



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
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ATLANTA, GEORGIA 30303-1257

January 30, 2012

Jay Laughlin
Chief Nuclear Officer
and Head of Technical Services
Louisiana Energy Services, LLC
National Enrichment Facility
P.O. Box 1789
Eunice, NM 88231

SUBJECT: NRC INSPECTION REPORT NO. 70-3103/2011-005

Dear Mr. Laughlin:

The U.S. Nuclear Regulatory Commission (NRC) conducted inspection activities associated with the operations and construction activities of the Louisiana Energy Services, L.L.C., National Enrichment Facility (LES NEF). The inspections were conducted during the period of October 1 through December 31, 2011. The purpose of the inspections was to determine whether activities were conducted safely and in accordance with NRC requirements and your license requirements. Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of a selective examination of records, interviews with personnel, and observations of activities in progress.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," this document may be accessed through the NRC's public electronic reading room, Agency-Wide Document Access and Management System (ADAMS) on the internet at <http://www.nrc.gov/readingrm/adams.html>.

Should you have any questions concerning this letter, please contact me at (404) 997- 4418.

Sincerely,

/RA/

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

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

Enclosure: NRC Inspection Report 70-3103/2011-005
w/ attachment: Supplemental Information

cc w/encls: (See page 2)

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*see previous concurrence *

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Letter to Jay Laughlin from Joselito O. Calle dated January 30, 2012

SUBJECT: NRC INSPECTION REPORT NO. 70-3103/2011-005

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PUBLIC

NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-3103

License: SNM-2010

Report No.: 70-3103/2011-005

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

Facility: National Enrichment Facility (NEF)

Location: Eunice, NM

Inspection Dates: October 1 through December 31, 2011

Inspectors: D. Hartland, Senior Fuel Facility Inspector
J. Pelchat, Senior Fuel Facility Inspector
C. Jones, Sr. Construction Inspector
E. Patterson, Construction Inspector
J. Foster, Fuel Facility Inspector
N. Peterka, Fuel Facility Inspector
M. Toth, Fuel Facility Inspector

Accompanying
Personnel: S. Soto, QA Programs Reviewer
P. Donnelly, Construction Inspector Trainee

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

Enclosure

EXECUTIVE SUMMARY

Louisiana Energy Services, L.L.C., National Enrichment Facility (LES NEF)
Nuclear Regulatory Commission (NRC) Inspection Report No. 70-3103/2011-005

This report is a summary of the quarterly inspections of the licensee's plant operations and construction activities. The inspections were conducted during the period of October 1, - December 31, 2011. The results of the inspections are contained in the details section of this report. The report details section was prepared to exclude the use of information the licensee identified as proprietary. The inspection was conducted through a review of selected records, interviews with personnel, and direct observation of activities in the area of plant operations.

Safety Operations (Inspection Procedure (IP) 88020)

The inspectors noted that operators were adhering to approved procedures and radiological work permit requirements for ongoing activities. However, one unresolved item was identified regarding further review of the adequacy of the licensee's compensatory measures and implementation of the plant modification to address areas in the plant where Criticality Accident Alarm System audibility was not provided. (Section 2)

Fire Protection-Annual (IP 88055)

The inspectors reviewed implementation of regulatory requirements related to the licensee's fire protection program including fire-water pumps, fire extinguishers, fire doors, fire detection systems, and fire suppression systems. No findings of significance were identified. (Section 3)

Evaluation of Exercises and Drills (IP 88051)

The licensee promptly responded to the simulated emergency, classified the event per their respective Emergency Plan, made the appropriate protective action recommendation, and notified local and state authorities of resultant recommendations. No findings of significance were identified with regard to the conduct of the emergency exercise. (Section 4)

Quality Assurance: Program Development and Implementation (IP 88106)

A review of activities related to management self-assessments and independent oversight of the quality assurance program was conducted, including licensee assessments of the implementation of requirements for classification of safety-related activities and structures, systems, and components. No findings of significance were identified. (Section 5).

Inspection of Safety Function Interfaces for the Mixed Oxide Fuel Fabrication Facility (IP 88116)

A review of management measures for identifying activities and systems, structures, and components (SSCs) that affect Items Relied on For Safety (IROFS) and designating their safety-related aspects was conducted by examining interfaces between the Integrated Safety Analysis Summary (ISAS), engineering design, procurement, and installation. No findings of significance were identified. (Section 5)

Quality Assurance: Inspection, Test Control, and Control of Measuring and Test Equipment (IP 88113)

A review of the adequacy of the control and documentation of acceptance tests and inspections was conducted. The review included an evaluation of the handling and control of measuring and test equipment. No findings of significance were identified. (Section 6)

Quality Assurance: Problem Identification, Resolution and Corrective Action (PIRCA) (IP 88110)

A review of licensee evaluations and corrective actions taken for four violations previously identified by NRC inspectors was conducted. Three violations were closed. (Section 7)

10 CFR, Part 21, Inspection - Facility Construction (IP 88111)

A review of the licensee's implementation of requirements for identification and reporting of defects and failures to comply was conducted. No findings of significance were identified. (Section 8)

Control of the Electronic Management of Data (IP 88113)

A review of quality records obtained during the inspection activity was conducted to determine whether records were retrievable, legible, complete, and adequately validated for correct content. No findings of significance were identified. (Sections 5, 6, and 9)

Supplier/Vendor Inspection (IP 88115)

A review of the adequacy of the licensee's procurement control documents, initial quality assurance audits and surveys of suppliers, and periodic audits and surveillances of established suppliers was conducted. No findings of significance were identified. (Section 9)

Attachment

Persons Contacted

Inspection Procedures Used

List of Items Opened, Closed, and Discussed

List of Acronyms Used

List of Documents Reviewed

REPORT DETAILS

1. Summary of Facility Status

The licensee conducted routine plant operation of Cascades 1 through 4 throughout the inspection period. The licensee initiated operation of Cascades 5 and 6 during the period after being granted authorization. Construction and testing in some areas of Separation Building Modules (SBMs) 1001 and 1003 and other applicable process areas continued in preparation for future operation of other cascades and equipment.

2. Safety Operations (Inspection Procedure (IP) 88020)

a. Scope and Observations

The inspectors observed routine operation of cascades with process gas, including the disconnect of a pigtail from a full tails cylinder, with emphasis on the implementation of items relied on for safety (IROFS). The inspectors noted that operators were adhering to approved procedures and radiological work permit requirements for ongoing activities. The inspectors conducted walk-throughs in the facility involved in processing licensed nuclear materials and verified that general plant cleanliness and equipment conditions were maintained to ensure clear egress along established evacuation paths and to minimize the potential for accidents that could have adversely affected control of nuclear material.

