



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

July 6, 2012

Gary J. Laughlin, Chief Nuclear Officer  
and Head of Technical Services  
Louisiana Energy Services  
National Enrichment Facility, L.L.C.  
P.O. Box 1789  
Eunice, NM 88231

**SUBJECT: LOUISIANA ENERGY SERVICES, NATIONAL ENRICHMENT FACILITY, L.L.C.  
- NRC INTEGRATED INSPECTION REPORT NO. 70-3103/2012-003 AND  
NOTICE OF VIOLATION**

Dear Mr. Laughlin:

This refers to the inspections conducted from April 1 through June 30, 2012, at the Louisiana Energy Services (LES), URENCO USA facility located in Eunice, New Mexico. The purpose of the inspections was to determine whether activities authorized under the license were conducted safely and in accordance with Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of the inspections. The findings were discussed with members of your staff at exit meetings held on April 12, 2012, April 26, 2012, and on May 17, 2012, for this integrated inspection report.

During the inspections, the NRC staff examined activities conducted under your license as they related to public health and safety and to confirm compliance with the Commission's rules and regulations, and with the conditions of your license. Areas examined during the inspections are identified in the enclosed report. Within these areas, the inspections consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel. The inspections covered the following areas; Operational Safety, Facility Support and Construction.

Based on the results of the inspections, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. These violations were evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (<http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>).

The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations are being cited in the Notice because they were identified by the NRC.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

If you contest the violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; and (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Should you have any questions concerning these inspections, please contact us.

Sincerely,

***/RA/ M. Sykes for***

Joselito O. Calle, Chief  
Fuel Facility Inspection Branch 2  
Division of Fuel Facility Inspection

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

Enclosures:

1. Notice of Violation
2. NRC Inspection Report No. 70-3103/2012-003  
w/Attachment: Supplementary Information

cc w/encl: (See page 3)

If you contest the violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; and (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

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Should you have any questions concerning these inspections, please contact us.

Sincerely,

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cc w/encl: (See page 3)

X PUBLICLY AVAILABLE    ☐ NON-PUBLICLY AVAILABLE    ☐ SENSITIVE    X NON-SENSITIVE  
ADAMS: X Yes    ACCESSION NUMBER: ML12188A105    X SUNSI REVIEW COMPLETE X FORM 665 ATTACHED

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SIGNATURE	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/	
NAME	LPitts	SMendez	RGibson	DHartland	OLopez	AMasters	
DATE	7/ /2012	7/ /2012	7/ /2012	7/ /2012	7/ /2012	7/ /2012	
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cc w/encl:

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Letter to Gary J. Laughlin from Joselito O. Calle, dated July 6, 2012

SUBJECT: LOUISIANA ENERGY SERVICES, NATIONAL ENRICHMENT FACILITY, L.L.C.  
- NRC INTEGRATED INSPECTION REPORT NO. 70-3103/2012-003 AND  
NOTICE OF VIOLATION

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PUBLIC

## NOTICE OF VIOLATION

Louisiana Energy Services, L.L.C.  
Eunice, New Mexico

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

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)**

Pursuant to the provisions of 10 CFR 2.201, the licensee is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (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. Your response may reference or include previous docketed correspondence if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 6<sup>th</sup> day of July, 2012

U. S. NUCLEAR REGULATORY COMMISSION  
REGION II

Docket No.: 70-3103

License: SNM-2010

Report No.: 70-3103/2012-003

Licensee: Louisiana Energy Services, L.L.C. (LES)

Facility: National Enrichment Facility (NEF)

Location: Eunice, NM 88231

Inspection Dates: April 1 through June 30, 2012

Inspectors: R. Gibson, Senior Fuel Facility Inspector, Division of Fuel Facility Inspection (DFFI) (Paragraphs B.1 and 2)  
D. Hartland, Senior Fuel Facility Inspector, (DFFI) (Paragraph A.1)  
A. Masters, Senior Construction Inspector, Division of Construction Inspection (DCI) (Paragraph C.1)  
O. Lopez, Senior Fuel Facility Inspector, DFFI (Paragraph A.1)  
C. Oelstrom, Construction Inspector, DCI (Paragraph C.1)  
N. Pitoniak, Fuel Facility Inspector (In-Training), DFFI (Paragraphs B.1 and 2)  
R. Drehs, Fuel Facility Inspector (In-Training), DFFI (Paragraph A.1)  
T. Vukovsky, Fuel Facility Inspector (In-Training), DFFI (Paragraph A.1)

