

DEC 02 2011

LES-11-00176-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 70-3103/2011-004

Reference: 1. Letter from J. Calle (NRC) to J. Laughlin (UUSA) NRC Inspection
Report No. 70-3103/2011-004 and Notice of Violation, dated June
28, 2011

NRC Notice of Violation 70-3103/2011-004 (Notice), Ref. 1, was received by Louisiana Energy Services, LLC (dba "UUSA") on June 28, 2011. On November 21, 2011, in a telecommunication between J. Calle (NRC) and Z. Rad (UUSA), verbal authorization was granted to extend the due date of the Reply to the Notice from 27 November, 2011 to December 2, 2011. In response to the Notice URENCO USA (UUSA) herewith provides the enclosed Reply (Enclosure). The Reply addresses Examples 1 and 2 of Violation A of the Notice as they relate to Section 10 (Inspection); and Examples 1 through 4 of Violation B of the Notice as they relate to Section 16 (Corrective Action) 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 Zackary Rad, UUSA Licensing Manager, at 575.394.6689.

Respectfully,



Perry Robinson
Vice President of Regulatory Affairs and General Counsel

Enclosure: Reply to Notice of Violation 70-3103/2011-004

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cc:

Joselito O. Calle
Chief, Fuel Facility Inspection Branch 2
USNRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

M. Scott Freeman
Chief, Construction Inspection Branch 3
USNRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

Anthony T. Gody
Director, Division of Fuel Facility Inspection
USNRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

Greg Chapman, Project Manager
Two White Flint
Mail Stop EBB2-C40M
11545 Rockville Pike
Rockville, MD 20852-2738

Raj Solomon, Deputy Secretary
New Mexico Department of Environment
Office of the Secretary
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502-0157

Cheryl Chance, Mayor
City of Jal
P.O. Box Drawer 340
Jal, NM 88252

Brian W. Smith
Chief, Enrichment and Conversion Branch
U.S. Nuclear Regulatory Commission
Executive Blvd Bldg
Mailstop: EBB2-C40M
Washington, DC 20555-0001

Gregory H. Fuller
Chairman
Lea County Board of County Commissioners
Lea County Courthouse
100 North Main, Suite 4
Lovington, NM 88260

Matt White, Mayor
City of Eunice
P.O. Box 147/1106 Ave J
Eunice, NM 88231

Richard A. Ratliff, PE, LMP
Radiation Program Officer
Bureau of Radiation Control
Department of State Health Services
Division for Regulatory Services
1100 West 49th Street
Austin, TX 78756-3189

Michael Ortiz, Chief,
Radiation Controls Bureau
Environmental Department
Harold S. Runnels Building
1190 St. Francis Drive, Room S 2100
P.O. Box 26100
Santa Fe, NM 87502-0157

Gary Don Reagan, Mayor
City of Hobbs
200 E. Broadway
Hobbs, NM 88240

John D. Kinneman, Director
Div. of Fuel Cycle Safety & Safeguards
U.S. Nuclear Regulatory Commission
Executive Blvd Bldg
Mailstop: EBB- E2C40M
Washington, DC 20555-0001

Gary Schubert
Lea County Commissioners
100 North Main
Lovington, NM 88260

ENCLOSURE

REPLY TO NOTICE OF VIOLATION (NOTICE) 70-3103/2011-004

Restatement of Violation:

During a Nuclear Regulatory Commission (NRC) inspection conducted on July 1 through September 30, 2011, three violations of NRC requirements were identified.

In accordance with the NRC Enforcement Policy, the violation is restated below:

- A. Special Nuclear Material (SNM) License 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), dated June 13, 2011, and supplements thereto.

Section 10 of the QAPD, "Inspection," states, in part that "finished items shall be inspected for completeness, marking, calibration, adjustments, protection from damage or other characteristics as required in order to verify the quality and conformance of the item to specified requirements."

