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LES Exhibit 4g

LOUISIANA
ENERGY

Louisiana Energy Services
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Washington, DC 20037

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September 30, 1993

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BRANCH

Mr. John W. N. Hickey, Chief
Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Docket No.: 70-3070
Louisiana Energy Services
Claiborne Enrichment Center
Additional Information
File: 6046-00-2001.01

Dear Mr. Hickey:

Provided in Attachment A is the additional information requested by your letter to LES dated September 27, 1993 related to the cost estimate for decommissioning funding.

Please call me at (704) 382-2834 if there are any questions concerning this.

Sincerely,


Peter G. LeRoy
Licensing Manager

PGL/N102.993

Enclosures

NUCLEAR REGULATORY COMMISSION

Docket No.	70-3070-ML	Official Ex. No.	LES 4g
In the matter of	Louisiana Energy Service		
Staff	IDENTIFIED		
Applicant	✓	REQUESTED	
Intervenor		REJECTED	
Contg. Offr.			
Contractor		DATE	3/16/95
Other		WITNESS	
Reporter	P. Roy		

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xc: (w/ enclosures)

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J M McGarry (W&S)
W R Griffin (FDI)
A Brown (Urenco)
H A Hammond
Central Records
Project Files

Attachment A
Additional Information Requested by NRC Staff

Comments Related to Facility and Site Decommissioning

1. Increase your estimates for facility and site characterization and generation of the decommissioning plan by \$0.1 million each. NRC staff expects characterization of the CEC at the time of decommissioning to involve development of a characterization plan, conduct of the actual characterization activities and generation of the characterization report. For a facility of the nature and size of the CEC, the staff estimates the characterization plan and the report to each cost \$0.05 million, and characterization activities to cost \$0.1 million for a total of \$0.2 million. In addition the staff estimates that generation of the decommissioning plan would cost about \$0.2 million.

Response:

The decommissioning estimate has been revised in accordance with the above comments. Safety Analysis Report (SAR) Table 11.8-2 has been revised to include the revised cost estimates, as well as the revised schedule and cost comments noted below, and is enclosed. A revision to the SAR, Environmental Report, and License Application will be made in the near future to reflect the revised cost estimate.

2. Revise your estimate of 2 months required to characterize the facility and site to six months. Assuming that the characterization plan is finalized before cessation of enrichment activities at the CEC, the staff anticipates that an additional six-month period will be required to complete facility and site characterization.

Response:

The estimated time to characterize the CEC has been revised from two months to six months. The estimated overall schedule for decommissioning is shown in Figure 1 "Estimated Decommissioning Schedule."

3. The staff anticipates that twelve months will be required to complete the final radiation survey, and an additional three months will be required to complete NRC's confirmatory survey. Revise the overall project decommissioning schedule accordingly.

Response:

The decommissioning schedule has been revised in accordance with the comment.

Attachment A
Additional Information Requested by NRC Staff

4. Estimate the cost of maintaining the CEC idle during the time prior to decommissioning plan approval and, after completion of dismantlement and decontamination activities, prior to license termination.

Response:

The cost of maintaining the CEC idle during the time prior to decommissioning plan approval should be minimal. LES will be managing operations and decommissioning activities to ensure costs are minimized. \$1 million (\$1996) has been added to the cost estimate to account for any idle time that may be encountered. The idle time added to the overall decommissioning schedule is estimated to be six months. This time has been added to the decommissioning schedule. Figure 1 is a timeline of activities expected to be part of decommissioning activities. This timeline has been developed as an aid for accounting for and estimating the cost of decommissioning activities. It is realized that actual decommissioning activities, for example characterization and decommissioning plan development, may overlap or occur in a slightly different order.

5. State whether the two European pilot plants were characterized prior to centrifuge dismantling activities. If so then provide levels of contamination detected outside process equipment, i.e. on walls, floors, soils, etc. prior to the decontamination of the two pilot plants. Did the pilot plants have facilities comparable to the Technical Services Area of the CEC? If so, then provide contamination levels in these areas as well.

Response:

The Almelo pilot plants were not "characterized" prior to the beginning of the decontamination and decommissioning process. This was not necessary. Urenco knew that uranium residues in pipework and equipment other than centrifuges are negligible. There was abundant experience with routine decontamination for maintenance purposes. No abnormalities were encountered.

The original decontamination service of SP1 was decommissioned as well. All former UF₆ and non-enrichment services were removed. The building is still there. The cost estimates in the Urenco decommissioning information submitted to the NRC by LES letter dated September 21, 1993, and therefore LES' estimate, included the removal of non-enrichment services.

Attachment A
Additional Information Requested by NRC Staff

6. State whether a final survey was performed for Pilot Plant 1. If so, then briefly describe the nature and extent of the final survey.

Response:

The contamination in the pilot plant building of SP1 was practically zero. Note that floors in the hex handling areas and the walls in labs and decontamination areas had a special coating which makes decontamination by simple cleaning very easy. Floors in these areas were cleaned/washed at least once a week during plant operation. There were very few spots with contamination where the top layer of the floor had to be chipped off by some millimeters. The total area was a few square-meters only, was virtually restricted to pits for potentially slightly contaminated water.

