

AUG 06 2012

LES-12-00124-NRC

Attn: Document Control Desk  
Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Louisiana Energy Services, LLC  
NRC Docket Number: 70-3103

Subject: Reply to Notice of Violation 70-3103/2012-003

Reference: Letter from J. Calle (NRC) to J. Laughlin (UUSA)  
NRC Inspection Report No. 70-3103/2012-002 and Notice of Violation,  
dated July 6, 2012.

NRC Notice of Violation 70-3103/2012-003 (Notice), Ref., was received by Louisiana Energy Services, LLC (dba "URENCO USA") on July 12, 2012. In response to the Notice URENCO USA (UUSA) herewith provides the enclosed Reply (Enclosure). The Reply addresses Violation A of the Notice as it relates to Section 21.3 (Design Control); and Examples of Violation B of the Notice as they relate to Section 21.2 (Quality Assurance Program) of the UUSA Quality Assurance Program Description (QAPD), respectively.

Pursuant to the provisions of 10 CFR 2.201(a) and the NRC's corresponding instructions specified in the Notice, the Enclosure addresses for each of the Examples of Violations A and B: 1) the reason for the violation; 2) the corrective steps that have been taken and the results achieved; 3) the corrective steps that will be taken; and 4) the date when full compliance will be achieved.

Should there be any questions regarding this submittal, please contact Perry Robinson, Vice President of Regulatory Affairs and General Counsel, at 575.394.6598.

Respectfully,



Jay Laughlin  
Chief Nuclear Officer and Head of Technical Services

Enclosure: Reply to Notice of Violation 70-3103/2012-003

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**ENCLOSURE**

**REPLY TO NOTICE OF VIOLATION (NOTICE) 70-3103/2012-003**

### **Restatement of Violation**

During a Nuclear Regulatory Commission (NRC) inspection conducted on April 1 through June 30, 2012, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. Special Nuclear Material (SNM) License Number (No.) 2010 requires, in part, that the licensee shall conduct authorized activities at the Louisiana Energy Services, L.L.C., National Enrichment Facility (LES NEF) in accordance with statements, representations, and conditions in the approved Quality Assurance Program Description (QAPD), and supplements thereto.

Louisiana Energy Services, NEF QAPD, Revision (Rev.) 32d, Section 21.3, "Design Control," states, in part, design control shall be in accordance with Section 3 of the QAPD. Section 3 of the QAPD states, in part, LES NEF commitment to Basic Requirement 3 of American Society of Mechanical Engineers (ASME) NQA-1-1994.

The American Society of Mechanical Engineers NQA-1-1994, Basic Requirement 3, Section 5, "Change Control," states, in part, changes to final design, field changes, modifications to operating facilities, and nonconforming items shall be justified and commensurate with those applied to the original design. These measures shall include assurance that the design analyses for the structure, system, or component are still valid. Changes shall be approved by the same affected groups or organizations which reviewed and approved the original design documents.

Table 3.0-1, "NEF Licensing Code of Record," in Section 3.0 of the LES NEF Integrated Safety Analysis (ISA) Summary, lists the International Building Code (IBC) 2003 Edition as the licensing code of record. IBC 2003, Section 1803.1, "Excavations near footings or foundations", states, in part, excavations for any purpose shall not remove lateral support from any footing or foundation without first underpinning or protecting the footing or foundation against settlement or lateral translation.

Contrary to the above, prior to April 10, 2012, LES NEF excavated and removed lateral soil support in the existing foundation support zone of the SBM 1003 without protecting the foundation against settlement or lateral translation or providing an engineering analysis that the original design was still valid and codes and requirements were met. (Violation (VIO) 70-3103/ 2012-03-001)

This is a Severity Level (SL) IV Violation (Section 6.5.d)

- B. Special Nuclear Material License No. 2010 requires, in part, that the licensee shall conduct authorized activities at LES NEF in accordance with statements, representations, and conditions in the approved QAPD, and supplements thereto.

Louisiana Energy Services, NEF QAPD, Rev. 32d, Section 21.2, states, in part, that the program shall provide control over activities affecting quality to an extent consistent with their importance. Louisiana Energy Services, NEF Safety

Analysis Report (SAR), Rev. 32d, Section 3.4.37, Compliance Item Commitments, states, in part, "Items Relied On For Safety (IROFS) will be designed, constructed, tested and maintained to Quality Assurance (QA) Level 1, with the following exceptions, IROFS27e which will be designated and analyzed to QA Level 1, and will be constructed, tested, and maintained to QA Level 1 Graded (QL-1G)."