Approved: J. Calle, Chief  
Fuel Facility Inspection Branch 2  
Division of Fuel Facility Inspection



## **EXECUTIVE SUMMARY**

Louisiana Energy Services, L.L.C., National Enrichment Facility (LES NEF)  
NRC Integrated Inspection Report 70-3103/2012-003  
April 1 - June 30, 2012

Inspections were conducted by regional inspectors during normal shifts in the areas of safety operations, facility support, and construction. The inspectors performed a selective examination of licensee activities that were accomplished by direct observation of safety-significant activities and equipment, tours of the facility, interviews and discussions with licensee personnel, and a review of facility records.

### **Safety Operations**

- The inspectors verified that the licensee was implementing the license requirements for Cylinder Receipt and Dispatch Building Phase 2a activities. The inspectors verified that operators were qualified and knowledgeable of applicable Items Relied on For Safety (IROFS) requirements. (Paragraph A.1)
- The inspectors determined that IROFS C23 was properly implemented for cascades 1.9, 1.10 and 1.11 in order to perform its intended safety function. (Paragraph A.2)

### **Facility Support**

- The inspectors determined that the program audits met the license requirements, covered a wide range of safety concerns, and were generally self-critical. The qualifications of management personnel complied with license requirements. The identification, tracking, and closure of corrective actions were conducted in accordance with established procedures. Revisions to operating procedures and facility equipment changes were being properly initiated, revised, reviewed, approved for release, and controlled. (Paragraph B.1)
- The inspectors verified that the training program was implemented in accordance with the license and regulatory requirements. (Paragraph B.2)

### **Construction**

- Two violations of NRC requirements were identified, one violation for failure to evaluate existing design for modifications associated with the excavation of soils from the foundation support zone of the Separations Building Module 1003 and one violation for failure to provide adequate control over Quality Level 1 Graded material removal associated with structural backfill supporting the foundation for the Separations Building Module 1003. One inspector follow-up item was opened to review services and lines in Duct Banks C and D and Manhole No. 81 to verify they are not safety-related. (Paragraph C. 1)

### **Attachment**

Key Points of Contact  
List of Items Opened  
Inspection Procedures Used  
Documents Reviewed  
Acronyms and Initialisms

## **REPORT DETAILS**

### **Summary of Plant Status**

During the inspection period, the licensee conducted routine plant operation of the operating Cascades throughout the inspection period. The licensee initiated operation of three Cascades during the period after being granted authorization. Construction and testing in some areas of Separation Building Module (SBM) 1003 and other applicable process areas continued in preparation for future operation of additional cascades and equipment.

#### **A. Safety Operations**

##### **1. Operations Readiness Review for the Cylinder Receipt and Dispatch Building (CRDB) Phase 2a Inspection Procedures (IP) 88020 and 88055**

###### **a. Inspection Scope and Observations**

The inspectors walked down the portions of the Cylinder Receipt and Dispatch Building (CRDB) that impacted activities the licensee intended to implement as part of Phase 2a. Those activities included the movement and storage of uranium hexafluoride cylinders and limited operation of Gaseous Effluent Ventilation System (GEVS). The inspectors also reviewed the Safety Analysis Report (SAR), the boundary definition documents, and procedures to assess the implementation of Items Relied On For Safety (IROFS) for CRDB Phase 2a.

The inspectors verified IROFS 45, maintaining sub-critical geometry of product cylinders, in the CRDB. The inspectors interviewed qualified operators and reviewed training documentation to verify that the operators were knowledgeable of IROFS 45 and its requirements. The inspectors also observed operators performing a simulated implementation of the procedure for IROFS 45 and noted that the operators displayed effective conduct-of operations techniques.

