



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

January 19, 2017

Gary J. Laughlin, Chief Nuclear Officer
and Head of Operations
URENCO USA
P.O. Box 1789
Eunice, NM 88231

**SUBJECT: LOUISIANA ENERGY SERVICES, LLC, URENCO USA – NUCLEAR
REGULATORY COMMISSION INTEGRATED INSPECTION REPORT
70-3103/2016-005**

Dear Mr. Laughlin:

This letter refers to the inspections conducted from October 1 through December 31, 2016, at the Louisiana Energy Services, LLC, URENCO USA facility located in Eunice, New Mexico. The purpose of the inspections was to determine whether licensed activities were conducted safely and in accordance with Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of these inspections, which were discussed with you and other members of your staff on October 20, and December 22, 2016.

The inspections examined activities conducted under your license, as they related to public health and safety, to confirm compliance with NRC rules and regulations and with the conditions of your license. The inspections covered the areas of Operational Safety, Nuclear Criticality Safety and Permanent Plant Modifications. Within these areas, the inspections consisted of examination of selected procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of these inspections, 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) 997-4620.

Sincerely,

/RA/

Brannen Adkins, Acting Chief
Projects Branch 1
Division of Fuel Facility Inspection

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

Enclosure:
Inspection Report No. 70-3103/2016-005
w/Attachment: Supplementary Information

cc: (See page 3)

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G. Laughlin

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U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No: 70-3103

License: SNM-2010

Report No: 70-3103/2016-005

Licensee: Louisiana Energy Services, LLC

Facility: URENCO USA

Location: Eunice, NM

Inspection Dates: October 1 through December 31, 2016

Inspectors: G. Goff, Fuel Facility Inspector (Paragraph B.1)
J. Munson, Fuel Facility Inspector (Paragraph A.2 and C.1)
T. Sippel, Fuel Facility Inspector (Paragraph A.1)

Approved: B. Adkins, Acting Chief
Projects Branch 1
Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

Louisiana Energy Services, LLC
URENCO USA
Nuclear Regulatory Commission Integrated Inspection Report 70-3103/2016-005
October 1 – December 31, 2016

Regional inspectors from the Nuclear Regulatory Commission (NRC) conducted announced inspections during normal shifts. The inspectors performed a selective examination of licensee activities 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. There was one non-cited, Severity Level IV violation (NCV) identified.

Safety Operations

- No violations of NRC requirements were identified in the operations safety area. The plant operational activities and items relied on for safety (IROFS) selected for review were implemented in accordance with the materials license and applicable regulatory requirements. (Paragraph A.1)
- An NRC-identified, NCV was identified in the nuclear criticality safety area for the failure to obtain prior NRC approval for changes to the Safety Analysis Report (SAR) regarding the addition of an enrichment control in the Liquid Effluent Collection and Treatment Systems room. (Paragraph A.2)

Facility Support

- No violations of NRC requirements were identified. The plant modifications selected for review were implemented in accordance the license and applicable regulatory requirements. (Paragraph B.1)

Other Areas

- The inspectors conducted an operational readiness review of various aspects of the new and revised IROFS for the Solid Waste Collection and Ventilated Rooms. No violations of NRC requirements were identified. (Paragraph C.1)

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 using a gas centrifuge technology. During the inspection period, the licensee conducted routine plant operation of the operating cascades.

A. Safety Operations

1. Operational Safety (Inspection Procedure (IP) 88020)

a. Inspection Scope and Observations

The inspectors interviewed staff and reviewed records associated with the Cylinder Receipt and Dispatch Building (CRDB). The inspectors focused on liquid and solid waste handling operations in the Small Component Decontamination Train (SCDT), the Multi-Function Decontamination Train (MFDТ), and the Liquid Effluent Collection and Transfer System (LECTS). The inspectors determined that the administrative items relied on for safety (IROFS), applied to these systems, were implemented and properly communicated as described in the Integrated Safety Analysis (ISA) and the Safety Analysis Report (SAR).

The inspectors reviewed the Operating Requirements Manual (ORM) and/or IROFS boundary documents for IROFS 23b, 24a, 55a/b, 58a/b to determine whether the required actions identified in the ISA Summary were being implemented in these operating documents. The inspectors also evaluated the required operating limits and operator responses for upset conditions and to verify that actions needed to assure safety were adequately described in the procedures listed below.

