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

July 30, 2013

Mr. Joseph G. Henry
President
Nuclear Fuel Services, Inc.
P. O. Box 337, MS 123
Erwin, TN 37650

SUBJECT: NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT NUMBER 70-143/2013-003 AND NOTICE OF VIOLATION

Dear Mr. Henry:

This refers to the inspections conducted from April 1, 2013 to June 30, 2013, at the Nuclear Fuel Services (NFS) facility in Erwin, TN. The purpose of these inspections was to determine whether activities authorized under the license were conducted safely and in accordance with Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of these inspections. The findings were discussed with you and members of your staff at an exit meeting held on July 10, 2013.

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

Based on the results of this inspection, the NRC has determined one Severity Level IV violation of NRC requirements occurred. This violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html).

The violation cited is in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. The violation is being cited in the Notice because the NRC determined you did not restore compliance with the National Fire Protection Agency requirements.

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

If you contest the violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) Charlie Stancil at the Nuclear Fuel Services facility.

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

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

Sincerely,

/RA/

Alan J. Blamey, Chief
Fuel Facility Inspection Branch 1
Division of Fuel Facility Inspection

Docket No. 70-143
License No. SNM-124

Enclosures:
1. Notice of Violation
2. NRC Inspection Report 70-143/2013-003
   w/Attachment: Supplemental Information

cc: (See page 3)

Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) Charlie Stancil at the Nuclear Fuel Services facility.

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cc: (See page 3)

X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE
ADAMS: X Yes ACCESSION NUMBER: ML13211A297 X SUNSI REVIEW COMPLETE ☐ FORM 665 ATTACHED

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI (ADC)	RII:DFFI	RII:DFFI
SIGNATURE	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/
NAME	CStancil	MToth	PStartz	MCrespo	JFisher	GGoff
DATE	7/29/2013	7/29/2013	7/29/2013	7/29/2013	7/29/2013	7/29/2013
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
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E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DFFI\REPORTS\DRAFT INSPECTION REPORT FOLDER\NFS\NFS IR 2013-003 FINAL REV.DOCX

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Letter to Mr. J. Henry from Alan J. Blamey dated July 30, 2013

SUBJECT: NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT NUMBER 70-143/2013-003 AND NOTICE OF VIOLATION

DISTRIBUTION:
PUBLIC
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A. Blamey, RII
R. Johnson, NMSS
K. Ramsey, NMSS
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NFS Website

NOTICE OF VIOLATION

Nuclear Fuel Services
Erwin, TN

Docket No. 70-143
License No. SNM-124

During a NRC inspection conducted from June 24-28, 2013, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> Safety Condition S-1 of Special Nuclear Material License SNM-124 requires that material be used in accordance with the statements, representations, and conditions in the application.
>
> Section 7.4.1, Facility Design Criteria, of the License Application dated August 1, 2011, states that Nuclear Fuel Services, Inc.(NFS) buildings are designed and built to the requirements of NFPA 801, as well as, any applicable state, and local building, electrical, and fire codes in effect at the time of their construction.
>
> Section 5.11 of NFPA 801, “Standard for Fire Protection for Facilities Handling Radioactive Materials,” 2008 edition, states that “Emergency Lighting shall be provided for means of egress in accordance with NFPA 101, “Life Safety Code”.”
>
> Section 7.9.3.1.1, Periodic Testing of Emergency Lighting Equipment, of the NFPA 101, 2009 version, states the “Functional testing shall be conducted annually for a minimum of 1.5 hours if the emergency lighting system is battery powered.
>
> Contrary to the above, prior to June 28, NFS failed to functional test the battery powered emergency lighting system annually for a minimum of 1.5 hours. Additionally, the licensee failed to identify an equivalency for the test in which it is demonstrated that the lights will work as intended.

This is a Severity Level IV violation (Section 6.2).

Pursuant to the provisions of 10 CFR 2.201, NFS is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region II, and a copy to the NRC Resident Inspectors at NFS, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation” and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

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

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

If Classified Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR Part 95.

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

Dated this 30th day of July 2013

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U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No.:	70-143
License No.:	SNM-124
Report No.:	70-143/2013-003
Licensee:	Nuclear Fuel Services, Inc.
Facility:	Erwin Facility
Location:	Erwin, TN 37650
Dates:	April 1, 2013 to June 30, 2013
Inspectors:	C. Stancil, Senior Resident Inspector M. Toth, Resident Inspector M. Crespo, Senior Fuel Facility Inspector (Sections B.3, C.3, C.4) G. Goff, Fuel Facility Inspector (Sections C.1, C.2) J. Fisher, Fuel Facility Inspector (Sections B.2, C.3) N. Pitoniak, Fuel Facility Inspector (Sections A.3, A.4) C. Rivera, Fuel Facility Inspector (Sections A.3, A.4) P. Startz, Fuel Facility Inspector (Sections A.3, A.4)
Approved by:	A. Blamey, Chief Fuel Facility Inspection Branch 1 Division of Fuel Facility Inspection

