enrichment Facility))	

NRC STAFF'S OUTLINE OF PROPOSED KEY DETERMINATIONS
FOR CONTENTIONS RELATING TO DECONVERSION, TRANSPORTATION,
DISPOSAL OF DEPLETED URANIUM, AND CONTINGENCY FACTOR

CONTENTIONS RELATING TO DECONVERSION

Plausibility of Deconversion

- Staff Witnesses: LES has proposed a strategy for private sector deconversion of the depleted uranium produced in the chemical form of UF_6 . The depleted uranium is sent to a private deconversion facility where it is converted to U_3O_8 ; after deconversion, the U_3O_8 is ready for final disposal.
- LES Exhibit 105: LES has begun the process of arranging for private deconversion through entering into an MOU with AREVA Enterprises. This MOU is supports the plausibility of building a deconversion facility for several reasons:
 - AREVA, which represents Cogema, has commercial experience in building a deconversion plant as it has done so at the Pierrelatte, France facility. AREVA is also in the process of discussing the design and licensing of a deconversion plant for Urenco in the United Kingdom.
 - LES and AREVA have agreed to complete mutual discussion for developing and entering into a contract for a deconversion facility near the NEF.
 - The plant for the NEF would be sized to deconvert sufficient quantities to process annual production.
 - LES and AREVA anticipate that construction would occur from 2014-16.
- Staff Witnesses: The Staff considered additional information which informed the Staff's judgement that private sector deconversion is plausible.
 - The chemical processes for deconversion are well understood.

- Deconversion has been utilized in commercial facilities for over 20 years.
- The fact that AREVA/Cogema has operated a commercial deconversion facility indicates that it has the technical and industry expertise to build a deconversion plant to satisfy the requirements of the NEF.
- The experience of AREVA/Cogema indicates that it has sufficient expertise to project when construction will be complete.

Cost of Deconversion

- The regulations concerning the submission of cost estimates for decommissioning require the following:

LES must submit a decommissioning funding plan with:
 - A cost estimate for decommissioning;
 - A description of the method for assuring funding; and
 - A means for adjusting the cost estimate and funding over the life of the facility.
- Staff guidance for reviewing decommissioning funding plans is in NUREG-1757. It provides, criteria for assessing the adequacy of the estimate. They include, among other things:
 - Cost estimates must be documented and reasonable;
 - The cost estimate includes all major activities;
 - The cost estimate meets applicable regulatory requirements;
 - No credit is taken for salvage value;
 - The estimate includes an adequate contingency factor of 25%; and
 - The cost estimate provides a description of how it will be periodically adjusted.
- Staff Witnesses, LES Exhibit 83: LES's cost estimate for the deconversion of depleted uranium of \$2.69 kg/U based on a business study prepare in conjunction with a proposal by Cogema to build a plant for Urenco in the United Kingdom (LES Exhibit 91).
- Staff Witnesses: The proposal for the Urenco facility has the following relevant parameters:
 - It will produce U_3O_8 and aqueous HF; and
 - It will deconvert 3,500 MT U/year.

- Staff Witnesses: LES adjusted the Urenco cost to account for differences for the LES facility by taking the following actions:
 - The different operating capacities were accounted for (the LES facility was sized to deconvert 7,000 MT U/year);
 - LES converted euros to dollars using a 2004 conversion rate; and
 - LES added costs to account for “Americanization,” including:
 - Costs to obtain regulatory approval; and
 - Costs to convert European equipment standards to American standards.
- Staff Witnesses: The Staff determined that LES’s deconversion cost is adequately documented and reasonable. Specifically, the Staff determined that:
- Costs were based on estimate derived from actual operating experience in that Cogema has been operating a deconversion facility for many years;
- The Urenco cost estimate was appropriately adjusted to account for differences in operation in the United States; and
- The cost estimate appropriately considered the cost of disposal of CaF_2 in a landfill.
 - While uranium contamination is possible, it would likely be minimal; and
 - Municipal landfills, including one in Lea County, accept waste which has minimal amounts of uranium contamination.