Contrary to the above, before August 18, 2011, LES NEF failed to verify the quality and conformance of items to the specified requirements as described in the following examples:

1. LES Procedure EG-3-6000-04, Revision (Rev.) 6, "Erection of Structural and Miscellaneous Steel," requires that bolt installation be inspected per Specification LES-S-S-05131, "Erection of Structural and Miscellaneous Steel," which lists bolt torque as a Quality Level 1 critical attribute that shall be verified by quality control (QC) inspection. LES NEF performed final inspection on a finished item but failed to verify its quality and conformance to the specified requirements in the following:

Work Plan 1002-CIVIL-823-022, Rev. 0, "Completion of Cascade 5 LCS," states; in part, to remove / re-install lower cascade steel pieces for Cascade 5 in MHZB in accordance with EG-3-6000-04, "Erection of Structural and Miscellaneous Steel," Attachment 8, "Bolt maps and Enrichment Technology Corporation (ETC) reference documents, drawing, and assembly bills," and directs QC to verify all bolted connections are tightened/torqued to specified requirements in accordance with ETC reference documents, drawings, and Assembly Bills. In addition, Drawing ETC4061706-1 specifies that all M10 bolts in the lower steelworks of Cascade 2.5 rows 3, 5, and 6 be pretensioned to 40kN.

Specifically, an M10 bolt on Cascade 2.5, Row 6 lower steelworks had received inspection verifying that the specified pretension had been achieved; however, the bolt was found to be loose and therefore was not in a pretensioned condition.

2. Procedure EG-3-6000-04, Rev. 6, "Erection of Structural and Miscellaneous Steel," specifies that field bolting receive a visual inspection that includes "proper bolt projection (flush or outside face of nut)."

Design Document ETC4054545, Issue 1, with ECR-6282A specifies that the lower steelwork turnbuckles have to be: "tightened to snug-tight (i.e. hand tight), turnbuckle marked and then turnbuckle tightened to ¼ turn past snug tight."

Specifically, LES NEF did not inspect turnbuckles on the lower steelworks of minihalls 2A and 2B to verify they met the specified requirements of thread engagement (projection) and tightness.

This is a Severity Level IV Violation (Enforcement Policy 6.5.d)

- B. Special Nuclear Material (SNM) License No. 2010 states, in part, that the licensee shall conduct authorized activities at the Louisiana Energy Services, L.L.C. (LES), National Enrichment Facility (NEF) in accordance with statements, representations, and conditions in the approved Quality Assurance Program Description (QAPD), dated January 6, 2011, and supplements thereto.

Section 16, Corrective Action, of the LES NEF QAPD states, in part, that conditions adverse to quality shall be identified promptly and corrected as soon as practical, documented, and reported to the appropriate levels of management. Specifically, the LES NEF Corrective Action Program shall be established to implement a corrective action program that has prompt identification and correction of conditions adverse to quality.

LES Procedure CA-3-1001-01, "Performance Improvement Program," Rev. 17, Section 5.1.1, states that a Condition Report shall be initiated upon identification of an adverse condition. LES Procedure CA-3-1001-01 states that an adverse condition "is a deficiency in equipment, programs or processes that is undesired."

Contrary to the above, prior to August 25, 2011, LES failed to implement corrective actions to correct identified adverse conditions in accordance with Procedure CA-1-3-1000-01. During the inspection of problem identification, resolution, and corrective action (PIRCA), the NRC inspectors identified that the licensee had not initiated Condition Reports (CRs), defined corrective actions, or initiated actions to correct the following identified adverse conditions:

1. Quick Look Self-Assessment 2010-013 stated the Corrective Action Program Screening Committee (CAPSC) did not provide timely product reviews consistently. No CR was written to evaluate the identified condition or to provide corrective actions as needed.
2. Quick Look Self-Assessment 2010-013 stated that participation in CAPSC reviews were not in compliance with management expectations. No CR was written to evaluate the identified condition or to provide corrective actions as needed.

3. The evaluation for CR-2010-2541 stated that schedule pressure was an underlying cause for inadequately documented interdisciplinary reviews of configuration changes involving criticality safety. No CR or corrective actions were provided to address the identified problem with schedule pressure.
4. Audit Report 2010-A-03-007 stated a cultural weakness was identified in the means and methods used by LES NEF management to implement the corrective action program. Also, the report stated some managers did not know how to use the program or have not instructed their staff on its use. No CR was written to evaluate the identified conditions or to provide corrective actions as needed.