The inspectors interviewed and observed operators responsible for solid and liquid waste handling in the CRDB to verify that they were adequately implementing the required safety controls and that they were adhering to applicable safety procedures. The inspectors reviewed the procedures applicable to the tasks being observed to determine whether these operator aids were current, reflected safety controls, and were followed by the operators. The procedures reviewed included the following:

- RW-3-1000-18, Bulking Enriched Waste,
- RW-3-2000-01, LECTS Slab Tank Operations,
- RW-3-2000-04, LECTS Fill Station Operations,
- RW-3-2000-05, Small Component Decontamination Train Uranium Waste Mass Bookkeeping, and
- RW-3-4000-01, Startup, Shutdown, and Operation of the SCDT.

The inspectors conducted interviews and reviewed audit records to verify that the licensee conducted audits of the operational areas and activities as required by Section 11.5.2 of the SAR. Specifically, the inspectors reviewed the licensee audits documented in 2016-S-02-06, 2016-S-03-09, 2016-S-06-17, and 2016-S-07-20. The inspectors reviewed a selection of corrective action program (CAP) items (EV 113110, EV 113299, and EV 113680) entered since the last Operational Safety inspection to verify that the

licensee was identifying operational safety problems at an appropriate threshold, and entering them into their CAP, in accordance with Section 11.6 of the SAR. The inspectors also reviewed various operator training and qualification records (various TQ 3-0100-12-F-6 Forms) and classroom training records (GWLECTSBRIEF) related to administrative IROFS to verify that the licensee was conducting on-the-job training for these administrative IROFS as required by Sections 11.3.6 and 11.3.7 of the SAR.

b. Conclusion

No findings of significance were identified.

2. Nuclear Criticality Safety (IP 88015)

a. Inspection Scope and Observations

The inspectors evaluated the adequacy of the licensee's nuclear criticality safety (NCS) program and analyses to assure the safety of fissile material operations. The inspectors reviewed various documents including NCS analyses (NCSA) and evaluations (NCSE), performed area walk-downs, and conducted interviews in order to assess whether subcriticality with an approved margin was assured for all normal and credible abnormal conditions and whether at least two unlikely, independent, and concurrent changes in process conditions were required before inadvertent criticality was possible. The NCSA demonstrated adequate identification and control of criticality hazards to assure operations within subcritical limits through appropriate limits on controlled parameters. The inspectors conducted discussions and interviews with the area operators, area supervisors, NCS engineers, and licensing engineers. The NCSA and NCSE reviewed included the nuclear criticality safety evaluations (NCSEs) of the LECTS room, component movement, general storage of fissile material, the SCDT, and the NCSA of safe spacing for waste drums involving decontamination activities.

The inspectors interviewed NCS staff and observed a weekly walk-down of the Gaseous Effluent Ventilation System (GEVS). The inspectors reviewed aspects of the procedures, commitments, and records for weekly walk-downs, annual audits, and annual self-assessments to verify that the licensee is meeting its commitments as identified in the SAR.

The inspectors performed a plant walk-down of the SCDT, MFDT, LECTS, Solid Waste Collection Room, and Ventilated Room. The inspectors interviewed NCS engineers and operations staff before and during walk-downs to confirm that NCS-related controls were installed or being implemented in a way that performs the safety function specified in the associated NCSA or NCSE and were adequate to ensure safety. The inspectors reviewed aspects of selected NCS-related IROFS, including IROFS c22, 31a/b, 53a/b, 55a/b, and 58a/b. The inspectors observed that the reviewed IROFS adequately limited the risk of inadvertent criticality to within regulatory limits, were implemented as designed, and had the appropriate management measures applied to ensure their availability and reliability.

The inspectors reviewed two separate CAP entries in response to the recent event involving the S-1030 ventilation scrubber at Westinghouse. The inspectors observed that the licensee assessed their GEVS to verify that similar conditions were not present at their facility. The inspectors reviewed various documents related to the GEVS in

order to ensure that invalidated assumptions were not present in the NCSA and NCSE, performed a detailed walk-down of the GEVS and reviewed biannual filter replacement data in order to ensure that the established controls to limit uranium accumulation in the ventilation system were effective, and reviewed the licensee's assumptions regarding surveillance frequency and input sources to the GEVS to ensure that process chemistry was adequately understood.