The inspectors reviewed the implementation of IROFS 35, fire rated barriers, in the CRDB. The inspectors verified that an inspection program was in place to ensure the integrity of fire doors, fire dampers, and through-penetration seal systems were maintained. The inspectors verified that compensatory measures were in place for unsealed penetrations due to construction activities and impaired fire doors.

The inspectors reviewed the implementation of IROFS 36a, limit transient combustible loading in uranic areas, in the CRDB. The inspectors walked down the CRDB to verify that transient combustible loading was controlled in accordance with IROFS 36a. The inspectors also verified that procedures were in place to adequately implement IROFS 36a and operators were trained on the procedures.

The inspectors verified that portable fire extinguishers were provided per National Fire Protection Association (NFPA) 10 and access to the fire extinguishers was unobstructed by plant equipment or other work related activities. The inspectors reviewed the fire pre-plan for the CRDB. The inspectors verified that the fire pre-plan contained sufficient information to support the response of the facility's fire brigade and offsite fire department.

The inspectors also walked the portion of the GEVS system that the licensee intended to operate under Phase 2a which included the tie in of the local extract portion from SBM 1001 and verified that it was consistent with newly revised licensing-basis documents.

b. Conclusion

No findings of significance were identified.

2. Verification that the systems structures and components designed to support operation of cascades 1.9, 1.10 and 1.11 met license requirements prior to initiation of feed (IP 88020)

a. Inspection Scope and Observations

The inspectors reviewed records associated with IROFS C23, Verification of Cascades 1.9, 1.10 and 1.11. IROFS C23 included design features of the centrifuges that would minimize uranium hexafluoride (UF<sub>6</sub>) releases. The inspectors determined that the design features for IROFS C23 were adequate to minimize releases and they were being adequately implemented and properly communicated as described in the Integrated Safety Analysis (ISA). The inspectors determined that IROFS C23 was properly implemented for cascades 1.9, 1.10 and 1.11 in order to perform its intended safety function.

b. Conclusion

No findings of significance were identified.

B. Facility Support

1. Management Organization and Controls (IP 88005)

a. Inspection Scope and Observations

The inspectors interviewed senior managers, mid-level managers, and supervisors to verify that the management team possessed an understanding of the plant policy for safety and management responsibilities as defined by the license. The inspectors reviewed changes in personnel that occurred within the past year. The inspectors noted that the licensee made recent senior management changes to reflect the URENCO organizational structure. The inspectors verified that the personnel selected met the qualifications as required by the license and the SAR. Through interviews, the inspectors verified that the newly appointed individuals were aware of and implemented their assigned responsibilities and functions.

The inspectors verified the licensee's control of procedures through discussions with licensee staff. The inspectors reviewed selected procedures which were revised in the past year to ensure that they were reviewed and approved in accordance with the license application and the licensee's change process.

The inspectors reviewed the licensee's problem identification and resolution program to determine if the program was being conducted in accordance with approved procedures and the license application. The inspectors interviewed selected staff to verify their knowledge of the problem identification and resolution program. The inspectors observed a licensee Corrective Action Review Board in which an Apparent Cause Evaluation was presented to the board members for review. The inspectors reviewed the internal and external audits of the following programs: Radiation Safety, Criticality Safety, Chemical & Industrial Safety, Environmental Protection, Material Control and Accountability (MC&A), Fire & Explosion Protection, and Emergency Preparedness and determined that these audits were conducted at the frequency required by the license. The licensee entered issues from audits and assessments into the corrective action program. The inspectors reviewed recent event and incident investigations conducted by the licensee and determined that they were conducted in accordance with the SAR section 11.6, Incident Investigations and Corrective Action Process. The Inspectors identified degraded concrete flooring in the mini-hall of Building 2A to the licensee and observed it being entered into the corrective action program.

The inspectors reviewed the safety committee meeting minutes and verified that the committee was operating per the requirements of the license and licensee procedure AD-3-1000-05, Safety Review Committee.

