

RAS 7876



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Secretary of the Commission
United States Nuclear Regulatory Commission
Attn: Rulemaking and Adjudications Staff
Washington, D.C. 20555-0001
Facsimile: (301) 415-1101

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Re: **In the Matter of Louisiana Energy Services, L.P. (National
Enrichment Facility)**
Docket No. 70-3103
ASLBP No. 04-826-01-ML

Dear Rulemaking and Adjudications Staff:

Enclosed is the original affidavit of Allen Messenger, which is Attachment A of the NEW MEXICO ATTORNEY GENERAL'S REPLY IN SUPPORT OF PETITION FOR LEAVE TO INTERVENE AND REQUEST FOR HEARING. The New Mexico Attorney General would greatly appreciate it if you would kindly file this as an attachment to the NEW MEXICO ATTORNEY GENERAL'S REPLY IN SUPPORT OF PETITION FOR LEAVE TO INTERVENE AND REQUEST FOR HEARING.

Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script, reading "David M. Pato".

David M. Pato
Assistant Attorney General
New Mexico Attorney General's Office

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

G. Paul Bollwerk, III, Chairman
Dr. Paul B. Abramson
Dr. Charles N. Kelber

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

AFFIDAVIT OF ALLEN L. MESSENGER, P.E.

STATE OF TEXAS)
)ss.
COUNTY OF TRAVIS)

Allen L. Messenger, being first duly sworn, deposes and states:

1. I am over the age of eighteen years and I make this affidavit based upon my personal knowledge.
2. I have an M.S. in Civil Engineering from Texas A&M University and I have worked as a professional engineer for over eighteen years.
3. I have 24 years of experience in permitting and licensing hazardous and radioactive waste management facilities. I have directed the licensing and permit applications for the Waste Control Specialists, LLC (WCS) Class C radioactive materials storage and processing facility in Andrews County, Texas, a Class A, B & C radioactive waste disposal application, TSCA storage facilities, commercial hazardous waste landfills, and a hazardous waste and TSCA processing and incinerator complex including the cost estimates that established financial assurance for closure and post closure of these commercial waste management facilities. I directed the preparation of the decommissioning plan and financial assurance cost

estimate for WCS for its low-level radioactive waste storage and processing license and negotiated the applicable license conditions.

4. From 1981-85, I was the head of Disposal Facilities Unit of the Texas Department of Water Resources (TDWR), where I was responsible for developing regulations for the design, siting, approval and groundwater monitoring of hazardous and non-hazardous waste landfills throughout the State of Texas. In addition, I was responsible for technical approval of closure plans for industrial hazardous waste disposal units and the design of groundwater monitoring systems throughout the State of Texas. During my tenure at TDWR, I served on the EPA/ASTSWMO Task Force to develop siting standards for hazardous waste landfills. I also provided comments on behalf of the State of Texas on EPA regulations and guidance pertaining to hazardous waste management and implementation of HSWA requirements including Continuing Releases and Minimum Technological Requirements.
5. I have reviewed the application submitted by Louisiana Energy Services, L.P. ("LES") to construct and operate a centrifuge enrichment facility in Eunice, New Mexico. I have reviewed the petitions for leave to intervene filed by the New Mexico Attorney General and the New Mexico Environment Department, and the responses to those petitions filed by the Nuclear Regulatory Commission staff. Finally, I have reviewed portions of the Draft Environmental Impact Statement (Draft EIS) for the proposed Paducah, Kentucky Depleted UF6 conversion facility and portions of the Draft Environmental Impact Statement (Draft EIS) for the proposed Portsmouth, Ohio conversion facility.
6. Having reviewed the materials listed above, I have reached various opinions and conclusions that are set forth in the remaining paragraphs of my affidavit. Each of my opinions is formulated to a reasonable scientific probability.
7. Depleted UF6 is toxic and radioactive. It will pose potential harm to human health and the environment as long as it is stored at LES or at an authorized off-site facility. According to DOE/EIS-0269, *FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR ALTERNATIVE STRATEGIES FOR THE LONG-TERM MANAGEMENT AND USE OF DEPLETED URANIUM HEXAFLORIDE*, Table 4.3, radiological hazards include radiation-induced cancer and fatalities that can occur a considerable time after exposure, typically 10 to 50 years. Chemical hazards include adverse health effects (e.g. kidney damage and respiratory irritation or injury), which can be immediate or can develop over time, typically less than a year.
8. The decommissioning cost estimate in the LES application includes neither the detail nor the documentation necessary to meet the

requirements of 10 CFR § 40.36 for the management and disposition of Depleted UF6 that will be accumulated in the enrichment facility that LES proposes to build at Eunice, New Mexico.