Contrary to the above, prior to April 26, 2012, LES NEF failed to provide control over activities affecting quality to an extent consistent with their importance. Specifically, the licensee failed to maintain QL-1G structural backfill supporting IROFS27e foundation for the SBM 1003 in accordance with QL-1G requirements. Work Plans were approved and excavation began on removal of the QL-1G structural backfill into the foundation support zone using QA Level 3 (QL-3) controls and requirements. (VIO 70-3103/ 2012-03-002)

This is a Severity Level (SL) IV Violation (Section 6.5.d)

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### **UUSA Reply to Violation A**

#### **A. The Reason For Violation A**

A detailed review of applicable work documents, governing procedures, and actions leading up to the discovery of an unauthorized field change to the QL-1 configuration of the SBM 1003 Foundation Support Zone identified that the reason for the violation was insufficient process barriers for the control of QL-3 work activities that could impact QL-1 installations. The details of the insufficient process barriers are summarized in the following paragraphs.

The work planning process in place at the time did not require an engineering review of the excavation activities since the work was performed within a QL-3 work plan. This bypassed an opportunity to recognize the need for further engineering evaluation of the impact of planned work activities and to include appropriate work details and design requirements regarding proper excavation controls.

The QL-3 work planning and review/approval process allowed personnel with limited experience and knowledge of IBC and LES Design requirements (as they relate to foundation support zones) to prepare, review, and approve implementing work plans, which in this case contained insufficient construction details. Subsequently, the Construction Engineer (CE) and Design Engineer did not apply their knowledge of foundation support zone requirements when unexpected soil conditions at the mud mat were encountered and further excavation continued. At this point the work had transitioned into a QL-1 activity.

#### **B. Corrective Steps That Have Been Taken And Results Achieved**

1. Revised EG-3-6000-01, Construction Work Plans, Revision 15, to require Design Engineers to review all Work Plans for work that could potentially adversely affect any adjacent QL1, 1F, 1G or 2 SSC, steps 4.7.1, 5.5.3, 5.5.7.e. Interim action,

superseded by action 6 below. (As referenced in CR 2012-950 evaluation, Completed 4/20/2012)

2. Revised EG-3-6000-01, Construction Work Plans, Revision 15, Risk Assessment Worksheet accompanying work plans to prompt for an evaluation of the impact of excavations on QL-1G structures, Form F-10 D.2. Interim action, superseded by action 6 below. (As referenced in CR 2012-950 evaluation, Completed 4/20/2012)
3. Engineering analysis completed in NRC 2012-950 to address the impact ongoing excavation work on the SBM 1003 foundation and footers. (CR 2012-950, Attachment, Completed 5/21/2012)
4. Developed a "Limits of Excavation" detail/drawing, ECR7720. (CR 2012-950, Action 2, Completed 7/27/2012)
5. Revise Foundation drawings to reference the "Limits of Excavation" detail/drawing. (CR 2012-950, Action 3, Completed 7/27/2012)
6. Revision 18 of EG-3-6000-01, Construction Work Plans, requires Civil Design Engineering to review work plans for all excavations. Clarify the responsibilities of planning and engineering, major revision. (CR 2012-950, Action 6, Completed 7/13/2012)
7. Revision 18 of EG-3-6000-01, Construction Work Plans, removed the exception to the requirements for work steps to be in QL-3 work plans. (CR 2012-1395, Action 9, Completed 7/13/2012)

**C. The Corrective Steps That Will Be Taken**

1. Revise SA-3-2000-25 to be a safety procedure only. Remove all Engineering and Construction guidance. (CR 2012-950, Action 4)
2. Create a new Desk Top Guide to control excavation activities. (CR 2012-950, Action 5)

**D. The Date When Full Compliance Will Be Achieved**

Full compliance was achieved upon completion of Action 3 in section B above.

## **UUSA Reply to Violation B**

### **A. The Reason For Violation B**

A detailed review of the condition reports, applicable work documents and governing procedures leading up to starting excavation activities and excavation into the QL-1 foundation support zone identified two reasons for the violation. The reasons are summarized below.