EXECUTIVE SUMMARY

Nuclear Fuel Services, Inc.
NRC Integrated Inspection Report 70-143/2013-003
April 1 – June 30, 2013

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

Safety Operations

- Plant operations were performed safely and in accordance with approved plant procedures. (Paragraph A.1)

- Nuclear criticality safety controls were followed throughout the facility. (Paragraph A.2)

- One Severity Level IV violation was issued in the area of Fire Safety regarding the failure to perform 1.5 hour emergency light testing and not restoring compliance with NFPA code requirements. (Paragraphs A.3 and A.4)

Radiological Controls

- The licensee adequately implemented the radiation protection program consistent with the license and regulatory requirements. (Paragraphs B.1 and B.2)

- The radioactive waste management program was adequately implemented in accordance with the license and regulatory requirements. (Paragraph B.3)

- The NRC reviewed the results of the NRC independent analysis of surface water samples and determined that the results were within regulatory requirements. (Paragraph B.4)

Facility Support

- The Management Organization and Controls program was implemented in accordance with the license and regulatory requirements. (Paragraph C.1)

- The Operator Training program was implemented in accordance with the license and regulatory requirements. (Paragraph C.2)

- The Emergency Preparedness program was implemented in accordance with the license and regulatory requirements. The Emergency Plan and its associated implementing procedures were carried out in accordance with NRC regulatory requirements during a NRC-graded drill performed on April 30. (Paragraph C.3)

- The licensee adequately implemented procedures in accordance with the license and regulatory requirements for the radioactive transportation program. (Paragraph C.4)
-

- Adverse conditions were adequately identified, evaluated, and entered into the corrective action program. (Paragraph C.5)

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

REPORT DETAILS

Summary of Plant Status

The facility began the inspection period with the following process areas operating: 1) Naval fuel manufacturing facility (FMF); 2) Blended Low Enriched Uranium (BLEU) Preparation Facility (BPF) which included the Uranium (U)-Oxide, U-Metal, Solvent Extraction (SX), and the down-blending (DB) lines. Building 301 Commercial Development (CD) line was operated for a period of time to support the Uranium (U)-Oxide Turbula station.

A. Safety Operations

1. Plant Operations Routine (IP 88135)

a. Inspection Scope and Observations

The inspectors performed routine tours of plant operating areas housing special nuclear material (SNM) and determined that equipment and systems were operated safely and in compliance with the license. Daily operational meetings and turnover meetings were observed throughout the period to gain insights into production status and operational issues. The inspectors reviewed selected licensee-identified issues and corrective actions for previously identified issues. These reviews focused on plant operations, safety-related equipment (valves, sensors, instrumentation, in-line monitors, and scales) and items relied on for safety (IROFS).

The routine tours included walk-downs of the BPF, CD line, FMF, storage areas, and the waste water treatment facility (WWTF). The inspectors verified that there was adequate staffing and that operators were attentive to their duties and knowledgeable of the status of alarms and annunciators. The inspectors observed activities during normal and upset conditions for compliance with procedures and station limits. The inspectors noted that safety controls were in place and functional to ensure proper control of SNM. The inspectors verified the adequacy of communications between supervisors and operators within the operating areas. The inspectors walked down portions of safety-significant operating systems and verified that IROFS were identified and operable. The inspectors reviewed operator log books, maintenance records, and Letters of Authorization (LOA; temporary procedures) to obtain information concerning operating trends and activities. The inspectors verified that the licensee actively pursued corrective actions for conditions requiring temporary modifications and that required compensatory measures were prescribed and implemented as required.

The inspectors performed periodic tours of the outlying facility areas during the inspection period and determined that equipment and systems were operated safely and in compliance with the license. The focus of these tours centered on the evaluation of potential wind-borne missile hazards, combustible material storage and fire loading, hazardous chemical storage, storage of compressed gas containers, potential degradation of plant security features, and potential fire hazards. During these tours, the inspectors also verified that required Notices to Employees were appropriately and conspicuously posted in accordance with 10 CFR 19.11.

The inspectors attended various plan-of-the-day meetings throughout the inspection period in order to determine the overall status of the plant. The inspectors evaluated the adequacy of the licensee's response to significant plant issues as well as their approach to solving various plant problems.