The inspectors reviewed licensing basis document change requests LBDCR-13-0007 and LBDCR 14-0008-A to verify that the changes were performed in accordance to regulatory requirements.

Failure to Obtain Prior NRC Approval for SAR Changes to Add Enrichment Control in the LECTS

Introduction: An NRC-identified, non-cited Severity Level (SL) IV violation was identified for the failure to obtain prior NRC approval as required by the Louisiana Energy Service, LLC (LES) Materials License SNM-2010. Specifically, the licensee failed to obtain prior NRC approval for changes to SAR Table 5.1-2, "Safety Criteria for Buildings/Systems/Components," and SAR Section 5.1.2, "Control Methods for Prevention of Criticality," which resulted in non-conservative modifications to values for criticality-based analysis.

Description: Various process equipment, including the SCDT and MFDT, drain uranium-bearing solution to a bank of favorable geometry slab tanks. The solution in the slab tanks then undergoes dual, independent samples for uranium concentration and enrichment (IROFS 55a/b) before ultimately being transferred to a bank of large, unfavorable geometry bulk tanks in the LECTS.

Previously, the licensee relied on mass control to limit the risk of criticality within the bulk tanks. Under the previous mass control, the information from the dual, independent samples was used to determine the uranium-235 (^{235}U) mass present within the favorable geometry slab tanks. The ^{235}U mass within the slab tanks was then compared to the ^{235}U mass already present within the unfavorable geometry bulk tanks to verify that a transfer of the solution would not result in an exceedance of an established mass limit. In the event that a transfer of the solution would exceed the established mass limit, the licensee would not transfer the solution until mass could be removed from the bulk tanks into totes.

LBDCR-13-0007 changed Revision (Rev.) 33 of the SAR, Table 5.1-2, "Safety Criteria for Buildings/Systems/Components," to add enrichment as an acceptable control mechanism for tanks. LBDCR 14-0008-A implemented the change from mass to enrichment control for the LECTS bulk tanks. Under the new enrichment control, the information from the dual, independent samples (IROFS 55a/b) was used to determine the enrichment of the solution within the favorable geometry slab tanks to verify that the enrichment is less than or equal to 1% ^{235}U (by weight) prior to transfer to the unfavorable geometry bulk tanks. In the event that the enrichment of the solution within the slab tanks exceeded 1% ^{235}U , the licensee would add additional depleted material either directly to the waste stream, to the LECTS slab tanks, or indirectly upstream through the MFDT to lower the effective enrichment to less than 1% ^{235}U .

Materials License SNM-2010, License Condition (LC) 30, allows the licensee to make changes to the SAR, without prior NRC approval, provided certain criteria are satisfied. The licensee evaluated the changes to the SAR against the criteria detailed in LC-30 and determined that prior NRC approval was not required. The inspectors independently evaluated the changes to the SAR against LC-30 criteria. LC-30, paragraph b, states, in part, that changes to the SAR shall be evaluated, documented, and reported in accordance with the commitments in Enclosure 1 of correspondence to the NRC dated May 24, 2012 (LES-12-00074-NRC). Licensee LES-12-00074-NRC, Enclosure 1, explicitly states, in part, that no changes shall be made, without prior NRC approval, to specific sections of the SAR Chapter 5 that would result in modifying the current values for criticality-based analysis in a less conservative direction. Specific Chapter 5 sections include 5.0, 5.1.1 through 5.1.5, 5.2.1.2 through 5.2.1.7, and Tables 5.1.1 and 5.1-2. The inspectors reviewed Revs. 33, 34, and 41b of the SAR and determined that the licensee made changes to some of the specific sections listed above. Revision 33 of the SAR, Table 5.1-2, provided the acceptable control mechanisms for tanks (such as the LECTS bulk tanks), which included mass as the sole acceptable control mechanism. Revision 34 of the SAR revised the acceptable control mechanisms listed in Table 5.1-2 for tanks to include enrichment control. The stated safety criteria provided was an enrichment of $\leq 1\%$ (by weight) ^{235}U . Additionally, Rev. 41b modified SAR Section 5.1.2 to indicate that the LECTS bulk tanks are analyzed at an enrichment of 1% ^{235}U , where previous SAR versions explicitly stated that for systems and components other than those associated with a cascade dump that an enrichment of 6% ^{235}U would be used for NCS analyses. The inspectors determined that the licensee made changes to some of the specific sections listed above; therefore, the inspectors evaluated the changes to determine whether they resulted in modifying values for criticality-based analysis in a less conservative direction.