The inspectors also reviewed the licensee's "operator work-around" log to determine whether there were any conflicts with license and procedure requirements and that safety evaluations had been performed, as applicable. The inspectors noted that the licensee had implemented some compensatory actions after identifying some areas on the exterior SBM-1001 and within the Criticality Accident Alarm System (CAAS) immediate evacuation zone that did not meet the required audibility requirements using the existing system alarms. As a compensatory action, in the event of a CAAS actuation, operators in the control room would have used the public announcement system to alert personnel to evacuate the affected areas.

The inspectors questioned whether the compensatory measure met the requirements of the licensee's commitment to Regulatory Guide 3.71. After some followup discussion, the licensee performed some audibility testing and implemented some additional compensatory actions to restrict access to affected areas. The licensee also intended to expedite the implementation of a plant modification to augment the CAAS system to provide audibility in those areas. Further review of the adequacy of the licensee's compensatory measures and implementation of the plant modification to address areas in the plant where CAAS audibility was not provided is an unresolved item (URI 70-3103/2011-005-001).

b. Conclusions

The inspectors noted that operators were adhering to approved procedures and radiological work permit requirements for ongoing activities. However, one unresolved

item was identified regarding further review of the adequacy of the licensee's compensatory measures and implementation of the plant modification to address areas in the plant where CAAS audibility was not provided

3. **Fire Protection - Annual (IP 88055)**

a. **Scope and Observations**

The inspection focused on the following areas: SBM-1001 and the 1001 extension, Centrifuge Assembly Building (CAB), and the Uranium By-product Cylinder (UBC) Storage Pad. The inspectors reviewed the licensee's Safety Analysis Report (SAR) to determine license requirements to applicable codes and standards related to fire protection equipment. The fire protection equipment reviewed included fire-water pumps, fire extinguishers, fire doors, fire dampers, fire detection systems, and fire suppression systems.

The inspectors reviewed the licensee's control of combustible materials through implementation of IROFS 36a, 36d, and 36e. The inspectors walked down SBM-1001, the UBC Storage Pad, and the CAB to verify combustible materials were being controlled according to plant procedures and the weekly combustible control inspections were being performed. In addition, the inspectors reviewed the licensee's hot work program implementing procedure and reviewed hot work permits posted where welding was being performed in the SBM-1001 extension.

The inspectors reviewed the licensee's fire detection system and fire suppression systems. The inspectors observed the condition of fire detection and suppression systems in the SBM-1001 and CAB and noted that the devices were spaced properly, not obstructed, or damaged per National Fire Protection Association (NFPA) 72 and NFPA 13. The inspectors verified that the satellite fire alarm panels and central alarm panel received power from two independent sources. The inspectors also verified the central alarm panel electronically supervised the satellite alarm panels and the fire-water pump controllers. The central alarm panel also provided both visual and audible trouble alarms to operators.

The inspectors reviewed the licensee's manual firefighting equipment. The inspectors verified through a sampling that portable fire extinguishers were in acceptable conditions, easily accessible, and spaced appropriately per NFPA 10 in the SBM-1001, UBC Storage Pad, and CAB. The inspector verified the fire-water standpipes were at the appropriate pressure and the pumps could provide an adequate supply of water upon demand. The inspectors also observed a sampling of fire hoses located throughout the SBM-1001 and found them to be in good condition.

The inspectors reviewed the licensee's implementation of passive fire protection features through IROFS 35 and non-IROFS passive fire protection features in the SBM-1001. The inspectors performed a walk-down of the SBM-1001 and tested a sampling of fire doors to ensure they closed and latched, observed the material condition of fire dampers and fusible links, and observed the general condition of fire barrier penetration seals. In addition, the inspector reviewed the licensee's program for compensatory measures and fire barrier impairments.

The inspectors reviewed the licensee's implementation of its instrument, testing, and maintenance (ITM) program for fire protection equipment to ensure the equipment remained available and reliable to perform its intended function when called upon. The inspectors reviewed a sampling of ITM records for the fire detection system, fire-water pumps, fire suppression system, fire extinguishers, fire doors, fire dampers, and other fire protection equipment.

b. Conclusions

The inspectors reviewed implementation of regulatory requirements related to the licensee's fire protection program including fire-water pumps, fire extinguishers, fire doors, fire detection systems, and fire suppression systems. No findings of significance were identified.

4. **Evaluation of Exercises and Drills (IP 88051)**

a. Scope and Observations

The inspectors observed and evaluated the licensee's graded biennial exercise conducted on October 5, 2011. The inspectors reviewed the exercise scenario and discussed exercise objectives with licensee personnel prior to the exercise. The inspectors toured the plant to verify the licensee had not prestaged equipment or personnel in anticipation of the exercise.

The inspectors assessed the effectiveness of visual aids that were to be used by players during the course of the exercise. Inspectors observed licensee response during the drill at the Emergency Operations Center (EOC), the control room, and at the scene of the simulated accident. The inspectors attended several licensee meetings after completion of the exercise that included drill debriefs, critiques, and an exercise evaluation conference that included off-site participants.

Summary of Exercise

The emergency exercise involved unanticipated damage and a consequent fire to a uranium hexafluoride (UF₆) shipping cylinder that resulted in a UF₆ release to the environment. Additionally, licensee personnel received simulated injuries and contamination from the accident, two of which that were critically injured. The inspectors determined that the exercise scenario adequately tested licensee emergency procedures and responders. The inspectors concluded that the licensee integrated appropriate off-site emergency responders as part of this emergency exercise.

Emergency Operations Center and Control Room Observation

At the initiation of the emergency drill, the shift manager in the control room promptly assessed the accident scenario, analyzed the plant condition, and classified the event. The simulated event was appropriately classified as a Site Area Emergency in accordance with the Emergency Plan. The EOC was activated at the initiation of the drill and was fully staffed in accordance with the Emergency Plan. After the EOC activation and as the drill progressed, the Emergency Director continued to assess the accident

and plant conditions. The inspectors verified that the protective action recommendation implemented by the EOC was appropriate for the accident scenario and in accordance with the Emergency Plan.

The inspectors verified that the initial off-site notifications were within the time period specified in the Emergency Plan and were adequate in content. The inspectors also verified that the on-site communications to the occupational workers were consistent with the protective action recommendations implemented by the EOC. The occupational workers performed shelter-in-place and personnel accountability after a site-wide announcement was made. The licensee completed a personnel accountability check to ensure that no site personnel were missing.

The Emergency Director maintained adequate command and control of the EOC. The Emergency Director participated in frequent EOC briefings and participated in three-way communication with his staff.