The apparent cause was determined to be inadequate process controls application. Specifically, inadequate quality assurance controls were established as the excavation was considered a QL-3 activity and performed under QL-3 work plan preparation, review and implementation requirements. The establishment of that protocol failed to consider that removing of QL-1 backfill could cause an unwanted interaction with a QL-1 building foundation. While the concept of foundation support zone protection was certainly known by UUSA civil engineers, the applicable design requirements were not explicitly identified and included in the control of excavations. The QL-3 work planning, review and approval process did not ensure the QL-1 structure interaction from excavation activities was appropriately considered.

Contributing to this event was the failure of involved personnel to effectively use human performance tools when preparing and reviewing the applicable work plans, and when conditions changed in the field. The CE failed to identify and utilize appropriate and available design information when planning the activity. During in field activities the CE consulted with a UUSA civil engineering and he too failed to use design information to determine if proceeding with excavation below the mud mat was acceptable. Activities involving with the implementation of NCR 2012-950 conditional release, is another example of a human performance issue. The exaction activities were not performed as prescribed in the conditional release, that is, soil in excess of temporary backfill was removed. Interviews with key personnel revealed that that they felt time pressure to complete the work and this may have affected the use of human performance tools.

### **B. Corrective Steps That Have Been Taken And Results Achieved**

1. Revise the conditional release (from NCR 2012-950) to better describe the intent (more than just temporary fill is approved to be excavated). (CR 2012-1091, Action 1, Completed 7/18/2012)
2. Drawing number LES-0000-C-CVL-000-01 is to be included in excavation work plans to trigger foundation support zone awareness. Work Plan template on Z drive, as referenced in EG-4-6000-03, Construction Work Plan Process Desktop Guide, Rev 4. (CR 2012-1088, Action 2, Completed 7/24/12)
3. Revisions 18 of EG-3-6000-01, Construction Work Plans, require Civil Design Engineering to review work plans for all excavations. Clarify the responsibilities of planning and engineering, major revision. (CR 2012-950, Action 6, Completed 7/13/2012)
4. Revision 4 of EG-4-6000-03, Construction Work Plan Process Desktop Guide, to more clearly define the roles and responsibilities of Planning, Constructors,

Construction and Engineering in the Work Planning Process, to require excavations in QL-1 material to be planned as QL-1. (CR 2012-950, Action 7, Completed 7/23/2012)

5. Brief Planning on the events associated with DACE 2012-950. Brief to include discussion on the expectation to include approved design documents in work plan and an appropriate level of detail including appropriate cautions in work plan. (CR 2012-950, Action 8, Completed 7/31/2012)
6. Provide management expectation to Planning; no work plans are to be issued without all referenced documents physically included in the work plan. (CR 2012-950, Action 8, Completed 8/1/2012)
7. Brief Construction on the events associated with DACE 2012-950. Brief to include discussion on the expectation to include approved design documents in work plan and an appropriate level of detail including appropriate cautions in work Plan. The brief included a discussion of not surrendering quality to succumb to schedule pressure and a discussion on Foundation Support Zone excavation/design requirements. (CR 2012-950, Action 9, Completed 7/2/2012)
8. Brief Constructor on LES expectations for planning development process and field implementation process. Brief to include at a minimum expectations that Constructor will be actively engaged in planning process; Constructor will challenge decision to proceed without adequate documentation. (CR 2012-950, Action 10, Completed 7/31/2012)
9. Provide Construction Engineers and Constructors Supervisors a briefing on the newly created instructions for filling out EG-3-6000-01-F1. Discussion to include management expectation that instruction include needed instructions reference documents and appropriate cautions. (CR 2012-950, Action 11, Completed 7/23/2012)
10. Develop a lessons learned read and sign presentation describing the event and contributing causes associated with inadequate reviews of work packages and permits. (CR 2012-950, Action 13, Completed 7/13/2012)

**C. The Corrective Steps That Will Be Taken**

1. Create a new Desk Top Guide to control excavation activities. (CR 2012-950, Action 5)

**D. The Date When Full Compliance Will Be Achieved**

Full compliance was achieved upon completion of actions in section B above.