The inspectors verified that the licensee's quality assurance (QA) program was being implemented in accordance with the license application. Through interviews and examination of records, the inspectors determined that the licensee was performing the appropriate tests on systems and components important to safety. The inspectors observed IROFS C23 surveillance testing from the control room area.

b. Conclusion

No findings of significance were identified.

2. Operator Training (IP 88010)

a. Inspection Scope and Observations

The inspectors reviewed the Operator Training Program and evaluated the program against the license application. The inspectors interviewed licensee staff on changes to the training program in the past year and determined that no significant changes were made. The inspectors reviewed the procedures implementing the licensee's training program and determined that the program was established, implemented, and maintained as required by the license application and procedures.

The inspectors observed formal classroom Lockout-Tagout training for new personnel. The inspectors accompanied operators on watchstanding rounds. The inspectors observed a formal Task Performance Evaluation for operator qualification. The task was to connect an empty product cylinder. The evaluator properly assessed the activity as unsatisfactory based on radiological safety deficiencies requiring evaluator intervention in accordance with TQ-3-0100-01. The evaluator was qualified in accordance with licensee procedures.

The inspectors interviewed the Training Manager and the Shift Operations Manager regarding training development, requirements, and qualification requirements. The inspectors determined that the plant routinely reviews requirements through the Operations Curriculum Review Committee. Training on IROFS was performed and documented in accordance with TQ-3-0100-9, Operator Training and Qualification

b. Conclusion

No findings of significance were identified.

C. Construction

1. Geotechnical/Foundation Activities (IP 88131)

a. Inspection Scope and Observations

An inspection of the design criteria and geotechnical/foundation activities for the SBM 1003 and adjacent excavation activities was performed through direct observation, independent evaluation, and review of documentation. The purpose of this inspection was to determine whether the technical requirements detailed or referenced in the ISA report and the approved Quality Assurance Plan Document (QAPD) associated with geotechnical and foundation activities were adequately addressed in construction specifications, drawings, and work plans. The SBM 1003 structure is associated with IROFS 27e. The inspectors reviewed two work plans for excavation and backfill activities, observed two excavated areas, and interviewed construction and engineering personnel familiar and knowledgeable of the excavation work that was being performed.

The inspectors reviewed Louisiana Energy Services, L.L.C., National Enrichment Facility (LES NEF) Work Plan (WP) 0000-CIVIL-813-013, Install Duct Bank, Man Hole No.81, East of 1003, which specified the removal of soils categorized as QA Level 3 (QL-3) and installation of new duct work and a manhole to service the SBM 1003. The inspectors also reviewed WP 1003-CIVIL-820-002, Remove Temporary Ramp and Associated Fill Material East of UF<sub>6</sub> Area, which specifies the removal of a concrete ramp, used as a temporary entrance to the UF<sub>6</sub> area of the SBM 1003, and the removal of associated QL-3 backfill.

The American Society of Mechanical Engineers (ASME) 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 ISA Summary lists the International Building Code (IBC) 2003 Edition as one of the codes of record. International Building Code 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. This was identified as Violation (VIO) 70-3103/2012-003-001, "Failure to Evaluate Existing Design for Modifications."

According to the original approved design drawings, the foundation support zone for SBM 1003 is located immediately adjacent to and below the foundation, extends a distance of five feet horizontally from the edge of the footing, and then continues out and downward at a 1:1 slope. WP 0000-CIVIL-813-013 required excavation more than six feet below the bottom of the existing SBM 1003 foundation, which included excavation into the foundation support zone for the SBM 1003. The inspectors also observed that excavation activities were conducted beyond the scope of WP 1003-CIVIL-820-002 for the removal of the temporary entrance ramp that also extended into the existing foundation support zone for the SBM 1003.

The inspectors determined that LES NEF did not evaluate the impact to SBM 1003 of removing the lateral soil support and portions of the foundation support zone prior to beginning the excavation work. The licensee initiated revisions to Condition Report (CR) 2012-0950 and Nonconformance Report (NCR) 2012-0950 to address this issue.

The licensee's, LES NEF, ISA report, Section 3.4.37, Compliance Item Commitments, states, in part, that IROFS27e will be designated and analyzed to QA Level 1 (QL-1), and will be constructed, tested, and maintained to QA Level 1 Graded (QL-1G).