Nuclear criticality safety analysis is crucial at determining safe values for NCS parameters, including mass, volume, geometrical dimensions, concentrations, etc. The safe parameter values determined by NCS analysis inform the controls and limits imposed in operation by the licensee. In order to determine safe parameter values, the licensee utilizes a validated neutronics code to perform NCS analysis (MONK). The MONK code requires certain inputs/assumptions, including (but not limited to) assumptions on geometry, moderation, material composition, reflection, and enrichment. These assumptions have a direct impact on the results, which are the calculated safe parameter values. The calculated safe parameter values are highly sensitive, in particular, to the input/assumption on enrichment. In general, as enrichment increases, safe values for mass, volume, and geometrical dimensions decrease. Likewise, as enrichment decreases, safe values for mass, volume, and geometrical dimensions increase. As such, for analytical purposes in establishing safe parameter values, it is conservative to assume a higher enrichment than the actual operational enrichment. This was emphasized by SAR revisions prior to 41b, where SAR Section 5.1.2, "Control Methods for Prevention of Criticality," stated, in part, that enrichment is controlled to limit the percent ^{235}U within any process vessel or container to a maximum of the LES license limit except for the systems and components associated with a cascade dump. *For added conservatism systems controlled to the LES license limit are analyzed at 6% ^{235}U .*

The licensee performed an analysis to establish safe mass values as a function of enrichment, varying the enrichment from 0.711% ^{235}U (natural assay) to 6% ^{235}U . Prior to the change, consistent with SAR Section 5.1.2, the licensee used the analytical results from the input/assumption of 6% ^{235}U to establish a safe parameter value for

mass. This result informed the actual limit imposed by the licensee of 730 grams (g) ^{235}U as stated in Table 5.1-2. After the change, the licensee used the analytical results from the input/assumption of 1% ^{235}U to establish a safe parameter value for mass. This result informed the licensee's determination that a mass limit or control was not needed.

The inspectors determined that the change to SAR Section 5.1.2 in Rev. 41b represented a non-conservative modification to the values used for criticality-based analysis. Specifically, the previous value used for criticality-based analysis of 6% ^{235}U was modified in a non-conservative direction to 1% ^{235}U . This modification resulted in a less conservative analytical result for safe mass values. As previously stated, the analytical results for safe parameter values inform the controls and limits imposed in operation by the licensee. The use of the analytical results from the input/assumption of 1% ^{235}U established a higher, non-conservative safe parameter value for mass. This result informed the licensee's determination that a mass limit or control was not needed. The change to SAR Table 5.1-2 reflected the determination that a mass control or limit was not needed by adding enrichment as an acceptable sole control mechanism for tanks. The inspectors determined that the change to SAR Table 5.1-2 to add enrichment as an acceptable sole control mechanism for tanks represented a non-conservative modification to the values used for criticality-based analysis. Specifically, though not explicitly stated in Table 5.1-2 because the licensee determined that a mass limit was not needed, the previous imposed mass limit of 730g ^{235}U was modified in a non-conservative direction to a value that was essentially infinite and therefore not controlled.

Analysis: The licensee's failure to submit to the NRC, for review and approval, an application to amend SNM-2010 for changes to the SAR was a violation of NRC requirements. Specifically, the licensee failed to obtain prior NRC approval for changes made to SAR Table 5.1-2, "Safety Criteria for Buildings/Systems/Components," and SAR Section 5.1.2, "Control Methods for Prevention of Criticality." This failure is a violation of SNM-2010 LC-30, paragraph b, which requires, in part, that changes to the SAR shall be evaluated, documented, and reported in accordance with the commitments in Enclosure 1 of LES-12-00074-NRC. LES-12-00074-NRC explicitly states, in part, that no changes shall be made, without prior NRC approval, to specific sections of the SAR Chapter 5 that would result in modifying the current values for criticality-based analysis in a less conservative direction. Specific Chapter 5 sections include 5.0, 5.1.1 through 5.1.5, 5.2.1.2 through 5.2.1.7, and Tables 5.1.1 and 5.1-2.