The inspectors reviewed the Radiological Assessment System for Consequence Analysis (RASCAL) software off-site dose assessment results calculated by the dose assessor in the EOC. The inspectors verified that the limiting hazard was identified and utilized by the dose assessor and EOC staff. The limiting health and safety hazard in the scenario was the chemical aspects from the hydrogen fluoride (HF) plume and not the radiological effects of uranium.

The inspectors observed the pre-job briefings and issuance of the radiological protection team to measure air concentrations for HF and uranium. The team also measured the soil surface for particulate fallout from the plume. The dose assessment, radiation survey results, and environmental monitoring results were utilized by the Emergency Director during the assessment of the accident scenario.

On Scene Observation

The Shift Manager promptly deployed the site fire brigade upon first report of the simulated emergency. The Fire Brigade Leader (FBL) promptly requested off-site fire and rescue and emergency medical technicians. The FBL properly assessed how to approach the scene based on the projected direction of the plume and ensured the safety of the fire brigade. The site fire brigade was delayed because an access port to and from the site was not manned by security forces. The licensee fire brigade had to wait until security forces arrived to allow their egress from the site to the scene of the accident.

The FBL performed face-to-face communications and briefings with each off-site response team to inform each group of the situation. The FBL issued orders and responsibilities to each team for what was required at the scene. The FBL communicated updates back to the Control Room and the EOC at regular intervals and kept each aware of the current status of emergency response.

Emergency Plan implementation procedures designated a Fire Brigade Safety Officer (FBSO) to assist the FBL in technical matters, material releases and other safety concerns. The inspectors observed the interaction between the FBSO and the FBL and determined that the FBL addressed many of these issues alone without any assistance.

The site team promptly responded to the injured personnel at the scene. Emergency vehicles arrived from off-site, and Emergency Medical Technicians (EMTs) were positioned to treat injuries shortly after the simulated emergency was declared. The FBL identified contamination concerns on each injured person and communicated this to EMTs. Emergency Medical Technicians adequately treated injured personnel during the simulated event.

Radiation Protection (RP) technicians assisted in personnel decontamination efforts at the scene. However, the inspectors observed a weakness in that RP technicians did not accompany injured personnel transported by ambulances off-site to assist in decontamination efforts and perform surveys with instrumentation appropriate for the radionuclides used during medical treatment.

The FBL utilized water available from a fire pumper truck for decontamination efforts for injured personnel. However, the licensee did not consider using simulated water spray to reduce or suppress the plume from the damaged cylinder. Using water on the plume may have minimized the on-site and off-site impact of the release.

Critique and Assessment

The inspectors observed the licensee conduct several critique meetings immediately after the exercise, including field teams located at the scene and with members of the EOC. Players that participated in the exercise provided comments and suggestions, and licensee staff documented this information. Additionally, the licensee held controller and evaluator critiques that analyzed the emergency response and documented comments and suggestions for areas requiring improvement. The inspectors determined that these critiques effectively identified weaknesses that were documented in the licensee's corrective action system.

Off-site agencies identified several communication breakdowns during the evaluation conference and the licensee documented these issues as well. A local hospital suggested to the licensee to provide detailed communication regarding the number and condition of patients en route to their facility. During the drill, the hospital received a simulated critically injured patient but initially expected one with more minor injuries. Additionally, as previously noted, an RP technician did not accompany the patient and, thus, the hospital did not have current information regarding the extent of contamination. Several off-site organizations requested that the licensee create a detailed phone list to allow for more effective two-way communication.

b. Conclusions

The licensee promptly responded to the simulated emergency, classified the event per their respective Emergency Plan, made the appropriate protective action recommendation, and notified local and state authorities of resultant recommendations. No findings of significance were identified with regard to the conduct of the emergency exercise.

5. **Quality Assurance: Program Development and Implementation (IP 88106); Inspection of Safety Function Interfaces for the Mixed Oxide Fuel Fabrication Facility (IP 88116); and Control of the Electronic Management of Data (IP 88113)**

a. **Scope and Observations**

The inspectors reviewed the scope and adequacy of internal quality assurance (QA) audits and management assessments conducted in the past 12 months. The review included a determination whether the licensee's audits and assessments adequately examined the compliance and effectiveness of safety function interfaces (ISA-Design, Design-Procurement, and Design-Construction).

The inspectors also reviewed the historical schedule of management self-assessments of functional areas. A sample of three assessment reports was reviewed and responsible managers were interviewed. The inspectors found that the specific assessments required by Procedure CA-3-1001-01, "Performance Improvement Program," and CA-3-1000-09, "Assessments," had been completed.

In general, the assessment reports reviewed by the inspectors provided critical assessments of scope, status, adequacy, programmatic compliance, and implementation effectiveness of QA and other management measures in the applicable areas of responsibility. The reports identified substantive issues and, as required by procedure, assessment findings were entered into the corrective action system. Results of assessments were communicated to senior management.

The inspectors reviewed the historical schedule for internal audits, examined a sample of three completed audit reports, interviewed auditors and responsible managers, and reviewed qualification records for selected audit personnel, including contracted auditors. The inspectors found that selected attributes from all 18 sections of the Quality Assurance Program Description (QAPD) had been evaluated in audits over the previous 12 months.

Audit reports were found to sufficiently address the scope, status, adequacy, programmatic compliance, and implementation effectiveness of quality-affecting activities. Audit plans were established for the audit activities, and reports provided a sufficient level of detail to describe the verifications performed. In general, the reports provided conclusions that were substantiated by objective evidence. Qualifications of auditors and audit team leaders were documented.

As required by procedure QA-3-2000-01, "Quality Assurance Audit," audit findings were entered into the corrective action system. Consistent with the procedure, audit reports reviewed in the inspection sample provided determinations whether previous audit findings had been acceptably resolved. Results of audits were communicated to responsible managers.

The inspectors found that the programs for classification of safety-related activities and systems, structures, and components (SSCs) had not been audited by the LES NEF quality assurance organization. However, an interview with the responsible manager in the QA organization identified that LES NEF had only recently implemented the process of accepting ownership of safety-related SSCs from the engineering, procurement, and

construction agent, and the implementation of controls for classification of operating phase activities and items had not been established long enough to precipitate an independent audit by QA.

As part of the scope of this inspection, the inspectors reviewed selected condition reports, facility procedures, and engineering products to evaluate compliance and effectiveness of safety classifications assigned to the associated activities and SSCs. Engineering products reviewed included a sample of engineering specifications and calculations. The review by the inspectors evaluated the adequacy of interface controls implemented between the Integrated Safety Analysis (ISA) and Design Engineering and between Design Engineering and Procurement.