Section 21.2 of the LES NEF QAPD states, in part, that "The program shall provide control over activities affecting quality to an extent consistent with their importance." Quality assurance level requirements are defined in LES NEF QAPD, Section 2, which states, in part, "The Quality Assurance (QA) Level 1 Graded program applies exclusively to IROFS27e structures. Section 2, further states, in part, "The QA Level 3 program is defined as standard commercial practice. A documented QA Level 3 program is not required. QA Level 3 governs all activities not designated as QA Level 1, QA Level 1 Graded, QA Level 1F, QA Level 2AC, or QA Level 2."

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 IROFS 27e 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 QL-3 controls and requirements. This was identified as VIO 70-3103/2012-003-002, "Failure to Provide Adequate Control Over QL-1G Material Removal." Louisiana Energy Services, L.L.C., National Enrichment Facility initiated CR-2012-1088, CR-2012-1091, and CR-2012-1104 to address and evaluate the issues pertaining to this violation.

Work Plan 1003-CIVIL-820-002 and WP 0000-CIVIL-813-013 were identified as QL-3 for the removal of soil along the east foundation of SBM 1003. However, the excavation areas specified in the WPs included removal of soil in the foundation support zone for SBM 1003, which is identified as IROFS 27e. These WPs were approved and excavation began on removal of the QL-1G structural backfill using QL-3 controls and

requirements. As a result of not applying adequate QL-1G controls and requirements applied to these excavation activities, the following conditions were identified:

- (1) Excavation activities of the QL-1G soil began without approved drawings and construction plans. Through review of work package documentation and interviews with construction and engineering personnel, the inspectors observed that excavation work activities adjacent to the eastern side of the SBM 1003 structure began on March 26, 2012. However, applicable drawings referenced in the work packages, such as Revision 0 of drawings LES-0000-E-PHY-002-34 and LES-0000-E-PHY-002-35, were not approved and issued for use until April 11, 2012.
- (2) After concerns of the excavation activities were raised by the NRC on April 10, 2012, LES NEF stopped excavation work and placed temporary backfill along the east foundation of SBM 1003 to provide protection. The licensee, LES NEF, also initiated CR-2012-0950 and NCR-2012-0950 to evaluate concerns with this excavation. Based on the conditional release from engineering included in NCR-2012-0950 that limited the depth of excavation to six feet below the bottom of the footing, LES NEF continued with the duct work and manhole excavation. On April 24, 2012, the inspectors observed that the depth of the continued excavation extended beyond the limits dictated in the conditional release.

Excavation and backfill activities along the east foundation of SBM 1003 were ongoing. Inspector Follow-Up Item (IFI) 70-3103/2012-003-003, "Review of Duct Banks C and D and Manhole No.81," was opened to review services and lines in Duct Banks C and D and Manhole No. 81 and verify that these services were not associated with any IROFS. This work is associated with WP 1003-CIVIL-820-002 and WP 0000-CIVIL-813-013.

b. Conclusion

Two severity level (SL) IV violations were identified. Violation 70-3103/2012-003-001, "Failure to Evaluate Existing Design for Modifications," was identified for failure to provide protection to the foundation against settlement or lateral translation and failure to provide an engineering analysis that the original design was still valid and codes and requirements were met. Violation 70-3103/2012-003-002, "Failure to Provide Adequate Control Over QL-1G Material Removal," was also identified for failure to provide control over activities affecting quality to an extent consistent with their importance. Additionally, IFI 70-3103/2012-003-003, "Review of Duct Banks C and D and Manhole No. 81," was opened to review services and lines in Duct Banks C and D and Manhole No. 81 and verify that these services were not associated with any IROFS.

D. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff at on April 12, 2012, April 26, 2012, and on May 17, 2012, to senior licensee representatives and staff. No dissenting comments were received from the licensee during these exit meetings. Proprietary information was discussed but not included in the report.