These surfaces had to be decontaminated to less than 0.4 Bq/cm² for low toxic alpha (uranium) and 4 Bq/cm² for beta plus gamma according to Dutch regulations.

The building of SP1 is now available for unrestricted use. The status of decontamination and decommissioning of SP2 is not comparable to SP1, since part of SP2 is still operational.

There was no contamination of soil around the plant. Urenco Nederland has undertaken a general survey in which they compared soil of the same kind in the immediate neighborhood of the plant with soil within the perimeter fence. No difference was observed.

7. State whether the \$7.4 million cost of decommissioning 12,400 centrifuges at Almelo is appropriately escalated to 1993 dollars.

Response:

Please note that as stated in our letter dated September 21, 1993, 14,500 centrifuges have been decommissioned at the Almelo facility.

The following adjustments were considered when evaluating the cost of decommissioning the CEC versus the cost figures provided by Urenco's experience with the pilot plants at Almelo. However, they are not included because they are minor adjustments and do not materially affect the overall decommissioning estimate.

- a) Consideration was given to escalating each year of Almelo's cost to 1993 dollars. However, this would result in a very small change in the overall decommissioning cost estimate. Also, no attempt was made to estimate cash flows during the 7 years estimated to decommission the plant. A similar savings in decommissioning costs could be estimated since not all decommissioning funds will be expended on

Attachment A
Additional Information Requested by NRC Staff

"day one" of decommissioning activities. Therefore, no adjustment was made for escalating the Urenco cash flows nor the anticipated CEC cash flows.

- b) It is expected that between now and when the CEC is decommissioned that additional decommissioning experience will be accumulated. This will result in cost savings for CEC decommissioning activities. These cost savings have not been factored into the cost estimate.

A contingency of \$3.5 million has been included in the cost estimate. This accounts for minor discrepancies in cost estimating, such as inaccuracies in inflation estimates and currency exchange rate estimates.

TABLE 11.8-2

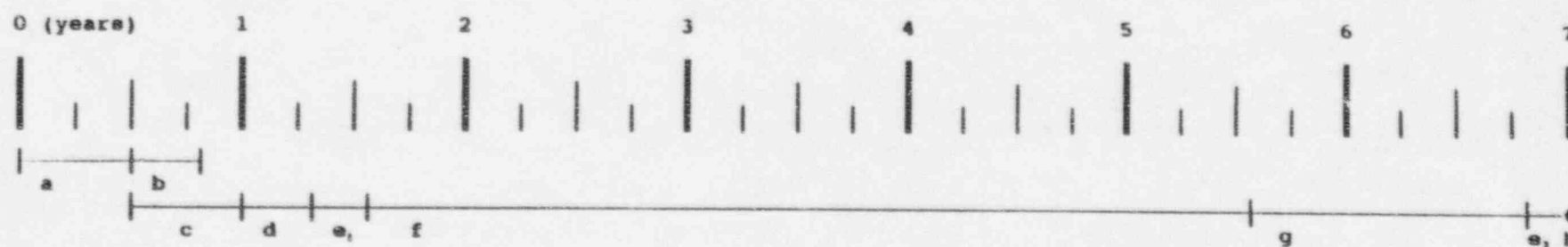
Estimated Decommissioning and Tails Disposition Costs & Duration

Activity	Cost (\$ MM, 1996 \$s)	Time (Yrs)
Characterize CEC facility/site	\$ 0.22	0.50
NRC Staff review of facility/site characterization	0.05	0.33
Develop and submit to NRC detailed decommissioning plan	0.22	0.50 (c)
NRC Staff review and approval of decommissioning plan	0.05	0.33
Idle time between cessation of operations and start of decommissioning activities.	1.00	0.50
Decontamination Facility Installation, System Cleaning, Dismantling, Decontamination	23.10	4.00
Decontamination/Decommissioning of Decontamination Facility	1.90	(a)
Sale/Salvage	0.00	(a)
Radioactive Waste Disposal	1.40	(a)
Hazardous/Mixed Waste Disposal	0.10	(a)
Tails Disposition	(b) 485.3	(a)
LES Final Radiation Survey and NRC Confirmatory Survey	1.50	1.25
Contingency	3.50	N/A
TOTALS	\$ 518.34	≈7

For related information, reference also the decommissioning funding plan contained in the CEC License Application.

- (a) To be performed along with dismantling and decontamination.
 (b) Tails disposal costs are estimated to be \$16.175 million per year of tails production.
 (c) Four months overlaps with NRC review of characterization.

Figure 1
Estimated Decommissioning Schedule



- a) Characterize facility and site - 6 months.
- b) NRC staff review of facility and site characterization - 4 months.
- c) Generate detailed decommissioning plan - 6 months.
- d) NRC staff review and approval of the decommissioning plan - 4 months.
- e) Idle time between cessation of operations and start of decommissioning activities (e_1), and time between confirmation survey and termination of decommissioning activities (e_2) - 6 months overall addition.
- f) Install decontamination facility, system cleaning, dismantlement, decontamination, waste disposal - 4 years.
- g) Final radiation survey and NRC confirmatory survey - 1.25 years.
- h) Termination of decommissioning activities.