This is a Severity Level IV Violation (Enforcement Policy 6.5.d)

- C. Special Nuclear Material (SNM) License No. 2010 states, in part, that the licensee shall conduct authorized activities at the LES NEF in accordance with the statements, representations, and conditions of the approved QAPD.

Section 8, Identification and Control Materials, Parts, and Components, of the LES NEF QAPD states, in part, "the controls necessary to ensure that only correct and accepted items are used or installed will be required by the appropriate QA procedure. Identification requirements for materials, parts and components are stated in design specifications, drawings, and procurement documents. Control of materials, parts and components is governed by approved procedures."

Contrary to the above, during an inspection of PIRCA, the inspectors identified that the licensee had not established measures that were sufficient to prevent the use of incorrect or defective items. Specifically, a non-quality work control process was used to install structural components called fixing plates in upper steelworks designated Quality Level (QL) -1. Traceability of the installed components had not been maintained. Also, fixing plates installed in AU1001 Cascades 1 through 8 and AU1002 Cascades 1 and 2 had been purchased as QL-2 and had not been dedicated for QL-1 service.

This is a Severity Level IV Violation (Enforcement Policy 6.5.d)

The NRC has concluded that information regarding the reason for Violation C, the corrective actions taken and planned to correct the violation and prevent further recurrence, and the date when full compliance will be (was) achieved, are already adequately addressed.

I. UUSA Reply to Violations A- Example 1:

A. The Reason For Violation A – Example 1

1. The bolt/washer/nut combination was installed with a slight gap existing at the faying surfaces. The bolt holes were slightly misaligned, consistent with the as-found condition, causing the bolt assembly to be cocked slightly in the hole. The QC inspector witnessed the 'click' of the torque wrench, but because of the misalignment and interference with the bolt hole, full torque was not applied to gapped open joint. Subsequent loading or unloading of the joint caused by upper steel installation and alignment activities resulted in relaxation of the bolted joint when the remaining faying surface gap was further reduced. This set of circumstances resulted in the loose bolted connection as-found condition. The Bolted Connection Worksheet (EG-3-6000-04-F-1) lists the attributes to be verified by the engineer and QC Inspector. Absent from the form is a verification of the bolted connection faying surfaces for proper post-tension contact.

UUSA QC personnel qualified in Mechanical Inspection receive training on bolted connection requirements that includes joint fit-up and verification of pre-tension and torque. Joint fit-up caused an incomplete tensioning of the joint that was subject to loosening in the course of upper steel installation and alignment.

The summation of the above factors supports the apparent cause for Example 1 as a human performance error. A contributing cause was the exclusion of a sign-off for verification of proper contact of bolted connection faying surfaces on the Bolted Connection Worksheet.

B. Corrective Steps That Have Been Taken And Results Achieved

Example 1, as cited in Violation A, was documented and evaluated in condition reports CR-2011-2747 and CR-2011-3560. Corrective actions are in progress, as listed in the next section.

C. The Corrective Steps That Will Be Taken

1. Within the Corrective Action Program, CR-2011-2747 was opened to track the replacement of this bolt assembly. The completion of bolt replacement work plans are being tracked in CR-2011-1243, full compliance will be achieved no later than May 16, 2012.
2. Conduct a lessons learned briefing session for all UUSA QC inspectors qualified for bolted connection inspections. Discuss the range of possible apparent cause(s) for this event, and facilitate a discussion with QC inspectors on effective methods to ensure verification of proper bolted

connection configuration and bolt tensioning. This action is currently scheduled to be completed on January 17, 2012.

3. Revise form EG-3-6000-04-F-1, Bolted Connection Worksheet, to include a sign-off for verification of proper contact between bolted connection faying surfaces. This corrective action is applicable to any bolted connection worksheet form, if similar forms are being developed for specific applications (e.g., if a bolted connection worksheet is developed specifically for cascade steelworks and included in a new stand-alone procedure). This action is currently scheduled to be completed on January 31, 2012.

