



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II**

245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

May 8, 2017

Stephen Cowne, Chief Nuclear Officer
and Compliance Manager
URENCO USA
P.O. Box 1789
Eunice, NM 88231

SUBJECT: LOUISIANA ENERGY SERVICES, LLC, URENCO USA – NUCLEAR
REGULATORY COMMISSION INSPECTION REPORT
70-3103/2017-006

Dear Mr. Cowne:

The Nuclear Regulatory Commission (NRC) conducted an announced inspection during the week of April 10, 2017, at the Louisiana Energy Services, LLC, URENCO USA facility located in Eunice, New Mexico. The purpose of the inspection was to perform Temporary Instruction (TI) 2600/16, Inspection of Activities Associated with NRC Generic Letter 2015-01, Treatment of Natural Phenomena Hazards in Fuel Cycle Facilities. The enclosed report presents the results of the inspection. The results were discussed with you and members of your staff at an exit meeting on April 12, 2017.

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

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. Because this violation was entered into the licensee's NRC-approved corrective action program to restore compliance, it is being treated as a non-cited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy. The NCV is described in the enclosed inspection report. If you contest the violation or significance of the NCV, 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 the: (1) Regional Administrator, Region II; and (2) Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with Title 10 of the Code of Federal Regulations, Section 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, 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 Agencywide Documents Access and Management 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 or proprietary information so that it can be made available to the Public without redaction.

If you have any questions regarding this matter, please contact me at (404) 997-4703.

Sincerely,

/RA/

Omar López-Santiago, Chief
Safety Branch
Division of Fuel Facility Inspection

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

Enclosure:
Inspection Report No. 70-3103/2017-006
w/Attachment: Supplementary Information

cc: (See page 3)

cc:

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SUBJECT: LOUISIANA ENERGY SERVICES, LLC, URENCO USA – NUCLEAR
 REGULATORY COMMISSION INSPECTION REPORT
 70-3103/2017-006

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U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No: 70-3103

License: SNM-2010

Report No: 70-3103/2017-006

Licensee: Louisiana Energy Services, LLC

Facility: URENCO USA

Location: Eunice, NM

Inspection Dates: April 10 through April 12, 2017

Inspector: J. Munson, Fuel Facility Inspector

Approved: O. López-Santiago, Chief
Safety Branch
Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

Louisiana Energy Services, LLC
URENCO USA
Nuclear Regulatory Commission Inspection Report 70-3103/2017-006
April 10 - 12, 2017

The inspection implemented Temporary Instruction (TI) 2600/16, Inspection of Activities Associated with Nuclear Regulatory Commission (NRC) Generic Letter 2015-01, Treatment of Natural Phenomena Hazards in Fuel Cycle Facilities. The purpose of the inspection was to independently verify compliance with regulatory requirements and applicable license conditions regarding the treatment of natural phenomena hazards (NPH) events as described in the Integrated Safety Analysis (ISA). The inspection was conducted by an NRC regional inspector during normal shifts in areas of operations safety, chemical safety, nuclear criticality safety, and emergency preparedness. The inspector performed a selective examination of license 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. One licensee-identified non-cited, Severity Level IV violation (NCV) was identified.

Assessment of the Potential Accident Sequences, Consequences, and Prevention and/or Mitigation Strategies

The licensee's ISA adequately considered credible:

- Seismic events leading to a UF₆ release and high consequence to the worker and public (Paragraph A.1)
- Tornado, high winds, missile hazards, snow loading, and ice events leading to a UF₆ release and high consequence to the worker and public (Paragraph A.2)
- Flooding events leading to a UF₆ release or inadvertent criticality and high consequence to the worker and public (Paragraph A.3)

One non-cited Severity Level IV violation (NCV) was identified for the failure to establish adequate management measures to ensure that an item relied on for safety associated with design features to maintain UF₆ product liquid sampling leak tight integrity (IROFS28) would remain available and reliable to perform its intended safety function when needed.

Attachment

Key Points of Contact
List of Items Opened, Closed, and Discussed
Inspection Procedures Used
Documents Reviewed

REPORT DETAILS

Summary of Plant Status

The URENCO, USA facility enriches uranium hexafluoride (UF₆) using gas centrifuge technology. During the inspection period, the licensee conducted routine plant operation of the operating cascades.