Safety System Walk-down

The inspectors performed a walk-down of a safety-significant system involved with the processing of SNM. As part of the walk-down, inspectors verified the as-built configuration matched approved plant drawings. The inspectors interviewed operators to confirm that plant personnel were familiar with the assumptions and controls associated with these IROFS systems and instrumentation for maintaining plant safety. The inspectors also verified that IROFS assumptions and controls were properly implemented in the field. The inspectors reviewed the related Integrated Safety Analysis (ISA) to verify the systems' ability to perform its functions was not affected by outstanding design issues, temporary modifications, operator workarounds, adverse conditions or other system-related issues. The inspectors also verified that there were no conditions that degraded plant performance, the operability of IROFS, safety-related devices, or other support systems essential to safety system performance. Systems examined included:

- Building 333, Column Dissolvers
- Building 301, Receipt Calciner
- Building 333, Turbula

To determine the correct system alignment, the inspectors reviewed procedures, drawings, related ISAs, and 10 CFR 70.61. During the walk-downs, the inspectors verified the following:

- Criticality safety hazards and controls were maintained;
- Chemical safety hazards and controls were maintained;
- The configuration of the process vessels was maintained in accordance with Nuclear Criticality Safety Evaluations (NCSEs);
- Valves were correctly positioned and did not exhibit leakage that would impact the valve's function;
- Electrical power was available as required;
- Major system components were correctly aligned, labeled, lubricated, cooled, and ventilated;
- Hangers and supports were correctly installed and functional;
- Tagging clearances were appropriate with breakers and valves correctly positioned and locked as required by the lockout/tagout program;
- Cabinets, cable trays, and conduits were correctly installed and functional;
- Visible cabling was in good material condition; and
- Ancillary equipment or debris did not interfere with system performance.

b. Conclusion

No findings of significance were identified.

2. Criticality Safety (IP 88135)

a. Inspection Scope and Observations

During daily production area tours, the inspectors verified various criticality controls to be in place, that personnel followed criticality station limit cards, and that containers were adequately controlled to minimize potential criticality hazards. The inspectors sampled a number of criticality-related IROFS for operability and for adequate identification in the field as well as on drawings. The inspectors noted that operators were knowledgeable of the requirements associated with IROFS.

The inspectors performed several tours inside various process areas when restrictions on Special Nuclear Material (SNM) movements were in effect.

b. Conclusion

No findings of significance were identified.

3. Fire Protection Quarterly (IP 88135)

a. Inspection Scope and Observations

During routine plant tours, the inspectors verified that transient combustibles were being adequately controlled and minimized in all process areas. A sample of fire barriers and doors were examined and found to be properly maintained and functional in accordance with site procedures.

During the inspection period, the inspectors conducted fire safety inspections of portions of Building 304 and Building 306E. The specific focus areas were:

- 304 breezeway
- 304 non-nuclear storage warehouse
- 306E storage, waste, maintenance and welding cages (306E)

The wet pipe sprinkler systems in these areas are items relied on for safety (IROFS).

The inspectors determined the sprinkler systems in these areas were operational by verifying that applicable post indicator valves (PIVs) along the site fire loop and building riser valves were open. The inspectors also verified water pressure at each riser was normal to support system operation for these areas. The inspectors noted the material condition of the sprinkler heads were adequate in that they were free of paint, corrosion, and other contaminants that could render them non-functional.

The inspectors performed a Piping and Instrumentation Drawing (P&ID) verification of IROFS sprinkler system in Building 306E and determined that the current system drawing matched the plant installation. The inspectors also reviewed hydraulic calculation sheets for building 306E and determined they were adequate for the typical combustible material loading in the area.

The inspectors reviewed a sample of surveillance and testing records pertaining to fire dampers, wet pipe sprinkler systems, and fire doors for the 304 breezeway, the 304 non-nuclear warehouse and Building 306E and determined they were completed in accordance with site procedures. The inspectors also reviewed monthly combustible control inspections for these areas and identified no discrepancies.

b. Conclusion

No findings of significance were identified.

4. Fire Protection Triennial and Annual (IP 88054 and 88055)

a. Inspection Scope and Observations

The inspectors performed an annual and triennial fire protection review of the blended low-enriched uranium preparation facility solvent extraction and high enriched uranium oxide dissolution areas and the 300 recovery area process to evaluate the existing fire protection capability from a programmatic design-based and risk-informed perspective.

The inspectors reviewed licensee procedures and toured plant areas containing safety controls and items relied on for safety (IROFS) to assess the material condition of fire protection equipment, systems, and features. The inspectors verified that flammable materials were stored in marked cabinets as specified in approved procedures and that housekeeping and the control of combustible materials were adequate and consistent with the approved procedures. The inspectors verified that the cutting, welding, and hot work program was implemented in accordance with approved procedures.