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

1. Full compliance will be achieved upon completion of the corrective actions to be taken for Violation A, Example 1, as stated in section I.C.1 through I.C.3 above.

II. UUSA Reply to Violations A – Example 2:

A. *The Reason For Violation A – Example 2*

1. The development, review and approval of work plans for the original installation and subsequent completion activities Assay 1002 lower cascade failed to consider the requirement for QC verification of QL-1 items as required by the QAPD, Section 10, Inspection.

This was a result of the following contributing causes:

- a. Work plans do not clearly define specified requirements from which to inspect turnbuckles. This includes no design direction for required thread engagement, resulting in a “skill of the craft” approach for cross bracing turnbuckle set up and adjustment.
- b. Failure to incorporate tightening requirements for lower steel turnbuckles from ETC4054545-1, as amended by ECR 6282, into lower steel completion work plans. Had the revised turnbuckle tightening requirements been incorporated into the work plans, the quantitative aspects specified in ETC4054545-1 would likely have prompted an assignment of a QC verification point.
- c. The direction to apply EG-3-6000-04, Erection of Structural and Miscellaneous Steel, to installation of lower steel works. That procedure is not well suited for cascade lower steel installation. Specifically, it does not address cross bracing installation and verification, nor does it contain installation verification forms suited for turnbuckle installation and adjustment verifications. Had EG-3-6000-04 (or a procedure developed specifically for cascade steelworks installation that) included criteria and

supporting verification forms applicable to cross bracing turnbuckle set-up and tightening, QC verification requirements would have likely been built into the process, similar to the other forms applied to structural and miscellaneous steel erection already contained therein.

- d. The work plan desktop instruction does not direct that all QL-1 component installations (on a component-by-component basis) have steps for QC verification. Instead, it is anticipated that within the process of work plan approval, including that by the QA Manager designee, reviews are conducted to ensure adequate detail is provided and appropriate verifications are specified. In these cases (Assay 1002 completion work plans), the QAM designee - a construction QC supervisor, failed to recognize that the verification step for the turnbuckle installation, although absent of verifiable attributes to inspect against, still fell under QC's responsibility.

The summation of the above factors supports an apparent cause as insufficient specification of design and installation requirements for which to prompt QC verifications. Contributing causes were inadequate procedures or instructions for the installation and documentation of required attributes for component installation, and missed opportunity by QA during work plan review/approval to specify a requirement for QC verification of turnbuckle installation.

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

The example cited in Violation A were documented and evaluated in condition reports CR-2011-2738, CR-2011-2747, and CR-2011-3560.

1. The following action has been completed and documented in the Corrective Action Program, CR-2011-2742: Revise SBM 1002 Cascade construction work plans to add a requirement for UUSA QC verification of the LCS cross-bracing tightness.

C. *The Corrective Steps That Will Be Taken*

1. Revise installation and completion work packages for lower cascade steelwork to include a reference to specification ETC 4054545-1 for cross bracing installation requirements. This Action is applicable to open work packages for completion of cascades in the following SBM Assays: 1001X (mini-halls 1C & 2C), 1002, 1003 Assay. This action is currently schedule to be completed on December 15, 2012.
2. Develop a verification plan for ensuring that lower steel turnbuckles meet critical installation attributes specified in ETC 4054545-1 applicable at the time of installation, or as subsequently revised and approved by Engineering.
 - This action is applicable to the following SBM cascades: 1001 – Cascades

1.1 through 1.8. This action is currently schedule to be completed on January 17, 2012.

