February 8, 2008

Mr. Stephen Cowne
Licensing Director
Louisiana Energy Services, L.P.
P.O. Box 1789
Eunice, NM 88231

SUBJECT: REVIEW OF LOUISIANA ENERGY SERVICES AMENDMENT REQUEST TO MODIFY STRUCTURAL DESIGN SAFETY FACTORS (TAC L32392)

Dear Mr. Cowne:

On October 2, 2007, the Louisiana Energy Services (LES) transmitted an amendment request to modify structural design safety factors used in its structural design analyses. In this request, LES proposed to modify safety factors for building foundations against overturning and sliding and use values recommended in U.S Nuclear Regulatory Commission (NRC) guidance in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants." LES also proposed to modify its vertical design seismic response spectra to use parameters recommended in American Society of Civil Engineers (ASCE) ASCE 43-05, "Seismic Design for Structures, Systems, and Components in Nuclear Facilities."

We reviewed the proposed changes, and consider the revisions to be consistent with NRC guidance and are adequate to protect health and minimize danger to life and property. Therefore, based on the above review, the proposed changes are acceptable. We are providing in the Enclosure, a copy of the Safety Evaluation Report documenting the review.

Based on the above review, staff will amend the LES license upon receipt, from LES, of the final page changes to the licensing basis documents described in the October 2, 2007, submittal.

An environmental assessment for this action is not required, since this action is categorically excluded under 10 CFR 51.22(c)(11).

If you have any questions, please contact Mr. Timothy C. Johnson of my staff at (301) 492-3121, or via email to tcj@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael D. Tschiltz, Deputy Director
Fuel Facility Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: 70-3103
License No.: SNM-2010

Enclosure: Safety Evaluation Report

cc:

William Szymanski/DOE	Lorenzo Chacon/Jal	Gregory Smith/LES
Monty Newman/Hobbs	Daniel Stenger/H&H	David Trujillo/Lovington
Cindy Padilla/NMED	Betty Rickman/Tatum	Reinhard Hinterreither/LES
Glen Hackler/Andrews	William Floyd/New Mexico	Matt White/Eunice
Gary Schubert/Lea County	Richard Ratliff/Texas	Lee Cheney/CNIC
Michael Marriotte/NIRS	CO'Claire/Ohio	Roger Mulder/Texas
Derrith Watchman-Moore/NMED	Joseph Malherek/PC	Ron Curry/NMED
Tannis Fox/NMED	Patricia Madrid/NMAG	Glen Smith/NMAG
Lindsay Lovejoy/NIRS	Clint Williamson/LES	John Parker/NMED

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LES website-Yes			

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OFFICE	ECB	ECB	ECB	FFLD
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DATE	02/6/08	02/07/08	02/07/08	02/08/08

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DOCKET NUMBER: 070-3103
LICENSE NUMBER: SNM-2010

LICENSEE: Louisiana Energy Services
National Enrichment Facility
Lea County, New Mexico

SUBJECT: SAFETY EVALUATION REPORT OF LOUISIANA ENERGY SERVICES AMENDMENT REQUEST TO MODIFY STRUCTURAL DESIGN SAFETY FACTORS (TAC-L32392)

PROPOSED CHANGES

On October 2, 2007, Louisiana Energy Services (LES) submitted a license amendment request to revise the structural design loads for sole item relied on for safety (IROFS) IROFS27c. The sole IROFS27c is the design features to ensure process system integrity for buildings containing uranium hexafluoride process systems subject to seismic, tornado, tornado missile, high wind, and roof snow loads, and for roof ponding and site flooding from intense local precipitation. More specifically, this amendment request proposes to revise: (i) the minimum safety factors of foundations against overturning and sliding; and (ii) the vertical design seismic response spectra.

BACKGROUND

Minimum Safety Factors for Foundation Overturning and Sliding

The original minimum safety factors for foundations against overturning and sliding for the Sole IROFS27c are described in Section 3.3.2.2.8.3.C of the licensee's Integrated Safety Analysis (ISA) Summary. Table 1 lists these safety factors as provided in the ISA Summary.

Table 1. Original Minimum Safety Factors

Load Combination	Overturning	Sliding
D + H + E_o	1.5	2.0
D + H + W	1.5	2.0
D + H + E_s	1.5	2.0
D + H + W_t	1.5	2.0

D: Dead Load
H: Lateral Earth Pressure
E_o: Building Code Earthquake Loads
E_s: Safe Shutdown Earthquake
W_t: Design Basis Tornado

In the amendment request, LES proposed to revise the safety factor values listed in Table 1 to those listed below in Table 2. LES indicated that the proposed changes are part of an ongoing code reconciliation effort for the facility design. LES further pointed out that the original safety

Enclosure

factors against foundation overturning and sliding are overly conservative and the proposed new values are consistent with those specified in Section 3.8.5 of NUREG–0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants." LES concluded in the amendment request that using the reduced safety margins will not affect the Sole IROFS27c ability to meet the 10 CFR 70.61 requirements because the proposed changes will not create new accidents and the probability of occurrence of overturning and sliding will not increase significantly.