Relief requested:

- Board ruling that private deconversion of depleted uranium generated at the proposed NEF is plausible.
- Board ruling that LES has provided a sufficiently documented and reasonable estimate of the cost of deconversion for its decommissioning cost estimate.

CONTENTIONS RELATING TO TRANSPORTATION

- Transportation Cost:
- LES Exhibit 84: LES has included \$0.85/kgU for the cost of transportation in its decommissioning cost estimate.
- Staff Witnesses: The transportation required for decommissioning activities includes transportation of DUF_6 from the enrichment facility to the deconversion facility (in the form of DUF_6) and from the deconversion facility to the disposal facility (in the form of U_3O_8).
- Staff Witnesses, LES Exhibits 98, 99: LES based this cost estimate on an estimate provided by an independent vendor of transportation services. Two costs were provided; one for transport of DUF_6 and one for U_3O_8 . A vendor estimate such as this provides an adequate basis for a cost estimate.
- Staff Witnesses: The cost estimate provided by the vendor represented both legs of the journey, *i.e.*, transport from the enrichment facility to the deconversion facility and from the deconversion facility to the disposal facility. Therefore, it was reasonable for LES to average the costs provided.

Relief requested:

- Board Ruling that LES has provided a sufficiently documented and reasonable cost estimate for transportation costs involved in decommissioning.

CONTENTIONS RELATING TO DISPOSAL OF DEPLETED URANIUM

Plausibility of Disposal of Depleted Uranium

- LES has proposed that depleted uranium will be disposed of after deconversion. A specific disposal site has not been selected.
- LES's decisions are not dictated by Staff environmental review documents. The Staff has identified options for disposal which include various sites including Envirocare; none have been eliminated from consideration or selected by the Staff.
- Disposal must meet regulatory requirements. NRC requirements regarding disposal are found in 10 C.F.R. Part 61 which provides:
 - Depleted uranium is Class A waste under 61.55.
 - As Class A waste depleted uranium is eligible for shallow land disposal.
 - Part 61 sets forth performance requirements in Subpart C that must be satisfied before shallow land disposal can be accomplished.
- State regulatory requirements apply to disposal sites in many States, including Utah where Envirocare is located. State regulatory requirements are essentially equivalent to those of 10 C.F.R. Part 61.
- Staff Disposal Witnesses: Envirocare utilizes shallow land disposal and is licensed to accept Class A waste.
- LES Exhibits 103 and 104: The State regulatory authority has confirmed that Envirocare may accept depleted uranium for disposal with no quantity limits.
- NIRS/PC's determination of acceptability of waste is irrelevant to disposal at Envirocare as the decision on licensing is within the authority of, and has been made by, the State regulatory authority.
- Given the fact that Envirocare can accept depleted uranium waste for shallow land disposal, this is a plausible disposal option.
- Other options are open for disposal; the Staff has not selected or eliminated any disposal option. LES is pursuing the option of using WCS should WCS obtain a license to receive depleted uranium waste.

Cost of Disposal

- Because shallow land disposal is plausible, it is reasonable for LES to premise its cost estimate on this type of disposal.

- LES Exhibit 83, 84: LES has estimated disposal cost to be \$1.14/kgU for disposal in an engineered trench or near-surface low level radioactive waste facility.
- LES Exhibit 103: LES premised its cost estimate on a Memorandum of Agreement between LES and WCS containing a range of unit costs.
- Staff Witnesses: The WCS cost estimate obtained by LES provides sufficient documentation for the cost of disposal, particularly since there are a limited number of facilities that can accept this type of waste. Moreover, the cost estimate is conservative based on other quotes for disposal for this type of material.

Relief requested:

- Board ruling that the LES's proposal to dispose of depleted uranium after deconversion in a near surface disposal facility is plausible.
- Board ruling that LES has provided a sufficiently documented and reasonable estimate of the cost of deconversion for its decommissioning cost estimate.