3. Issue work plans for implementing the verification plan (developed by Engineering) of lower steel turnbuckle critical installation attributes. Turnbuckles are QL-1; as such, work plans shall specify QC verification points for this activity. This action is applicable to the following SBM cascades: 1001 – Cascades 1.1 through 1.8. This action is currently scheduled to be completed on January 31, 2012.
4. Ensure that a step is included in applicable lower steel installation work packages for QC to verify the turnbuckle installation critical attributes specified in ETC 4054545-1. This Action is applicable to open work packages for completion of cascades in the following SBM Assays: 1001X (mini-halls 1C and 2C), 1002, 1003. This action is currently schedule to be completed on December 15, 2011.
5. Develop proceduralized instructions specifically tailored for installation of cascade lower steelworks. As appropriate (e.g., for turnbuckle installation and tightening) include data entry forms specific to cascade lower steelwork installation that supports required actions and inspections. The proceduralized instructions should include lower steel/upper-steel erection sequencing, attributes requiring inspection, restrictions on re-use of bolting, and provisions for adjusting lower steel after final torquing. This can be accomplished by developing a stand-alone procedure (preferred) or by revising EG-3-6000-04 to add section(s) specific to installation of cascade steelworks. This action is currently scheduled to be completed on January 31, 2012.
6. Conduct a lessons-learned briefing session with UUSA QA department personnel who review for approval, construction and installation work plans. Discuss the missed opportunity to identify deficiencies in work plan instructions and specified verifications for QL-1 components. This action is currently scheduled to be completed on January 17, 2012.

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

1. Full compliance will be achieved upon completion of the corrective actions to be taken for Violation A, Example 2, as stated in section II.C.1 through II.C.6 above.

III. UUSA Reply to Violation B

A. *The Reason for Violation B – Examples 1 – 4*

1. All four examples listed in Violation B have been determined to have the same cause as evaluated in CR-2011-2845. The evaluation determined that Revision 12 of CA-3-1000-01, Performance Improvement Program, included

a change to the definition of the term "Adverse Condition." This change expanded the definition to ensure all items identified as areas for improvement are captured within the Corrective Action Program. This revision also included change management steps that require the writing of a Condition Report if, during the course of the evaluation process, additional instances of similar conditions adverse to quality are identified, and writing a Non-Conformance Report (NCR) for all items suspect to be nonconforming material.

The change in the definition of Adverse Condition, coupled with the mandatory requirement to write a Condition Report for all Adverse Conditions, resulted in an unintended consequence of making it a mandatory requirement to write a Condition Report for suggestions, recommendations or improvements that were previously considered to be optional.

Because of the aforementioned changes, the reporting requirements of the program were unknowingly changed and the site was not informed of the change in requirements. This conflict was not recognized until identified as a noncompliance by an NRC inspector.

The Notice findings in examples 1 through 4 of Violation B were not initially documented in Condition Reports due to this common underlying reason.

B. *Corrective Steps that have been taken and results achieved*

The examples cited in Violation B were documented and evaluated in condition report CR-2011-2845. The following corrective actions have been implemented.

1. Procedure CA-3-1000-01, Performance Improvement Program, was revised to clarify the definition of adverse condition. The revised definition is as follows: Failures, malfunctions, deficiencies, deviations, defective material and equipment governed by the Quality Assurance Program Description, in activities or services that has affected or reasonably could affect safety (personnel, industrial [to include Fire Safety], OSHA, chemical, environmental, radiation or nuclear) or quality; compliance with regulations; compliance with commitments; procedure or process compliance; or facility reliability. This was implemented in Revision 18 of the procedure which was effective 26 October, 2011.
2. Procedure CA-3-1000-01, Performance Improvement Program, was revised to provide clarification that initiation of Condition Reports for improvements, enhancements, and suggestions may be used. This includes the definition of Improvement Initiative: An enhancement, opportunity, recommendation, or improvement to current processes or procedures. Further, the revision included the following responsibility for all personnel: Identify improvement initiatives (which may be entered into the Performance Improvement Program through the submission of Condition Report) when a potential improvement

opportunity is identified. This was implemented in Revision 18 of the procedure which was effective 26 October, 2011.

C. *The corrective steps that will be taken*

1. Examples 1 - 4: All actions associated with these examples have been completed as stated in section III.B.1 and III.B.2 above.

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

1. Full compliance was achieved on October 26, 2011 through the implementation of corrective actions as stated in section III.B.1 and III.B.2 above.