9. Decommissioning costs for the LES proposed facility may be incurred prior to Depleted UF6 disposition, including the cost of storage prior to conversion and preparation of nonconforming cylinders. If such costs are incurred, they will reduce the available decommissioning funding to the point that the remaining funding is inadequate for DOE disposition, if not included in the decommissioning cost estimate.
10. LES is requesting a license that will allow it to accumulate and store all of the Depleted UF6 that will be generated by the proposed enrichment facility during the 30-year life of the plant. The number of accumulated cylinders approximates the number of cylinders at Portsmouth, Ohio, which it is estimated will require 18 years to process into a form suitable for disposal or sale into commerce. Yet LES commits to promptly decontaminate and remove all radioactive material to achieve unrestricted release of the facility at the end of its 30-year operational life. *See* LES Application, §3.3.1.6, §3.3.1.6.1, §7.2.2.8, §10.1.4.
11. LES has not documented an authorized off-site facility that will be in existence at the end of the facility's operational life to receive any or all of the accumulated Depleted UF6 for storage or conversion. Consequently, it is reasonable to assume there will be decommissioning costs not identified in the LES cost estimate, including but not limited to, on-going storage, maintenance, operational and monitoring costs of its storage and ancillary facilities, and preparation of nonconforming cylinders for transportation. LES's decommissioning cost estimate is not sufficiently detailed to allow a third party contractor to accept responsibility to decommission the facility.
12. Depleted UF6 has been stored in the United States for over 50 years at the facilities that generated the Depleted UF6 as a byproduct of enriched uranium production. The inventory of Depleted UF6 accumulated and still stored at these same facilities is proposed by DOE to be processed (converted) in order to separate the fluoride component (F6) of the Depleted Uranium for commercial use and generate and dispose of the Depleted Uranium (Depleted U) component in a form that no longer contains fluoride. However, there currently are no conversion or storage facilities that are authorized to receive the Depleted UF6 that LES proposes to accumulate in storage at its proposed Eunice, New Mexico fuel cycle facility.
13. The Draft Environmental Impact Statement (Draft EIS) for the proposed Paducah, Kentucky Depleted UF6 conversion facility includes a summary of the history of large-scale uranium enrichment in the United States on

Page S-3 and describes the Depleted UF6 (DUF6) cylinders to be converted at the Paducah conversion facility. The Portsmouth Draft EIS describes the DUF6 to be converted at the Portsmouth facility. Section of S.2.2 of the Draft EIS Summary for Paducah proposes to convert the Deleted UF6 generated and accumulated at Paducah and to decommission the conversion facility at the end of the 25-year operational life. The Draft EIS for Portsmouth proposes to convert the accumulated Deleted UF6 at Portsmouth and ETTI facilities and to decommission the conversion facility at the end of its 18-year operational life. Neither conversion facility proposes to process the Deleted UF6 that LES will generate and accumulate at the facility proposed for Eunice, New Mexico.

14. In short, LES has not documented that a facility will exist to take the proposed accumulated Depleted UF6 it will generate and which the proposed license would authorize to be accumulated and stored at the time the facility is decommissioned for unrestricted release. See LES Application, §10.1.4.
15. Under NUREG 1727 *NMSS DECOMMISSIONING STANDARD REVIEW PLAN*, the licensee is required to develop a decommissioning cost estimate for the facility based on documented and reasonable assumptions.
16. LES does not provide a sufficient detail in its decommissioning cost estimate to demonstrate that its cost estimate includes all reasonable costs, or that the decommissioning costs will be sufficient to allow an independent third party to assume responsibility for decommissioning the facility. Such reasonable costs include, but are not limited to:
 - The cost to prepare containers for shipment (repackaging or over packing damaged, over-pressured or corroded cylinders that no do not meet DOT requirements for transportation to an off-site facility); and
 - The cost to continue to store the Depleted UF6 at LES or an authorized commercial facility after the rest of the LES facility is decommissioned.
17. LES's cost estimate for decommissioning the proposed Eunice, New Mexico facility does not contain sufficient information to determine whether the estimate includes the cost of preparing non-conforming cylinders prior to shipment off-site. This could be a significant component of cost because the *Cost Analysis Report For the Long-Term Management of Depleted Uranium Hexafluoride* assumes that a majority of cylinders will not conform to shipping requirements. The following table is from Section 6.2.1, Page 112 of this report:

	Reference		Low		High	
	Number of Non-Conforming Cylinders	Number of Conforming Cylinders	Number of Non-Conforming Cylinders	Number of Conforming Cylinders	Number of Non-Conforming Cylinders	Number of Conforming Cylinders
Portsmouth	5239	8188	2600	10788	13345	0
Paducah	19200	9751	9600	48751	28351	0
K-25	4683	0	2342	2341	4683	0
Total	29522	17939	14542	51880	46422	0

Further, the LES application provides no information to document or demonstrate it is reasonable to assume a licensed off-site facility will be available to receive its accumulated Depleted UF6 inventory. The two facilities that could convert LES's accumulated Deplete UF6 inventory at the end of the plant's 30-year operating life are proposed to be decommissioned and, therefore, could not receive the accumulated Depleted UF6 from the proposed Eunice, New Mexico facility.

