

February 7, 2006

MEMORANDUM TO:

Joseph G. Giitter, Chief
Special Projects Branch
Division of Fuel Cycle Safety
and Safeguards

THRU:

Brian W. Smith, Chief
Gas Centrifuge Facility Licensing Section
Special Projects Branch, FCSS

/RA/

FROM:

Timothy C. Johnson, Project Manager
Gas Centrifuge Facility Licensing Section
Special Projects Branch, FCSS

/RA/

SUBJECT:

JANUARY 27, 2006, TELEPHONE SUMMARY: LOUISIANA
ENERGY SERVICES DISCUSSIONS ON REVISED NUCLEAR
CRITICALITY SAFETY VALIDATION AND VERIFICATION
REPORT

On January 27, 2006, the U.S. Nuclear Regulatory Commission (NRC) staff held a telephone conference call with staff from Louisiana Energy Services (LES) to discuss the revised nuclear criticality safety validation and verification report. I am attaching the telephone summary for your use. No proprietary or classified information was discussed.

Docket: 70-3103

Enclosure: Louisiana Energy Services
Telephone Summary

cc:

Rod Krich/LES
William Szymanski/DOE
Monty Newman/Hobbs
Glen Hackler/Andrews
James Brown/Eunice
Jerry Clift/Hartsville
Derrith Watchman-Moore/NMED
Tannis Fox/NMED
Lindsay Lovejoy/NIRS

James Curtiss/W&S
Claydean Claiborne/Jal
Troy Harris/Lovington
Lue Ethridge/Lea Cty
Richard Ratliff/Texas
Carol O'Claire/Ohio
Joseph Malherek/PC
Patricia Madrid/NMAG
Roger Mulder/Texas

James Ferland/LES
Peter Miner/USEC
Betty Richman/Tatum
John Parker/NMED
M. Marriotte/NIRS
Lee Cheney/CNIC
Ron Curry/NMED
Glenn Smith/NMAG

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Special Projects Branch, FCSS

FROM: Timothy C. Johnson, Project Manager /RA/
Gas Centrifuge Facility Licensing Section
Special Projects Branch, FCSS

SUBJECT: JANUARY 27, 2006, TELEPHONE SUMMARY: LOUISIANA ENERGY SERVICES DISCUSSIONS ON REVISED NUCLEAR CRITICALITY SAFETY VALIDATION AND VERIFICATION REPORT

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OFC	GCFLS	TSG	GCFLS	OGC	GCFLS
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DATE	02/02/06	02/02/06	02/08/06	02/07/06	02/08/06

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Telephone Conference Call Summary

Revised Criticality Safety Validation & Verification Report

Date and Time: January 27, 2006; 3:00 PM

Call Participants: L. Clark/NRC H. Felsher/NRC M. Galloway/NRC
 K. Morrissey/NRC B. Smith/NRC C. Tripp/NRC
 D. Green/LES G. Harper/LES B. Hubbard/LES
 G. Seeberger/LES

On January 27, 2006, a conference call between U.S. Nuclear Regulatory Commission (NRC) and Louisiana Energy Services (LES) staffs was held to discuss the revised nuclear criticality safety validation and verification report related to LES' application for a uranium enrichment facility proposed to be located in Lea County, New Mexico.

Discussion:

M. Galloway stated that, based on the review of the revised nuclear criticality safety validation and verification report, there are now differences between the information that is in the report and what is in the license application and safety evaluation report (SER). The goal of the teleconference is for everyone to understand the issues identified by the staff.

Issue #1: Distribution of Data

M. Galloway stated that the original license application contained information to support the k_{eff} limit equation that was normally distributed data. However, the revised report contains information that is non-normally distributed data. What changed? LES staff indicated that the original analysis was not valid and had to be corrected.

Issue #2: Use of High-Enriched Uranium (HEU) Benchmark Experiments:

M. Galloway noted that HEU experiments were included in the revised report and asked whether the inclusion of other experiments would make the data be normally distributed. Did LES evaluate what the distribution would be if the HEU experiments were eliminated? LES staff indicated that the evaluation had not been performed and that they would get back to NRC by Monday, January 30, 2006, on how much time it would take to complete the evaluation.

Issue#3: Contingency Dump System Area of Applicability Margin Penalty:

M. Galloway stated that LES did not use any benchmark experiments below approximately 5 weight percent uranium-235 in evaluating the Contingency Dump System, which resulted in LES having to add an area of applicability (AOA) margin penalty for that system. M. Galloway indicated that there are experiments between 2.0 and 3.0 weight percent that if LES used that data, then there may be no need for an AOA margin penalty for that system. LES staff indicated that they used all the solution experiments they could find, but they did not use any

non-solution experiments, which included those at lower enrichments. LES staff indicated they would get back to NRC by Monday, January 30, 2006, on how much time it would take to evaluate adding additional benchmark experiments with lower enrichments.

H. Felsher stated that it was unclear why LES used the HEU experiments. LES staff indicated that they were used to make sure that the experiments covered the needed Hydrogen-to-Uranium ratios and densities. In addition, LES staff indicated that they used all the solution experiments that they could find, including if they were HEU.

NRC staff and LES staff agreed that the verification and validation report would require revision to be consistent with the information in the license application and SER. In summary, NRC staff discussed the following three options for demonstrating that the AOA margin penalty for the Contingency Dump System was not necessary:

(1) Use additional benchmark experiments, even though they may not be solution experiments, to demonstrate that the license application and SER k_{eff} limit would still be met. NRC staff indicated that the advantage is that if appropriate additional benchmark experiments were used, then that part of the license application and SER would not need to be changed.

(2) Determine the worst case conditions k_{eff} calculation for the Contingency Dump System and compare to the k_{eff} result using the AOA margin penalty in the revised report. LES staff indicated that they would have to discuss this with Urenco staff and get back to NRC. NRC staff indicated that the advantage is that if the worst case conditions k_{eff} calculation for the Contingency Dump System was less than the k_{eff} result using the AOA margin penalty in the revised report, then that part of the license application and SER would need only minor editorial changes.

(3) Provide a qualitative, risk-based argument why it would still be appropriate to use the information in the license application and SER. NRC staff indicated that the disadvantage is that it may be difficult to provide such a qualitative, risk-based argument to make up for insufficient quantitative data.

LES staff indicated that they would get back to NRC by Monday, January 30, 2006, regarding either new information or when new information would be provided to NRC on all the issues raised at the teleconference.