A. Assessment of the Potential Accident Sequences, Consequences, and Prevention and/or Mitigation Strategies

1. Seismic Events

a. Inspection Scope and Observations

For seismic events imposed on Separations Building Modules (SBMs), the Interconnecting Corridor, the Cylinder Receipt and Dispatch Building (CRDB) shell and bunker, the Centrifuge Assembly Building (CAB), and the Uranium Byproduct Cylinder (UBC) Storage Pad crane that could ultimately lead to a UF₆ release, the licensee has implemented:

1. IROFS27e, a design feature of buildings containing UF₆ process systems for seismic, tornados, high winds, roof snow load and roof ponding, and site flooding due to local intense precipitation, applied to SBMs 1001 and 1003 (including associated UF₆ Handling Area buildings), all UF₆ Handling Areas beyond SBM-1003, the Interconnecting Corridor, the CRDB Shell and UBC Storage Pad crane;
2. IROFS27c, a design feature of the CRDB Bunker for seismic and tornado missile loads;
3. IROFS28, a design feature of the autoclave which limits the total seismic releases;
4. IROFSc23, a design feature of the centrifuges to minimize releases applied to the centrifuges in all SBMs.

The inspector reviewed aspects of IROFS27e, IROFS27c, IROFS28, and IROFSc23. This included a review of IROFS boundary documents, applied management measures, Corrective Action Program (CAP) entries, and implementing procedures. The inspector performed direct field observations related to IROFS28, including the observation of both Operations and Engineering verifications, and performed interviews regarding training and management measure implementation related to IROFSc23, IROFS27e, and IROFS28. The inspector reviewed the most recent exterior roof inspection documentation for IROFS27e. Additionally, the inspector reviewed the licensee's Emergency Plan to determine whether NPH-related events were considered.

Failure to Establish Adequate Management Measures to Ensure the Availability and Reliability of IROFS28

A licensee-identified non-cited Severity Level IV violation (NCV) of 10 CFR 70.62(d) was identified for the failure to establish adequate management measures to ensure the availability and reliability for IROFS28, a sole IROFS designed to protect product liquid UF₆ sampling leak tight integrity during a seismic event. 10 CFR 70.62(d) states, in part, that each licensee shall establish management measures to ensure compliance with the performance requirements of §70.61. The management measures shall ensure that

items relied on for safety (IROFS) are designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed.

Contrary to this requirement, on or before December 28, 2016, the licensee failed to establish adequate management measures to ensure IROFS are maintained, as necessary, to ensure they are available and reliable to perform their function when needed. Specifically, the licensee failed to establish an adequate procedure for obtaining a UF₆ liquid product sample, resulting in the movement of a cylinder within an autoclave and damage to the stillage locking bolts (an IROFS28 component). The procedure for obtaining a UF₆ liquid product sample did not provide adequate guidance to ensure proper placement of the saddle over the stillage's centering bolts. This resulted in improper placement and damage to the stillage locking bolts. The damage to the stillage locking bolts represented a degradation to IROFS28. This issue was determined to be more than minor because it aligned with Inspection Manual Chapter (IMC) 0616, "Fuel Cycle Safety and Safeguards Inspection Reports," Appendix B, "Examples of Minor Issues," screening question 9 which asks, "[d]oes the noncompliance adversely affect the ability of an IROFS or safety related component to perform its intended safety function?" As previously discussed, the stillage locking bolts are a component of IROFS28. The intended function of IROFS28 is to protect product liquid UF₆ sampling leak tight integrity during a seismic event. The damage to the stillage locking bolts and subsequent movement of a cylinder within the autoclave adversely affected the ability of IROFS28 to perform its intended safety function of protecting leak tight integrity during a seismic event. Upon discovery, the licensee entered the condition into their Corrective Action Program (CAP) as EV 116677 and performed a Root Cause Evaluation (RCE).

The inspectors determined that the actual safety significance was low as no high or intermediate consequence events occurred. The inspectors determined that the potential safety significance was also low because, despite IROFS28 being degraded, the likelihood of a chemical release during a seismic event remained highly unlikely based on the licensee's ISA.

In accordance with the NRC Enforcement Policy section 2.2.2 (d), violations that are less serious, but are of more than minor concern and result in no or relatively inappreciable potential safety or security consequences, are characterized as Severity Level IV violations. Because this violation was entered into the licensee's NRC-approved corrective action program to restore compliance, it is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.

b. Conclusion

One licensee-identified non-cited Severity Level IV violation (NCV) of 10 CFR 70.62(d) was identified for the failure to establish adequate management measures to ensure the availability and reliability for IROFS28.