Table 2. Proposed Minimum Safety Factors		
Load Combination	Overturning	Sliding
$D + H + E_o$	1.5	1.5
D + H + W	1.5	1.5
$D + H + E_s$	1.1	1.1
$D + H + W_t$	1.1	1.1

Vertical Design Seismic Response Spectra

In the Safety Analysis Report, LES determined that the peak vertical ground motion for the site was the same as the peak horizontal ground motion. According to the ISA Summary, the vertical component response spectra were developed following the guidelines provided in the U.S. Nuclear Regulatory Commission Regulatory Guide 1.60, "Design Response Spectra for Seismic Design of Nuclear Power Plants."

In the amendment request, LES indicated that it intends to use the American Society of Civil Engineers (ASCE) ASCE 43–05, "Seismic Design Criteria for Structures, Systems, and Components in Nuclear Facilities," for the design and performance assessment of the IROFS structures. LES, therefore, states that, for consistency, it is appropriate for it to follow the guidance provided in ASCE 43–05 to determine appropriate vertical seismic response spectra for design and performance. Following this logic, LES proposes to use the guidelines provided in ASCE 43–05 instead of Regulatory Guide 1.60, originally specified in the LES ISA Summary, to determine the vertical seismic design response spectra. In the review of LES's initial application, the NRC previously accepted ASCE 43–05 as an acceptable approach to demonstrate structural seismic performance.

REGULATORY REQUIREMENTS

Under 10 CFR 70.61, an applicant is required to evaluate the risk of high- and intermediate-consequence events in an ISA and designate engineering or administrative control systems required to mitigate such events as IROFS. Under 10 CFR 70.62(c), an applicant is required to conduct and maintain the ISA in the appropriate level of detail for the complexity of the process.

DISCUSSION

Minimum Safety Factors for Foundation Overturning and Sliding

The staff reviewed the request for revising the safety factors against foundation overturning and sliding and concludes that the proposed values are acceptable because the proposed new safety factors are consistent with the NRC-accepted guidance in Section 3.8.5 of NUREG-0800.

The reduced safety margin is not likely to affect the ability of the Sole IROFS27c to perform its intended safety functions provided the design of Sole IROFS27c meets the target annual performance goal of 1.0×10^{-5} probability of exceedance. LES currently designs the IROFS structures using the industry-accepted ASCE 43–05 to demonstrate that the design meets the target annual performance goal of 1.0×10^{-5} probability of exceedance. The NRC has previously accepted ASCE 43–05 as an acceptable approach to demonstrate performance for the LES facility.

Vertical Design Seismic Response Spectra

Section 2.2.4 of ASCE 43–05 stipulates how vertical seismic design response spectra can be determined. According to ASCE 43–05, if the sources of earthquake that control the design spectra are more than 15 km away from the site, which is the case for the facility site, the ratio of vertical to horizontal design spectral ordinates can be taken as two-thirds at all frequencies. Examining the LES ISA Summary determined that the nearest recent faulting is located more than 161 km west of the site. Consequently, it is appropriate to take the vertical component seismic design spectra to two-thirds of the corresponding horizontal response spectra. The staff finds that the proposed revision to vertical seismic design response spectra is acceptable because it is consistent with codes and standards that the NRC has previously accepted.

FINDINGS

On the basis of the NRC staff's above review, the licensee has demonstrated: (1) the proposed minimum safety factors for foundation overturning and sliding are consistent with the NRC guidance in NUREG-0800; and (2) the proposed modifications to the vertical design seismic response spectra are consistent with the NRC-accepted guidance in ASCE 43-05. The proposed changes are, therefore, adequate to protect health and minimize danger to life and property.

ENVIRONMENTAL REVIEW

The issuance of the requested amendment to the LES license is subject to the categorical exclusion provided in 10 CFR 51.22(c)(11) and will not have a significant impact on the human environment. Therefore, in accordance with 10 CFR 51.22(c)(11), neither an environmental assessment nor an environmental impact statement is required for the proposed licensing action.

CONCLUSIONS

Based on a review and evaluation of the information provided by LES in its license amendment application, dated October 2, 2007, the NRC staff finds that the proposed revisions to the LES license are acceptable, consistent with the requirements of 10 CFR Parts 40 and 70, and should be approved. The NRC staff will amend the license to reflect the above changes upon receipt of the applicable revised pages to the licensing basis documents.

PRINCIPAL CONTRIBUTOR

Simon Hsiung, Center for Nuclear Waste Regulatory Analyses