



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON D.C. 20545-0001

January 3, 1995

U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of Louisiana Energy Services L.P.

Docket No. 70-3107-ML Official Exhibit No. 247

OFFERED by: Applicant/Licensee Intervenor NERS/PC

NRC Staff Other Staff

IDENTIFIED on 10/27/05 Witness/Panel Disposal

Action Taken: ADMITTED REJECTED WITHDRAWN

Reporter/Clerk Beth Ann Engel

Mr. Charles E. Bradley, Jr.  
Office of Uranium Programs  
Office of Nuclear Energy  
U.S. Department of Energy  
NE-33, Germantown Bldg  
Washington, DC 20585

Dear Mr. Bradley:

This is in response to the U.S. Department of Energy's (DOE's) recent request for recommendations on the potential uses for, and technologies that could facilitate the long-term management of, depleted uranium hexafluoride (DUF<sub>6</sub>) stored at the Paducah, Kentucky, and Portsmouth, Ohio, gaseous diffusion plants and at the Oak Ridge Reservation in Tennessee (59 FR 56324, November 10, 1994). The U.S. Nuclear Regulatory Commission's interest in the disposition of DUF<sub>6</sub> at these facilities stems from our responsibilities under the Energy Policy Act of 1992 and the effect that the long-term management strategy(s) chosen by DOE for DUF<sub>6</sub> at DOE's facilities may have on the management of DUF<sub>6</sub> at facilities under the Commission's jurisdiction, that is, the U.S. Enrichment Corporation plants and the proposed Louisiana Energy Services, Claiborne Enrichment Center.

NRC staff has not developed recommendations on the potential uses for DOE's DUF<sub>6</sub>. Although beneficial uses of the DUF<sub>6</sub> may be forthcoming in the future, NRC staff believes that, because of the current, excess world-wide inventory of DUF<sub>6</sub>, DOE should assume that a significant portion of both DOE and commercial DUF<sub>6</sub> will require disposal as waste. Disposal of the DUF<sub>6</sub> will likely require conversion of the material to a more stable physiochemical form, such as U<sub>3</sub>O<sub>8</sub>. NRC staff has recommended in the past that U<sub>3</sub>O<sub>8</sub>, which is thermodynamically stable and relatively insoluble, is a likely form for disposal. Although DU<sub>3</sub>O<sub>8</sub> could be disposed of in limited quantities in conventional near-surface disposal facilities, the very large quantities derived from a significant fraction of the nation's enrichment tailings indicate a need for a unique disposal facility. We have assumed that such a large quantity, in proper form, might well be disposed of in a mined cavity, perhaps an exhausted uranium mine, providing better containment for such a large quantity of depleted uranium.

The current storage methods employed at the Paducah, Portsmouth, and Oak Ridge facilities have demonstrated insignificant impacts from a health and safety standpoint for about fifty years. However, conversion of the DUF<sub>6</sub> to U<sub>3</sub>O<sub>8</sub> could provide even safer intermediate storage for possible future use or eventual disposal.

Although we recognize that, currently, there is limited capacity for converting the DUF<sub>6</sub> to U<sub>3</sub>O<sub>8</sub>, and that a mined cavity for its disposal has yet

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to be developed, we believe that conversion of DUF<sub>6</sub> to U<sub>3</sub>O<sub>8</sub> and placement of the material in a mined cavity, is one long-term management option that should be included in any evaluation of options by DOE for its DUF<sub>6</sub>.

If you have any questions concerning the staff's recommendation, please contact Michael F. Weber, of my staff, at (301) 415-7298.

Sincerely,

*Robert F. Bernero for*

Robert H. Bernero, Director  
Office of Nuclear Material Safety  
and Safeguards

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ADJUDICATIONS STAFF

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C. Bradley

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Sincerely,

Robert M. Bernero, Director  
Office of Nuclear Material Safety  
and Safeguards

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