The inspectors reviewed boundary definition document NEF-BD-41, "Design Features to Ensure Cascade System Pipe Leak Integrity." The document provided definitions of quality level boundaries and enhanced the definitions by the use of boundary definition diagrams. The review of the boundary definition document included a comparison of components defined as Quality Level 1 against the Integrated Safety Analysis Summary (ISAS).

A review of the governing procedure, EG-3-3100-03, "Quality Assurance Level Assignments," found the licensee program established a graded approach to the process of classifying SSCs consistent with the requirements in 10 CFR Part 70. The inspectors also reviewed two design calculations associated with IROFS. The calculations guided the translation of requirements for IROFS into the design output and established a traceable record of the design activity, including identification of the originator, reviewer and processing dates. A review of another engineering product, drawing LES-1001-E-EPQ-001-10-1, determined that the drawing documented the interface between Quality Level 1 and Quality Level 3 components on the autoclave in a manner that was consistent with the boundary definitions.

Along with the document reviews mentioned above, the inspectors reviewed a sample of five procedures to determine whether activities affecting safety-related SSCs, including design, receipt, and installation activities were properly classified as to quality level. The inspectors also reviewed six purchase orders, three specifications, and two work packages to determine if sufficient interface controls were established to define responsibilities and safety function interfaces, and to facilitate information flow and coordination among organizations. The inspectors interviewed individuals associated with construction, engineering, and design to determine if the controls established by procedure were implemented in the field.

Quality records obtained during the inspection activity were reviewed to determine whether records were retrievable, legible, complete, and adequately validated for correct content.

b. Conclusions

Based on the samples reviewed, the implementation of the LES NEF quality assurance program and management measures met applicable requirements defined in the LES QAPD, Integrated Safety Analysis Summary, and applicable NRC regulations. The inspectors concluded that safety-related SSCs were being appropriately characterized

and classified and that controls had been established and were being implemented appropriately for safety function interfaces among organizations. No findings of significance were identified.

6. Inspection, Test Control & Control of Measuring Equipment (IP 88109), and Control of the Electronic Management of Data (IP 88113)

a. Scope and Observations

The inspectors selected elements associated with the licensee's program for inspection, test control, and control of measurement & test equipment (M&TE) to verify the programs were in accordance with the LES QAPD and procedure QA-3-1000-02, "Calibration and Control of Measuring and Test Equipment Used by URENCO USA QC."

The inspectors reviewed a sample of five test and inspection work plans to verify the tests and inspections were performed by personnel other than those who performed or directly supervised the work being inspected. In addition, the review determined whether the work plans included inspection hold points used to control work, whether the hold points were indicated in the work plan documents, and that inspection and test results were documented and conformed to the acceptance criteria.

The inspectors also reviewed training records for the licensee's quality control (QC) inspectors to verify the records were complete, approved, and current in accordance with the LES QAPD. Implementation of requirements for QC inspection was evaluated by reviewing procurement receipt inspection records to verify that final inspections included a review of the inspection results and included resolutions of nonconformances identified. The inspectors verified the licensee was evaluating nonconforming items and observed that the nonconforming items had been properly tagged and segregated to avoid inadvertent installation or use.

In addition to the review of test and inspection work plans, the inspectors reviewed the licensee's controls for M&TE, which included tools, instruments, and gauges used for quality level (QL) -1 activities. The review was performed to verify the M&TE items were controlled, calibrated, and adjusted to maintain accuracy within necessary limits. Also, the inspectors verified the calibrated M&TE was labeled to indicate the due date, or interval of the next calibration, and uniquely identified to provide traceability to its calibration data.

A sample of four work plans was reviewed, to verify that the licensee had established the requirements to identify the status of inspection and test activities, the M&TE used to support the work plan activities was traceable, and M&TE was in calibration during the test and inspection activities. The inspectors conducted observations of the M&TE storage area and the process for issuing test equipment, including the conduct of pre-job calibration verifications. A sample of the M&TE usage logs was reviewed to verify the M&TE was controlled in accordance with QA-3-1000-02. The inspectors examined selected tagged and labeled calibration devices to verify the out of calibration M&TE was being controlled to avoid inadvertent use.

Procedures, documents, and records examined by inspectors are listed in the attachment.

b. Conclusions

Based upon the inspection sample, LES NEF properly implemented the QAPD requirements related to inspection and test control and the control of M&TE. A process was implemented to identify the status of inspection and test activities, and the process provided the required assurance that items, which had not passed the required inspections and tests, were not inadvertently installed or used. No findings of significance were identified.

7. **Quality Assurance: Problem Identification, Resolution And Corrective Action (PIRCA) (IP 88110)**

a. Scope and Observations

The inspectors reviewed documented objective evidence of actions taken to resolve the following open violations issued by NRC inspectors:

70-3103/2010-001-05 (VIO): Failure to Adhere to Formwork Removal Procedure and Specifications

This violation identified two instances where licensee personnel failed to comply with existing procedures, specifications, and work plan instructions. In addition, the work plan instructions were less than adequate to complete the work plan activities. The work plan included hold points for the construction of quality level (QL) -1 concrete walls, and each hold point required an evaluation of the compressive strength prior to removal of formwork.

The violation identified the mandatory hold points were not signed in the work instruction, documentation for the required test report results were not included in the work plan package, and the concrete wall formwork was removed prior to the initial compressive strength test evaluation was complete.

The licensee's response to the violation (ref: ADAMS accession ML1024301601) attributed the cause to a failure to comply with existing procedures, specifications, and work plan instructions. Contributing factors included; (1) project personnel did not fully understand the responsibility and ownership related to proper completion of the work plan steps; (2) the work plans lacked structure for complex work activities leading to incomplete documentation; and (3) the work plan instruction included inappropriate allowances for performing steps out of sequence.

The inspectors reviewed records showing completion of the licensee's corrective actions, including work plan training for work planners, QC, QA, and craft first line supervisors; issuance of a revision to work plan procedure EG-3-6000-01, "Construction Work Plans;" and, issuance of a revision to specification LES-S-S03312, Placing Concrete and Reinforcing Steel. The review also examined a sample of completed work plans for civil placement of structural concrete. The records demonstrated that the

licensee completed training for work plan procedure implementation with the appropriate personnel, to include training on verification steps, hold points, and the sequence of work plan execution.

The work plan instructions had been simplified by the licensee to include enhancing the definition of load bearing and non-load bearing walls in the concrete and reinforcing steel specification. The work plan templates for concrete placement were revised to clarify the verification steps, hold points for concrete pours, compressive strength test points, and form removal verification steps. The work plan procedure was revised to include instructions to clarify work plan process step sequencing. The inspectors determined that the described corrective actions were designed to bring the nonconforming condition back into compliance and provided actions that addressed each of the identified contributing causes. This item is considered closed.