This issue was determined to be more than minor because it aligns with Inspection Manual Chapter 0616 Appendix B, Screening Question 14, which states, "[d]oes the noncompliance involve a failure to properly perform a 10 CFR 70.72 evaluation where the licensee failed to obtain a license amendment for the change?" An LC-30 evaluation is similar to a 10 CFR 70.72 evaluation, and the licensee failed to obtain a required license amendment. Therefore, this issue was determined to be more than minor. Additionally, this issue is similar to Example 4 of Section 6.2.d of the NRC Enforcement Policy. This example states that under 10 CFR 70.72, a SL IV violation involves a less significant failure to adequately evaluate a change to the facility that results in implementation of the change without a required license amendment, and the failure does not result in a SL I, II, or III violation.

The actual safety significance is low because no high or intermediate consequence events occurred. The potential safety significance is also low because the failure did not result in an unacceptable state of risk (i.e., high consequence event not “highly unlikely” or intermediate consequence event not “unlikely”).

Enforcement: Materials License SNM-2010, LC 30, Paragraph a, states, in part, that the licensee shall not make changes to the SAR, without prior NRC approval, unless the criteria in Paragraph b are satisfied. For changes requiring prior NRC approval, the licensee shall submit to the NRC, for review and approval, an application to amend the license. Such changes shall not be implemented until approval is granted unless prior written Authorization is provided by the NRC.

Paragraph b, states, in part, that changes to the SAR shall be evaluated, documented, and reported in accordance with the commitments in Enclosure 1 of LES-12-00074-NRC.

Enclosure 1 of LES-12-00074-NRC, states, in part, that no changes shall be made, without prior NRC approval, to specific sections of the SAR Chapter 5 that would result in modifying the current values for criticality-based analysis in a less conservative direction. Specific Chapter 5 sections include 5.0, 5.1.1 through 5.1.5, 5.2.1.2 through 5.2.1.7, and Tables 5.1.1 and 5.1-2.

Contrary to the above, on July 8, 2013, and October 11, 2016, the licensee failed to obtain prior NRC approval for changes to specific sections of the SAR Chapter 5 that resulted in modifying the current values for criticality-based analysis in a less conservative direction. Specifically, the licensee failed to obtain prior NRC approval for a change to SAR Section 5.1.2, which modified the enrichment value used for criticality-based analysis from 6% ^{235}U to 1% ^{235}U . This modification resulted in a less conservative analytical result for safe mass values. Additionally, the licensee failed to obtain prior NRC approval for changes to SAR Table 5.1-2, which modified the value used for criticality-based analysis from a small, finite mass limit (730g ^{235}U) to a mass that was essentially infinite and therefore not controlled.

The actual and potential safety significance were determined to be low because no high or intermediate consequence events occurred, and the change did not result in an unacceptable state of risk.

In accordance with the NRC Enforcement Policy, violations that are less serious, but are of more than minor concern and resulted in no or relatively inappreciable potential or security consequences are characterized as SL IV violations. The failure to obtain prior NRC approval for SAR changes as required by SNM-2010 LC-30 is a SL IV violation of NRC requirements. In accordance with Section 2.3.2.a of the NRC Enforcement Policy, this violation is dispositioned as an NCV due to being entered into the licensee’s NRC-approved CAP as EV 116554. This violation will be opened and closed as NCV 70-3103/2016-005-01, Failure to Obtain Prior NRC Approval for SAR Changes to Add Enrichment Control in the LECTS.

b. Conclusion

One NCV of NRC requirements was identified for the failure to obtain prior NRC approval for SAR changes to add enrichment control as an acceptable control mechanism for tanks in the LECTS. This NCV is being tracked as NCV 70-3103/2016-005-01, Failure to Obtain Prior NRC Approval for SAR Changes to Add Enrichment Control in the LECTS.

B. Facility Support

1. Permanent Plant Modifications (IP 88070)

a. Inspection Scope and Observations

The inspectors interviewed several managers and staff involved in the licensee's configuration control processes and reviewed pertinent documents in order to verify that the licensee had established an effective configuration management system to evaluate, implement, and track plant modifications (PMs) which could affect safety.