18. The 15,727 cylinders of Deleted UF6 to be accumulated at the proposed Eunice, New Mexico facility are comparable in number to the 16,000 cylinders currently accumulated at the Portsmouth fuel cycle facility. The Draft EIS for Portsmouth estimates 2 years will be required to construct the Portsmouth conversion plant and 18 years to process the 16,000 cylinders. It is reasonable to assume that a similar time frame will be required to convert LES's accumulated Deleted UF6 inventory after such a conversion facility is authorized for construction. Since there is no conversion plant currently proposed to be available to convert LES's accumulated Deleted UF6 inventory and since the length of time required to obtain authorization, to construct, and then to convert the accumulated Depleted UF6 could reasonably be assumed to be over 20 years, it is also reasonable to assume that the LES facility will continue to store this material for an unknown period of time after the rest of the facility is decommissioned for unrestricted release.
19. The cost of ongoing storage, maintenance, security and other costs required for long-term Depleted UF6 storage or the cost of storage at a commercial facility is not detailed in the LES decommissioning cost estimate. A reasonable decommissioning cost assumption is to require financial assurance sufficient to provide long-term storage, cylinder maintenance, storage and ancillary facility maintenance, and security for an indefinite period of time after facility operations cease and the rest of the LES facility is decommissioned.

20. NUREG 1727, Section 15.1.1, page 15-7 specifies that a contingency factor of 25% be added to the estimate of all other costs. LES proposes a 10% contingency factor instead of 25% to pay for costs associated with Depleted UF6. See LES Application, §10.1-1, §15.7.
21. LES does not provide sufficient documentation to demonstrate the Urenco experience regarding pilot scale facilities conducted in the Netherlands is applicable in the United States, or that the 10% contingency is adequate given the uncertainties of Depleted UF6 disposition. There is no statement of equivalent regulation to demonstrate comparability nor does it appear appropriate to replace a broadly applicable NUREG specification based on a single data point. LES does not provide documentation to show the Urenco experience in the Netherlands includes the cost of storage and disposition of Deplete UF6 tails or is analogous to management of Depleted UF6 in the United States. The LES license application represents that disposition of tails (Depleted UF6) is an element of authorized operating activities and is not part of decommissioning activities and further asserts these tails are analogous to the disposal of spent fuel in the case of nuclear reactors. LES references Regulatory Guide 1.159, Section 1.4.2, page 1.159-8 to illustrate this principle. See LES application, §10.3.
22. NRC's Regulatory Guide 159, *ASSURING THE AVAILABILITY OF FUNDS FOR DECOMMISSIONING NUCLEAR REACTORS*, is applicable to commercial nuclear reactors regulated by NRC. Storage and disposal of spent fuel at and from nuclear reactors is regulated under the Nuclear Waste Policy Act of 1982 (codified as amended at 42 U.S.C. sections 10101-10270), which created the Nuclear Waste Fund to cover the cost of storage and disposal of spent fuel from nuclear reactors and does not apply to the LES fuel cycle facility.
23. LES proposes to meet NRC's DECON decommissioning standard that requires "immediate dismantling" of the facility, including the UBC storage pad. All Depleted UF6 must be removed as part of decommissioning and the cost of "tails disposition" will be a decommissioning cost.
24. LES must remove the accumulated Deplete UF6 in order to decommission the proposed facility for unrestricted release. DOE is responsible for disposal of the Depleted UF6 only if LES is able to pay DOE for disposal in an amount equal to the Secretary's costs, including a pro rata share of any capital costs. Pub.L. 104-134, Title III, sec. 3113 (April 26, 1996). LES has not demonstrated DOE will be able receive the accumulated Deleted UF6 inventory (potentially equivalent to 18 years of conversion time), and that the decommissioning cost estimate includes all of the costs for preparing DOT noncompliant cylinders and continued storage prior to

conversion. Although there is an established program to dispose of the accumulated Depleted UF6, LES has not provided documentation sufficient to predict when such disposal will be available either at the time of decommissioning or at a time after decommissioning.

25. In order to assure DOE disposition of the accumulated tails, the decommissioning fund must be adequate for a third party to accept responsibility for decommissioning and to pay DOE in accordance with Section 3113. If the financial assurance to manage and dispose of the accumulated Depleted UF6 is not sufficient, DOE is not required to dispose of these "tails" from the facility. Decommissioning costs such as the cost of storage prior to conversion and preparation of nonconforming cylinders can reasonably be assumed to occur prior to disposition and if not included, could reduce the available decommissioning fund to the point it is inadequate to pay DOE for disposition.

Further affiant sayeth naught.

Date: May 22, 2004

By: 
ALLEN L. MESSENGER

ACKNOWLEDGEMENT FOR NATURAL PERSONS

STATE OF TEXAS)
)ss.
COUNTY OF TRAVIS)

The foregoing instrument was subscribed and sworn to me this 22 day of May, 2004, by Allen L. Messenger.


Notary Public

My commission expires:

01-29-08