CONTENTIONS RELATING TO CONTINGENCY FACTOR

- Staff Witnesses: A contingency factor is a specified percentage that is added to the sum of decommissioning costs for the purpose of ensuring that sufficient funds are available to pay for unforeseen circumstances.
- Staff Witnesses: The contingency factor is not designed to account for uncertain costs. These must be accounted for in the original cost estimate. In addition, the contingency factor must be distinguished from the regular adjustments which are required by NRC regulations. These adjustments take into account any changed circumstances which impact decommissioning costs.
- Staff Witnesses: Dr. Makhijani is not correct that major adjustments in cost should not be considered in the regular funding adjustments; this conclusion is in fact counter-intuitive.
- LES Exhibit 83, Staff Witnesses: LES has utilized a contingency factor of 25% for decommissioning costs. This is consistent with Staff guidance which calls for the use of a 25% contingency factor.
- Staff Witnesses: The Staff determined that the use of 25% is appropriate in this case based on consistency with Staff guidance and the fact that the decommissioning activities involved in decommissioning this type of facility are relatively simple.
- Dr. Makhijani's claim that the difficulty of building a geological repository should be accounted for in a contingency factor must be rejected; there is no reason to conclude that deep geological disposal is necessary; that such a facility would have to be constructed for the NEF even if such disposal was utilized, or that such an eventuality would not be considered in the regular funding adjustments.

Relief requested:

- Board ruling that the 25% contingency factor used by LES in its decommissioning cost estimate is adequate to account for unforeseen circumstances.

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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S OUTLINE OF PROPOSED KEY DETERMINATIONS FOR CONTENTIONS RELATING TO DECONVERSION, TRANSPORTATION, DISPOSAL OF DEPLETED URANIUM, AND CONTINGENCY FACTOR" in the above-captioned proceedings have been served on the following by deposit in the United States mail; through deposit in the Nuclear Regulatory Commission's internal system as indicated by an asterisk (*), and by electronic mail as indicated by a double asterisk (**) on this 18th day of October, 2005.

Administrative Judge * **

G. Paul Bollwerk, III

Atomic Safety and Licensing Board Panel

U.S. Nuclear Regulatory Commission

Mail Stop: T-3F23

Washington, D.C. 20555

E-Mail: gpb@nrc.gov

Administrative Judge * **

Charles Kelber

Atomic Safety and Licensing Board Panel

U.S. Nuclear Regulatory Commission

Mail Stop: T-3F23

Washington, D.C. 20555

E-Mail: cnkelber@aol.com

Administrative Judge * **

Paul Abramson

Atomic Safety and Licensing Board Panel

U.S. Nuclear Regulatory Commission

Mail Stop: T-3F23

Washington, D.C. 20555

E-Mail: pba@nrc.gov

Office of Commission Appellate Adjudication*

U.S. Nuclear Regulatory Commission

Mail Stop: O-16C1

Washington, D.C. 20555

Mr. Rod Krich, Vice President

Licensing, Safety and Nuclear Engineering

Louisiana Energy Services

2600 Virginia Avenue NW.

Suite 610

Washington, D.C. 20037

Office of the Secretary * **

ATTN: Rulemakings and Adjudication Staff

U.S. Nuclear Regulatory Commission

Mail Stop: O-16C1

Washington, D.C. 20555

E-mail: HEARINGDOCKET@nrc.gov

James. R. Curtiss, Esq. **
Dave Repka, Esq. **
Martin O'Neill, Esq. **
Amy C. Roma, Esq. **
Tyson R. Smith, Esq. **
Winston & Strawn
1700 K Street, N.W.
Washington, D.C. 20006
E-mail: jcurtiss@winston.com
drepka@winston.com
moneill@winston.com
aroma@winston.com
trsmith@winston.com

Lindsay A. Lovejoy, Jr. **
Nuclear Information and Resource Service
1424 16th Street, NW.
Suite 404
Washington, D.C. 20036
E-mail: lindsay@lindsaylovejoy.com
llovejoy@cybermesa.com

/RA/

Lisa B. Clark
Counsel for NRC Staff