The inspectors reviewed the licensee's work control program for provisions to ensure adequate pre-job planning and preparation of plant modification design packages. The configuration management system was also reviewed to verify that PMs did not degrade the performance capabilities of IROFS or other safety-related equipment that are part of the original design basis. The inspectors reviewed the designs of PMs to verify that the licensee addressed baseline design criteria stipulated in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 70.64. The inspectors also reviewed and walked down designs of PMs in order to verify that the specific design criteria specified in applicable modification packages were satisfied.

Specifically, the inspectors examined PM design packages, including Quality Level 1 (QL-1) design packages, since the last PMs inspection for accuracy and flow of change process. The inspectors noted that most of the modifications were still in progress in accordance with the design packages. The inspectors walked down modifications to confirm that the "as-built" drawings agreed with the field configurations for the URENCO Technology Center, a new IROFS for an autoclave in Separations Building Module (SBM) 1004, and a recent QL-1 fire wall penetration in SBM 1005.

The inspectors noted that the licensee had management measures in place to ensure that any IROFS affected by facility changes remained capable of performing their intended safety function before approving any modification for operation. The inspectors reviewed the ISA, ISA Summary, and other safety program information developed in accordance with 10 CFR 70.62 in order to verify that the licensee addressed the impacts of modifications to these regulatory documents.

The inspectors reviewed external audits and the licensee's problem identification and resolution program to verify that issues relating to the preparation and installation of PMs were entered into the CAP and that the effectiveness of corrective actions was adequate. The inspectors also examined training for the licensee's staff performing the modification in order to verify that these individuals were qualified to perform the work.

b. Conclusion

No findings of significance were identified.

C. Other Areas

1. Solid Waste Collection Facility and Ventilated Room Operational Readiness Review

a. Inspection Scope and Observations

The inspectors reviewed the planned operations in the Solid Waste Collection Facility and Ventilated Room. The inspectors reviewed the new and revised IROFS and their supporting analyses associated with these operations, including IROFS 23b (personal respiratory protection), IROFS 24a (airflow away from worker), IROFS 36d (transient combustible loading), and IROFS 58a/b (mass and coplanar spacing). The inspectors determined that the systems, structures, and components designed to support safe operation of the Solid Waste Collection Facility and Ventilated Room were constructed in accordance with license requirements. Specifically, the inspectors verified that: (1) there was reasonable assurance that the design, construction, and implementation of IROFS will protect against natural phenomena and the consequences of potential accidents and (2) the construction and testing of IROFS were completed in accordance with the documents comprising the license and the ISA.

b. Conclusion

No findings of significance were identified.

D. 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 October 20 and December 22, 2016, to Mr. G. Laughlin 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>
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M. Graham	ISA/NCS Supervisor
R. Greenbon	Technical Training Specialist
A. Johnson	Licensing and PA Manager
R. Ketchersid	PCES Senior Technician
I. Korbitz	Training Manager
G. Laughlin	Chief Nuclear Officer and Head of Operations
R. Medina	Licensing Engineer II
Q. Newell	NCS Engineer
A. Riedy	Consulting Engineer
J. Rickman	Licensing Specialist

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

70-3103/2016-005-01	NCV	Failure to Obtain Prior NRC Approval for SAR Changes to Add Enrichment Control in the LECTS (Paragraph A.2)
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3. INSPECTION PROCEDURES USED

88015	Nuclear Criticality Safety
88020	Operational Safety
88070	Permanent Plant Modifications

4. DOCUMENTS REVIEWED

Records

2016-S-02-06, Report for the URENCO USA Surveillance of the UUSA Operations Turnover Activities, Revision (Rev.) 0

2016-S-03-09, Report for the URENCO USA Surveillance of the UUSA Recycling Activities, Rev. 0

2016-S-06-17, Report for the URENCO USA Surveillance of the Non-Destructive Assay Measurements of IROFS31a&b Drums, Rev. 0

2016-S-07-20, Report for the URENCO USA Surveillance of Blackout Test / Loss of Off Site Power Test (OP-3-0700-02, Rev. 4), Rev. 0

ISA-IAD-0021

ISA-MEM-0032, Rev. 4

ISA-MEM-0037, Rev. 3

NEF-BD-55a, Limit Liquid Effluent Collection and Transfer System (LECTS) Tanks and Tote Uranium Inventory, Rev. 1