70-3103/2010-001-06 (VIO): Failure to Maintain Accurate QA Records.

This violation identified five instances where the licensee failed to adequately control and maintain quality assurance records as required by the LES QAPD. The licensee's response to the violation (ref: ADAMS accession ML1024301601) attributed the cause to inadvertent loss of pages contained in work plans during handling by numerous workers over the course of the work day.

The inspectors reviewed the adequacy of actions taken to respond to each instance as described below.

- (1) The violation identified that an original material list of installed components for Cylinder Receipt and Dispatch Building (CRDB) work plan 1100-CIVIL-828-003 was missing and irretrievable. In this inspection, the inspectors reviewed the copy of 1100-CIVIL-828-003 that was maintained in quality records and found that a reconstructed material list had been added to the record package.
- (2) The violation identified that the record copy of work plan 101X-CIVIL-823-001 contained incomplete entries for verifications of work performed on two required documents: EG-3-6000-04-F-1, Bolted Connection Worksheet, and EG-3-6000-04-F-3, Structural Steel Inspection Form. The inspectors reviewed the record copy of 101X-CIVIL-823-001 and found that the verification signatures for elevation, bolting, and column plumb line had been documented as complete.
- (3) The violation identified that, in three instances, the record copy of SBM-1001 Extension work plan 1001X-CIVIL-823-002 contained incomplete entries for required verifications of inspections on form EG-3-6000-04-F-3, Structural Steel Inspection. The inspectors reviewed the record copy of 1001X-CIVIL-823-002 and found that the three verifications required for elevation, bolting, and column plumb lines were documented on form EG-3-6000-04-F-3.
- (4) The violation identified that the record copy of CRDB work plan 1100-CIVIL-823-011 did not document that a mandatory hold point had been satisfied prior to the start of work following the hold point. Additionally, Steps 8 through 44 of the work instruction were not completed appropriate to the work performed. The

inspectors' review of the record copy of 1100-CIVIL-823-011 found that the work instruction steps identified in the violation were documented in accordance with requirements of the work instructions.

- (5) The violation identified that the record copy of CRDB work plan 1100-CIVIL-823-025 indicated that steps 5b to 19b of the work instructions had not been documented as work was completed. The inspectors' review of the record copy of 1100-CIVIL-823-025 found that the work instruction steps identified in the violation had been documented as complete.

The inspectors reviewed objective evidence of corrective actions taken to prevent recurrence as recorded in the condition reports issued for the violation. The actions included briefings administered to construction personnel. The briefings emphasized the importance of proper documentation of release of mandatory hold points prior to the start of work, and proper documentation of work plans and quality records. The inspectors determined that the corrective actions corrected the noncompliant records and addressed the causal factors. This item is considered closed.

70-3103/2010-014-02 (VIO): Failure to implement design control measures

This violation identified an instance where licensee personnel modified safety-related process piping and placed the piping into service without conducting the prerequisite design review and approval. No design modification package had been prepared and no licensing basis impact review had been conducted. The licensee had cut open a section of the Cascade 1 process piping to remove foreign material left during construction and subsequently restored the pipe by installing a new weld that did not exist in the original design. The licensee issued Condition Report CR-2010-3207 to address the violation.

The licensee's response to the violation (ref: ADAMS accession ML1036204481) attributed the cause to a deficiency to human performance. Contributing factors included (1) inadequate worker knowledge and skills; (2) inadequate level of detail in the applicable procedure; (3) inadequate communications; and, (4) inadequate supervisory oversight.

The inspectors' review of the licensee's response determined that the described corrective actions were designed to bring the nonconforming condition back into compliance and provided actions that addressed each of the identified contributing causes.

Specifically, the inspectors determined that Design Change Notice (DCN) 2010-001 had been issued to document design engineering's review and approval of the pipe repair and modification. The record copy of the implementing Work Order, WO 3003881, had been updated to contain a copy of the approved DCN and a copy of the associated 70.72 license impact review.

The quality record for CR-2010-3207 was found to contain objective evidence of (1) formal worker training on error prevention tools, technical writing, the 70.72 process, and the QAPD; (2) a clarifying revision to procedure WC-3-1000-02, "Work Package Development, Issuance, and Closure;" (3) a lessons learned briefing to engineering, planning, and maintenance staff that highlighted the weaknesses in vertical and horizontal communications; and, (4) a memorandum from the Maintenance Manager that

explicitly stated expectations for maintenance oversight of contractors. The inspectors determined that completion of the corrective actions had been sufficiently documented. This item is considered closed.

b. Conclusions

Corrective actions implemented for three violations previously identified by NRC were sufficient to restore compliance with applicable requirements and to address the causal factors associated with the violations. The three violations will be closed.

8. **10 CFR 21 Inspection – Facility Construction (IP 88111)**

a. Scope and Observations

The inspectors assessed the implementation of the licensee's program for identification and evaluation of potential defects, and the adequacy of the licensee's reporting of nonconforming items and activities as prescribed by 10 CFR Part 21 and the LES NEF QAPD. The review included record reviews of purchase control documents and direct observations of the implementation of posting requirements to communicate required information to workers related to reporting defects.

Implementing procedures LS-3-1001-01, "Implementation of 10 CFR Part 21" and LS-3-1000-09, "NRC Posting Requirements" were reviewed to verify procedures implemented the program in conformance with the requirements of 10 CFR Part 21. The procedures were found to establish controls for the evaluation of non-conformances, to identify deviations, and screen deviations in accordance with 10 CFR Part 21.

The inspectors reviewed a sample of records, including six procurement receipt inspections, two non-conformances in which the licensee determined a notification to the Commission was warranted, and two non-conformances that did not require notification. In addition, the inspectors conducted direct observations of items identified by the non-conformance reports, verified the items were identifiable, and evaluated using established procedures. The data used in the evaluation was factual, complete, recorded in accordance with 10 CFR Part 21.51, and reported in accordance with 10 CFR 21.21.

The inspection included a review of the licensee's posting procedures and direct observations of three posting locations to verify the postings were implemented in accordance with the requirements of 10 CFR 21.6. The licensee's posting walkdown inspection log was reviewed and the postings were found to be current, legible, and undamaged.

b. Conclusions

Based upon the items and activities inspected, LES NEF had established a program and procedures that implemented the 10 CFR Part 21 requirements related to identifying, evaluating, reporting, and documenting non-conformance items. No findings of significance were identified.