## **SUPPLEMENTARY INFORMATION**

### **1. KEY POINTS OF CONTACT**

<u>Name</u>	<u>Title</u>
I. Anuma	Engineering
S. Cowne	Director of Operations
D. Elder	Training Manager
D. Greenwood	Shift Manager
R. Kohrt	Plant Engineering Supervisor
D. Lakin	Performance Assessment and Feedback Manager
J. Laughlin	Chief Nuclear Officer /Technical Services Director
P. Law	Engineering Systems Manager
P. McCasland	Licensing Specialist
J. McLauren	Civil Engineering Manager
K. Miller	Engineering
J. Muth	Quality Assurance Manager
J. Putnam	Field Engineer
B. Robinson	Construction Supervisor
C. Slama	Licensing Engineer
T. Taylor	Licensing Engineer
K. Tingum	Head of Document Control
M. Villalobos	Document Control Coordinator
M. Weemers	Engineering
R. Williams	Operations Shift Manager

### **2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

#### Opened

07003103/2012-003-001	VIO	Failure to Evaluate Existing Design for Modifications (Paragraph C.1)
07003103/2012-003-002	VIO	Failure to Provide Adequate Control Over QL-1G Material Removal (Paragraph C.1)
07003103/2012-003-003	IFI	Review of Duct banks C and D and Manhole No.81 (Paragraph C.1)

### **3. INSPECTION PROCEDURES USED**

IP 38703	Commercial Grade Dedication
IP 43004	Inspection of Commercial-Grade Dedication Programs
IP 88005	Management Organization and Controls
IP 88010	Operator Training
IP 88020	Operation Safety



IP 88055	Fire Protection
IP 88131	Geotechnical / Foundation Activities

#### 4. **DOCUMENTS REVIEWED**

##### Procedures:

AD-3-1000-05, Safety Review Committee, Rev. 5  
 TQ-3-0100-01 TSD Process Activities, Rev. 3  
 TQ-3-0100-09, Operator Training and Qualification, Rev. 4

##### Condition Reports and Nonconformance Report Reviewed:

CR-2012-950	Excavation within SBM-1003 Foundation Support Zone
CR-2012-1088	Manhole Subgrade Not Inspected by QC
CR-2012-1091	Language used in Conditional Release Not Accurate
CR-2012-1104	NRC Identified Issues with Work Plan 0000-CIVIL-813-003
NCR-2012-0950	Excavation within SBM-1003 Foundation Support Zone

##### Other Documents:

114489-G-01, Develop Report – Quality Boring Logs & Subsurface Profiles  
 114489-G-04, Bases of Geotechnical Parameters Recommended for Design  
 114489-G-0009, Assess Impacts of Various Loads on Estimated Settlements of Cascade Halls  
 444758-1003-C-CAL-011-0, Foundation Design

##### Work Plans

WP 1003-CIVIL-820-002, Remove Temporary Ramp and Associated Fill Material East of UF<sub>6</sub> Area  
 WP 1003-CIVIL-811-002, Site Excavation and Backfill Building 1003  
 WP 0000-CIVIL-812-007, Backfill Area East of SBM 1003  
 WP 0000-CIVIL-813-013, Install Duct Bank, Man Hole No.81, East of 1003

#### 5. **ACRONYMS AND INITIALISMS**

ADAMS	Agency-Wide Document Access and Management System
ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
CR	Condition Report
CRDB	Cylinder Receipt and Dispatch Building
GEVS	Gaseous Effluent Ventilation System
IBC	International Building Code
IFI	Inspector Follow-up Item
IP	Inspection Procedure
IROFS	Items Relied on for Safety
ISA	Integrated Safety Analysis
LES	Louisiana Energy Services
MC&A	Material Control and Accountability
NCR	Nonconformance Report

NEF	National Enrichment Facility
NFPA	National Fire Protection Association
No.	Number
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
QA	Quality Assurance
QAPD	Quality Assurance Program Description
QL	Quality Level
Rev.	Revision
RII	Region 2
SAR	Safety Analysis Report
SBM	Separation Building Module
SL	Severity Level
UF <sub>6</sub>	Uranium Hexafluoride
VIO	Violation
WP	Work Plan