2. Tornado, High Winds, Missile Hazards, and Snow Loading and Ice Events

a. Inspection Scope and Observations

For events involving excessive tornado and high winds leading to building failure of the SBMs, Interconnecting Corridor, the CRDB Shell, or the UBC Storage Pad crane, the licensee has imposed (1) IROFS27e, and (2) IROFSc23. For events involving tornado missile penetration into the SBMs, the licensee has imposed (1) IROFS28, and (2) IROFS39d, an administrative control requiring preemptive worker evacuation for tornados. For events involving snow loading and ice on the SBMs, Interconnecting Corridor, CRDB Shell roof, or UBC Storage Pad crane, the licensee has imposed (1) IROFS27e, and (2) IROFSc23.

The inspector reviewed aspects of IROFS27e, IROFSc23, IROFS28, and IROFS39d. This included a review of IROFS boundary documents, applied management measures, CAP entries, and implementing procedures. The inspector performed direct field observations related to IROFS28, and performed interviews regarding training and management measures implementation related to IROFSc23, IROFS27e, and IROFS28. Additionally, the inspector reviewed training materials and performed interviews with Operations personnel related to IROFS39d.

b. Conclusion

No findings of significance were identified.

3. Flooding Events

b. Inspection Scope and Observations

For events involving flooding, the licensee determined that the sole credible source is due to local intense precipitation. For events involving flooding due to local intense precipitation, the licensee has imposed (1) IROFS27e and (2) IROFSc23. A UF₆ release resulting in a high consequence to the worker and/or public was the primary concern from a local intense precipitation event.

The inspector reviewed aspects of IROFS27e and IROFSc23. This included a review of IROFS boundary documents, applied management measures, CAP entries, and implementing procedures. The inspector performed interviews regarding training and management measure implementation related to IROFS27e and IROFSc23.

The inspector performed interviews with members of the licensee's nuclear criticality safety (NCS) function and reviewed various documents to determine how flooding is considered for NCS purposes. The inspector determined that the licensee incorporates a 60 cm flooding assumption into NCS analyses where flooding due to local intense precipitation is considered credible. The inspector determined that this assumption, in conjunction with other NCS technical practices utilized by the licensee including optimum interaction conditions under the presence of interspersed moderator, conservatively bound the conditions presented by a local intense precipitation event, and is consistent with the integrated safety analysis (ISA) and safety analysis report (SAR).

c. Conclusion

No findings of significance were identified.

B. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff at various meetings throughout the inspection period and were summarized on April 12, 2017, to Mr. S. Cowne and other members of the licensee's staff. No dissenting comments were received from the licensee. Proprietary information was discussed in these meetings, but not included in this report.

SUPPLEMENTARY INFORMATION

1. KEY POINTS OF CONTACT

<u>Name</u>	<u>Title</u>
S. Cowne	Chief Nuclear Officer and Compliance Manager
S. Thyne	Licensing
W. Padgett	Licensing
N. Wells	Licensing
J. Taylor	Licensing
R. Medina	Licensing
Q. Newell	NCS/ISA
A. Riedy	NCS/ISA
K. Miller	Engineering

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

70-3103/2017-006-01	NCV	Failure to Establish Adequate Management Measures for IROFS28 (Paragraph A.1)
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3. INSPECTION PROCEDURES USED

TI 2600/016	Inspection of Activities Associated with NRC Generic Letter 2015-01
88015	Nuclear Criticality Safety
88020	Operational Safety
88050	Emergency Preparedness
88055	Emergency Preparedness

4. DOCUMENTS REVIEWED

IROFS Boundary Documents:

NEF-BD-27c, Design Features of CRDB Bunkered Area, Revision (Rev.) 1
NEF-BD-27e, Design Features of the SBM, CRDB Shell, and the UBC Storage Pad Crane, Rev. 8
NEF-BD-28, Design Feature to Maintain Product Liquid Sampling Leak Tight Integrity, Rev. 4
NEF-BD-39d, Limit Exposure by Requiring Evacuation of CAB, SBM, and CRDB on Severe Weather Event
NEF-BD-c23

Procedures:

EG-3-5200-01
EG-3-5200-03
EG-3-5200-04
EG-3-0200-10
EG-4-1000-02

OP-3-0470-01
RP-3-3000-20
RP-3-3000-08

Work Orders:

1000101268
1000113137
1000119405
1000123045
1000144113
1000177530
1000177531
1000196170
1000213489
1000231067
1000255374

EVs:

110839
114284
114304
114793
116677
117371
117645
117666