9. **Supplier/Vendor Inspection (Construction Phase) (IP 88115); Inspection of Safety Function Interfaces (IP 88116); and Control of the Electronic Management of Data (IP 88113)**

a. **Scope and Observations**

The inspectors reviewed the adequacy of the licensee's procurement control documents, external quality assurance audits/surveys of suppliers, and periodic external quality audits and surveillances of established suppliers. The scope of inspection review included an assessment of the adequacy of interface controls implemented between Design Engineering and Procurement.

The inspectors reviewed a sample of four purchase orders (POs) and three external QA audit reports. The inspectors found that the selected purchase orders addressed the applicable regulatory, design, technical, administrative, and reporting requirements. In particular, the inspectors found that drawings, specifications, codes and standards, and additional quality assurance requirements were included as specified in LES QAPD for QL-1 items. All the companies identified in the POs were listed as approved suppliers in the LES Approved Supplier List (ASL).

The external audit reports reviewed by the inspectors were found to sufficiently address the scope, status, adequacy, programmatic compliance, and implementation effectiveness of quality-affecting activities. Audit plans had been established for the audit activities, and reports provided a sufficient level of detail for verifications performed. Overall, the reports provided conclusions that were substantiated by objective evidence. Qualifications of auditors and audit team leaders were documented as required by procedure QA-3-2000-01, "Quality Assurance Audit." Results of audits were communicated to responsible managers.

Quality records obtained during the inspection activity were reviewed to determine whether records were retrievable, legible, complete, and adequately validated for correct content.

b. **Conclusions**

Based on the sample of records reviewed, the inspectors determined that the LES NEF procurement control program and external audit activities met the applicable requirements defined in the LES QAPD and along with implementing procedures. No findings of significance were identified.

10. **Exit Meeting / Interviews**

Exit meetings were held with members of the licensee staff, on November 9, and December 8, 2011. Although proprietary documents and processes were occasionally reviewed during this inspection, the proprietary nature of these documents or processes was not included in this report. Members of your staff acknowledged the observations and findings during the exit meeting noted above. No dissenting comments were received from the licensee.

SUPPLEMENTAL INFORMATION

1. List of Personnel Contacted

Licensee Personnel:

S. Cowne, Director of Operations
J. Dahlin, Emergency Preparedness Manager
D. Lakin, Performance Assessment and Feedback Manager
J. Laughlin, Technical Services Director
P. Law, Engineering Systems Manager
C. Markert, Engineering Manager
P. McCasland, Licensing Specialist
W. Padgett, Licensing Manager
G. Sanford, Chief of Staff
D. Sexton, Chief Nuclear Officer/Vice President of Operations
C. Schwarz, Security Manager
A. Sorrell, Plant Support Director
O. Torres, QA Manager
R. Williams, Operations Shift Manager

2. Inspection Procedure (IP) Used

IP 88020 Safety Operations
IP 88051 Evaluation of Exercises and Drills
IP 88055 Fire Protections (Annual)
IP 88106 Quality Assurance: Program Development and Implementation (Pre-Licensing and Construction)
IP 88109 Quality Assurance: Inspection, Test Control & Control of Measuring Equipment (Pre-Licensing and Construction)
IP 88110 Quality Assurance: Problem Identification, Resolution And Corrective Action (PIRCA) (Construction, Pre-Operation and Operation)
IP 88111 10 CFR 21 Inspection – Facility Construction
IP 88113 Control of the Electronic Management of Data
IP 88115 Supplier/Vendor Inspection (Construction Phase)
IP 88116 Inspection of Safety Function Interfaces for the Mixed Oxide Fuel Fabrication Facility (Pre-Licensing and Construction)

3. List of Items Opened, Closed and Discussed

70-3103/2010-001-05	Closed	VIO: Two Examples of Failure to Adhere to Formwork Removal Procedure and Specifications (Section 7)
70-3103/2010-001-06	Closed	VIO: Failure to Maintain Accurate QA Records (Section 7)
70-3103/2010-014-02	Closed	VIO: Failure to implement design control measures (Section 7)

70-3103/2011-005-01

URI: Further review of the adequacy of the licensee's compensatory measures and implementation of the plant modification to address areas in the plant where CAAS audibility was not provided (Section 2)

4. **List of Acronyms Used**

ADAMS	Agency-Wide Document Access and Management System
ALARA	As Low As Reasonably Achievable
ASL	Approved Suppliers List
CFR	Code of Federal Regulations
CGD	Commercial Grade Dedication
CR	Condition Report
CRDB	Cylinder Receipt and Dispatch Building
DCN	Design Change Notice
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
FBL	Fire Brigade Leader
FBSO	Fire Brigade Safety Officer
HF	Hydrogen Fluoride
I&C	Instrumentation and Controls
IFI	Inspection Follow-up Item
IP	Inspection Procedure
IROFS	Items Relied on for Safety
ISAS	Integrated Safety Analysis Summary
LES	Louisiana Energy Services
M&TE	Measuring and Test Equipment
NEF	National Enrichment Facility
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
PO	Purchase Order
QA	Quality Assurance
QAPD	Quality Assurance Program Description
QC	Quality Control
QL	Quality Level
RASCAL	Radiological Assessment System for Consequence Analysis
RII	Region 2
SBM	Separation Building Module
SL	Severity Level
SNM	Special Nuclear Materials
SSC	Structure, System, and/or Component
UBC	Uranium Byproduct Cylinder
UF ₆	Uranium Hexafluoride
URI	Unresolved Item
VIO	Violation