NEF-BD-55b, Rev. 1

NEF-BD-58a, Maintain Subcritical Mass in a Criticality Safety Approved Waste Container Storage Array, Rev. 0
 ORM-23b-24a, Personal Respiratory Use and Establishment of Airflow Away From the Worker for Handling Designated Uranic Material in the CRDB, Rev. 0
 ORM-31a-31b, Limit Uranic Mass Inventory in Non-Safe by Design Solid Waste Containers, Rev. 3
 ORM-36d, Limit Transient Combustible Loading Metal Container Material Exception, Rev. 5
 ORM-55a/b, Administratively Limit Liquid Effluent Collection and Transfer System (LECTS) Tanks and Tote Uranium Enrichment Inventory, Rev. 0
 ORM-58a-58b, Maintain Subcritical Mass and Geometry in a Criticality Safety Approved Waste Container Storage Array, Rev. 0
 GWLECTSBRIEF, LECTS Briefing due to IROFS55a/b Changes, dated July 19, 2016
 TQ-3-0100-12-F-6, Certification/Evaluation Form, (Various operators)
 PXGEVS Filter Mass Determination – IROFS 31a

- RD-100251
- RD-100252
- RD-100253
- RD-100254

Configuration Change Number CC-EG-2015-0174, Rev. 0
 ECR-9326, Update Fire Penetration Seal Drawings-Buildings 1001, 1003, 1005, 1100, 1500, 1600, and 1620
 ECR-9367, 1005 Additional Stillages
 ECR-9369, IROFS12 Pressure Transducer Sensing Line Isolation Valve Locking Bracket
 NEF-BD-12, Rev. 3
 URENCO QA Audit 2015-A-08-015
 Work Orders 1000206703, 1000206847, 1000225662, 1000225663, 1000225664, 1000231345, 1000239592 (2), 1000250768, and 1000254796
 NCS-CSA-022, Safe Spacing for Safe-by-Design Waste Drums Involving Decontamination Activities, Rev. 1
 NCS-CSE-021, Movement of Components, Rev. 7
 NCS-CSE-025, General Storage of Fissile Material, Rev. 6
 NCS-CSE-031, NCSE of the Small Component Decontamination Train, Rev. 0
 NCS-CSE-034, NCSE of the LECTS Room, Rev. 3

Procedures

CR-1000-03, NCS Weekly Walkthroughs and Periodic Assessments
 FP-3-2000-03, IROFS 35 Weekly Fire Door Inspection and IROFS 35/36a/36d Combustible Control Inspection – CRDB and ICC, Rev. 6.
 OP-3-0430-01, Rev. 28
 RW-3-1000-18, Bulking Enriched Waste, Rev. 2
 RW-3-1000-20, Mass Determination of CSA Waste Containers, Rev. 0
 RW-3-2000-01, LECTS Slab Tank Operations, Rev. 6
 RW-3-2000-04, LECTS Fill Station Operations, Rev. 1.
 RW-3-2000-05, Small Component Decontamination Train Uranium Waste Mass Bookkeeping, Rev. 8.
 RW-3-4000-01, Startup, Shutdown, and Operation of the SCDT, Rev. 3.
 EG-3-4100-02, Plant Modifications, dated October 3, 2016
 LS-3-1000-04, 10 CFR 70.72 (c) Evaluations for Proposed Changes, dated October 26, 2015

TQ-3-0100-13, Training and Qualification Guidelines, Rev. 6, dated August 12, 2016

Condition Reports

EV 109958
EV 109992
EV 110308
EV 110309
EV 110354
EV 110386
EV 110473
EV 110861
EV 110948
EV 112339
EV 112690
EV 112743
EV 112882
EV 112954
EV 112965
EV 112995
EV 113144
EV 113555
EV 114128
EV 114251
EV 114303
EV 114331
EV 114513
EV 114576
EV 111040
EV 113110
DACE 113110
EV 113299
EV 113447
EV 113680
EV 114248
EV 114262
EV 114409
EV 1144757
EV 114480

Condition Reports Written as a Result of the Inspection

EV 114743
EV 114744
EV 114745

Change Package

LBD CR-14-0008-A

Other

CA-3-1000-02, Detailed Apparent Cause Evaluation, Rev. 9

2016-A-02-006, Rev. 0

2016-A-10-029, Rev. 0

ORM 3470-2