5. **List of Documents Reviewed**

Procedures/Programs

CA-3-1000-01, Performance Improvement Program, Rev 18
 CA-3-1000-09, Assessment Program, Rev 4
 EG-3-2100-09, Identification, Disposition, and Resolution of Nonconforming Items, Rev 6
 EG-3-2100-11, Master Equipment List, Rev 1
 EG-3-3100-03, Quality Assurance Level Assignments, Rev 8
 EG-3-4100-05, Engineering Change Request, Rev 9
 EG-3-6000-04, Erection of Structural and Miscellaneous Steel, Rev 7
 EG-4-6000-03, Construction Work Plan process Desktop Guide, Rev 2
 Shift Manager/ Emergency Director, EP-3-0100-02 Rev. 4
 Activation of the Emergency Response Organization, EP-3-0100-01 Rev. 7
 Classification of Emergency Events, EP-3-0200-01, Rev. 3
 Notification of Off-Site Agencies, EP-3-0200-02 Rev. 11
 Assembly and Personnel Accountability, EP-3-0200-06, Rev. 5
 FP-3-1000-01, Fire Systems and Features Testing and Inspection
 FP-3-1000-02, Flammable and Combustible Material Control
 FP-3-1000-03, Fire Prevention During Welding, Cutting, and Other Hot Work
 FP-3-1000-04, Fire Systems or Features Impairment
 FP-3-1000-08, Fire Barrier Inspection
 FP-3-2000-01, Combustibles Control Inspection - UBC
 FP-3-2000-02, Combustibles Control Inspection - CTF/PMF
 FP-3-2000-04, IROFS 35 Weekly Fire Door Inspection and IROFS 35/36a Combustibles Control Inspection - SBM
 LES-S-S05131, Erection of Structural and Miscellaneous Steel, Rev 1
 LS-3-1001-01, Implementation of 10 CFR Part 21, Rev 3
 LS-3-1000-09, NRC Posting Requirements, Rev 6
 LS-3-S-S-03312, Placing Concrete and Reinforcing Steel, Rev 1
 Plant Fire Brigade, OP-3-1000-10, Rev. 5
 QA-3-1000-02, Calibration and Control of Measuring and Test Equipment used by URENCO USA QC, Rev 2
 QA-3-2000-01, Quality Assurance Audit, Rev 8
 QA-3-3000-18, Receipt Inspection, Rev 10

Surveillances

FP-3-1000-02 Weekly Combustibles Control Inspection - CAB
 FP-3-2000-01 Weekly Combustibles Control Inspection - CTF/PMF
 FP-3-2000-02 Weekly Combustibles Control UBC Pad Inspection
 FP-3-2000-04 Weekly IROFS 35 Fire Door Inspection
 MA-6-0694-19 Annual Gauge and Sensor Calibration
 MA-3-1000-01 Quarterly Damper Inspection in SBM
 MA-3-2000-01 Weekly Transient Combustibles Inspection IROFS 36i
 MA-3-2000-04 Weekly IROFS 36a
 MA-3-2670-01 Annual IROFS 35 Fire Damper Inspection
 MA-3-2826-01 Annual SBM IROFS 35 Fire Penetration Inspection

MA-3-2826-02 Annual Fire Door Inspections
 MA-6-0694-02 Quarterly SBM Fire System Inspection
 MA-6-0694-02 Quarterly CAB Fire System Inspection
 MA-6-0694-02 Quarterly FWPH Fire System Inspection
 MA-6-0694-03 Annual Control Valve Lube and Cycle
 MA-6-0694-11 Annual Electric Fire Water Pump Maintenance and Flow Test
 MA-6-0694-11 Annual Diesel Fire Water Pump Maintenance and Flow Test
 MA-6-0694-17 Annual CAB Main Drain Test
 MA-6-0694-26 Annual CAB Piping Inspections
 MA-6-0694-27 Fire Hydrant Annual Maintenance
 OP-3-0694-01 Quarterly Fire Water Tank Inspection

Boundary Documents Reviewed

NEF-BD-035
 NEF-BD-036a
 NEF-BD-036c
 NEF-BD-036d
 NEF-BD-036e
 NEF-BD-036f
 NEF-BD-036g
 NEF-BD-036i
 NEF-BD-039b

Condition Reports

2010-1445, NRC Violation: inability to retrieve a quality record associated with Work Plan Number 1100-CIVIL-828-00
 2010-1471, NRC Violation: Deficiencies in documentation for Work Plans 1001X-CIVIL-823-001, 1001X-CIVIL-823-002, and 1100-CIVIL-823-011
 2010-1476, NRC Violation: Corrective Actions for VIO 70-31303/2010-001-05 Work Plan Revisions
 2010-1478, NRC Violation: Corrective Actions for VIO 70-31303/2010-001-05 Issue 1, LES-S-S-03312 Specification revision
 2010-2379, NRC Violation: Corrective Actions for VIO 70-31303/2010-001-05 Work Plan Instruction
 2010-2673, Conduct an evaluation for common cause of NRC violations
 2010-3207, NRC Violation: Failure to prepare a modification and a 70.72 review
 2010-3434, Concerns with corrective actions for CR-2009-1789
 2010-3436, Commercial Grade Dedication QAPD Conflict
 2010-3826, CY2010 QA Program Assessment Finding 2: Failure of QA to escalate an adverse trend to the Chief Nuclear Officer
 2011-0330, M24 Turnbuckle Collars for 1001 Cascade 3 are out of ISO 965-2 Tolerance
 2011-0580, Procedural Compliance
 2011-1641, 10 CFR Part 21 Postings
 2011-2023, Verbiage error found in IROFS 11
 2011-2106, Fluke 744, Out of Tolerance Evaluation
 2011-2641, Missing information for level II certification
 2011-2661, Adverse trend for deficiencies in the program for qualification of QA auditors

2011-2710, NRC identified: Weld may be undersized in the lower Cascade Steel
 2011-2728, Hand held torque wrench calibration
 2011-2849, Torque Wrench Test Device Calibration Periodicity Conflict
 2011-2857, Un-Approved removal from work plans
 2011-2900, Upper steel turnbuckle assemblies out of tolerance at receipt
 2011-3057, Audit Checklist not adequately documented
 2011-3111, Failure 1001-471-1B Autoclave RTD TTR
 2011-3127, Torque Wrench NEF-048, Out of Tolerance Evaluation
 2011-3145, Wire size Discrepancy for WP 1001 ELEC-471-004
 2011-3171, Upper steel turnbuckle assemblies out of tolerance at receipt
 2011-3338, Effectiveness Review of LS-3-100-01, Implementation of 10CFR 21
 2011-3460, Out of Tolerance on TT-1 torque tester
 2011-3619, Upper steel turnbuckle fabricated to incorrect drawing revision
 2011-3850, Additional M24 Turnbuckle Collars for 1001 Cascade 3 are out of ISO 965-2 Tolerance
 2011-3908, NRC Identified: An auditor certification record failed to document evaluation results for OJT skills.
 2011-3927, NRC Identified: The form for documenting the screening of potential Part 21 concerns was not provided in the CR record
 2011-3935, Unsatisfactory receipt inspection of Nelson studs
 2011-3938, NRC Identified: The table in the M&TE procedure, which depicted calibration periodicity requirements, was not complete
 2011-3949, NRC Identified: Update In-Process Training Plan to address work plan desktop guide EG-4-6000-3
 2011-3952, NRC Identified: Audit reports 2010-A-10-039 and 2011-A-02-005 incorrectly listed trainees as qualified auditors
 2011-3956, NRC Identified: Assessment 2010-012, Document Control did not identify a Condition Report issued for an assessment finding
 2011-3966, NRC Identified: Internal Audit 2011-A-02-005, Design Engineering, was not distributed to engineering as required by QA-3-2000-01
 2011-3968, NRC Identified: Audit 2011-A-02-005 did not provide objective evidence to support determination of implementation effectiveness
 2011-3971, NRC Identified: The CY2010 QA Program assessment report did not record the CR numbers for assessment findings
 Condition Reports opened after Emergency Drill: CR 2011-3254, CR 2011-3255, CR 2011-3268, CR 2011-3269, CR 2011-3270, CR 2011-3282, CR 2011-3340
 CR- 2010-3042
 CR-2011-0607
 CR-2011-0675
 CR-2011-2746

Audits and Assessments

SA-2010-008, 2010 Annual Independent Assessment of the URENCO USA QA Program Effectiveness, dated 11/12/2010
 SA-2010-012, Self Assessment of Document Control, dated 12/23/2010
 SA-2010-006, Program Assessment of Hazardous Chemical Safety, dated 12/13/2010
 2011-A-02-005, Audit of Design Engineering, dated 3/29/2011
 2011-A-04-013, Audit of Training, URENCO USA, dated 5/5/2011
 2011-A-08-030, Audit of Nuclear Filter Technology, dated 8/31/2011

2011-A-10-022, Audit of Parsons, Pasadena, CA, dated 10/24/ 2011
 2010-A-10-039, Audit of URENCO Information Technology, dated 10/29/2010
 2011-A-10-042, Triennial Audit of URS-EPD, dated 11/7/2011

Calculations

CALC-C-00179, Seismic Qualification of Support Structures for IROFS 11, 12 and IROFS 43, Rev 0
 CALC-H-00002, Analysis of HF Corrosive Effects on Safety Related Components Specifications, Rev 0

Engineering Changes

DCN 2010, "Cascade 1 Bung Removal," Rev. 0
 ECR-2834B, Changes to ETC Specification for Lower Cascade Steel, dated 8/31/2010
 ECR-6679, Replace Existing Fixing Plate Material with Stainless Steel, dated 6/7/2011
 ECR-6898, Secondary torque wrench check (Bench Test), dated 8/24/2011

Specifications

ETC4073025, Cascade Pipework and Support Steelwork, Rev 2
 ETC4149089, Fabrication and Welding of Aluminum, Stainless Steel, Austenitic Alloys and Monel Piping/Components for UF6 and Vacuum Service, Rev 3
 ETC4048255, Specification for Materials and Manufacturing of Cascade Lower-, Upper-, and Valve Frame Steelwork, Rev 5

Purchase Orders

303626, dated 9/29/10
 303726, dated 11/8/10
 303718, dated 11/4/10
 303670, dated 10/13/10
 304062, dated 11/4/10
 303784, dated 12/2/10
 304103, dated 4/25/2011
 4500022060, dated 10/4/2011
 4500022919, dated 10/6/2011
 LES-SC4296, dated 5/24/2011

Vendor/Supplier Certifications

CB266-56545-222, Fox Valley Metrology NEF-035 Fluke Clamp Meter, dated 9/23/2011
 CA362-47201-245, Fox Valley Metrology NEF-046 Torque Wrench, dated 12/28/2010
 CB249-63933-189, Fox Valley Metrology NEF-048 Torque Wrench, dated 9/8/2011
 CA347-30457-244, Fox Valley Metrology NEF-076 Temperature Recorder, dated 12/13/2010
 5144623, Tektronix, PCM-6 Fluke Clamp Meter, dated 5/17/2011
 5140435, Tektronix, M789-3 Fluke Process Meter, dated 5/16/2011
 5156802, Tektronix, M744-1 Process Calibrator, dated 5/19/2011
 5241230, Tektronix, PM-31 Fluke Pressure Module, dated 6/20/2011

Work Packages

1001-CIVIL-823-054, Perform Cascade Field Inspections for CGDP-041-0007 Cascade Hexagon Bolt Torque Verification, Rev 0
 1001-CIVIL-823-056, Cascade 1.7 Ferromagnetic test of bolts and Torque of bolts (Upper Steel), Rev 0
 1001-CIVIL-823-098, Cascade 1.7 Walk Down – Check Bolt Torque and Ferromagnetic test (Pipe Clamp Bolts), Rev 0
 1001-CIVIL-853-005, Installation of the Flomels in Mini Hall 1B, Rev 0
 1001-ELEC-471-004, Site Acceptance Testing IROFS 11 and 12 Autoclave, Rev 0
 1001-MECH-614-016, Verify Torque Values For all CCW Clamp Connections in SBM 1001 Cascade 7, Rev 0
 1101-CIVIL-822-002, Placement of Structural Concrete ICC, dated 11/9/2011
 1600-CIVIL-822-004, Foundation of South 1600 Vestibule, dated 8/4/2010
 WO 3003881, Bung Removal on Cascade 1A Unit 9, dated 11/24/2010

Other Documents

10CFR70.72(c) Screen/Evaluation 2010-0670, dated 10/25/2010
 CGDP-041-0007, Commercial Grade Dedication Process, Cascade Hexagon Bolt Torque Verification, 9/20/2011
 Drawing LES-1001-E-EPQ-001-10-1, dated 10/19/11
 Lead Auditor Qualification Record for G. Donaldson
 Auditor Qualification Record for K. Garner
 Auditor Qualification Record for R. Glassner
 Exercise Plan FY2011 Full Scale Exercise
 Lead Auditor Qualification Record for C. W. Wood
 Lead Auditor Qualification Record for J. Zelfel
 LES Approved Suppliers List, dated 10/10/2011
 LES-11-00053-NRC, Part 21 Report (ADAMS Accession ML11298A191), dated 10/21/2011
 LES-11-00140-NRC, Part 21 Report (ADAMS Accession ML110890543), dated 3/29/2011
 NCR 2011-0330, dated 2/2/2011
 NCR 2011-0385, dated 2/2/2011
 NCR 2011-2710
 NCR 2011-3619, Rev 0
 NEF-BD-41, Design Features to Ensure Cascade System Pipe Leak Integrity, Rev. 1
 QSWI-75-04.2, IMIC Inc. Pre Installation Verification of Fasteners Assemblies, dated 2/26/2009
 Quality Inspector Training Records for G. Catalano
 Quality Inspector Training Records for D. Cummings
 Quality Inspector Training Records for J. Malcom
 Quality Inspector Training Records for J. Staus
 TQ-3-0100-09-F-3, "Attendance Record for Work Plan Training," dated August 23-September 1, 2010
 UUSA FHA Rev07
 UUSA Fire Preplans
 Work Plan Training Power Point Lecture Slides, dated 11/19/2010