The inspectors reviewed the Fire Hazard Analysis (FHA), Pre-Fire Plan, and interviewed licensee personnel to verify that the observed fire protection systems were maintained in an adequate state of readiness and had been properly tested to verify their ability to perform their safety function. The inspectors determined that fire dampers, doors, and penetration seals were being maintained in a condition that would ensure they were available and reliable to perform their safety function. The inspectors walked down selected sections of the facility that utilized passive fire protection features. The inspectors verified that smoke and heat detectors were clear of any interference that could impact the device functionality. The inspectors also verified that detectors were installed, inspected, tested in accordance with NFPA 72. Also, the inspectors determined that fire hoses and portable extinguishers were provided at their designated locations and access was unobstructed.

The inspectors reviewed the design, installation, testing of fire suppression systems associated with the hazards in the areas selected and compared it against the code of record. Systems such as the pre-action water based sprinkler system in Warehouse 310, an automatic dry chemical fire suppression system in the hazardous waste storage unit in Warehouse 310, CO_2 system, fire detection systems, and gas detection systems were reviewed. The inspectors reviewed the material condition, operational lineup, and design of fire suppression systems equipment relative to the requirements of NFPA 13 “Standard for the Installation of Sprinkler Systems.” The inspectors verified that sprinklers were not obstructed, that spacing requirements were met, and that the water supply to each of the systems was readily available. The inspectors also reviewed the inspection, testing, and maintenance requirements of fire suppression systems to verify

that the systems were reliable and available and met the requirements specified in NFPA 25 “Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.”

The inspectors also reviewed potential consequences of cable failures and potential impacts on fire suppression activities.

The inspectors reviewed surveillance and test records for fire protection equipment and determined activities were conducted in accordance with site procedures and license requirements. The inspectors reviewed the licensee fire protection system out-of-service records and determined that adequate compensatory measures had been put in place for out-of-service, degraded or inoperable fire protection equipment, systems or features.

The inspectors reviewed the licensee corrective action program entries for the past 12 months and determined that the licensee is identifying safety control or IROFS fire protection operability problems at an appropriate threshold and entering them into the corrective action program.

The inspectors reviewed Emergency Response Organization qualifications and drills for the past year and verified the Emergency Response Team members received training and participated in drills at least annually. The inspectors verified that the offsite fire support organizations were offered an opportunity for site orientation and training.

The inspectors observed an emergent on site fire response activity. The inspectors concluded that actions were conducted in accordance with approved plant procedures.

Failure to comply with Emergency Lighting System Test in accordance with NFPA 101

Introduction: The inspectors identified a Severity Level IV violation for the licensee’s failure to comply with the emergency light testing requirements of NFPA 101, “Life Safety Code.”

Description: On June 12, 2013, the licensee discovered that the 1.5 hours functional test of the emergency lights required by NFPA 101, Life Safety Code, 2009 edition was not being performed. The licensee’s Authority Having Jurisdiction (AHJ) determined that this test was not needed and on June 12, 2013 authorized a deviation from the code. The inspectors reviewed the AHJ letter that allowed the deviation from the code and concluded that requisite testing had not been performed and that the licensee did not have the authority to make a code deviation decision. NRC available guidance in section 7.4.3.2.2 of NUREG-1520, Rev 1, states that a licensee can apply equivalencies and document them for inspection, but the licensee cannot approve deviations or exceptions from the code unless they provide the basis for exceptions in the license application.

The licensee’s justification for the code deviation was, in part, that replicating the “lights out” scenario was a potential safety hazard due to numerous electrical breakers that would need to be switched off to cause emergency lights to function, some of which serve more than one building or are tied to components of vital operating equipment. Also, the licensee stated that the uninterrupted power supply system would also have to be de-energized to obtain the “lights out” scenario. The licensee performed an analysis to estimate the time required by personnel to exit the building under normal egress

conditions. The licensee determined that a time period of approximately 10 minutes would be required. The licensee elected to not perform the required test after making this determination and credited the NFPA monthly 30-second emergency lighting test to comply with the intent of the NFPA 101, 1.5 hours test requirement. The licensee subsequently entered the issue into their corrective action program (reference PIRC #40492) for evaluation.

The inspectors concluded that conducting the monthly 30-second test required by NFPA 101 was not equivalent to the annual 1.5 hours functional test to assure reliability and endurance of the batteries in case of an emergency.

Analysis: The failure to comply with Section 7.9.3.1.1, "Periodic Testing of Emergency Lighting Equipment," of the NFPA 101, 2009 version, by not performing the 1.5 hours or equivalent emergency lighting system test constitutes a violation of NRC requirements.

This violation is more than minor because, if left uncorrected, the lack of adequate testing may not allow the detection and correction of degraded lights and potentially impact safe building evacuation. Although more than minor, this violation is considered to be of low safety significance (Severity Level IV) due to additional fire protection measures in place in case of an emergency and redundancy in emergency lights.

Enforcement: Safety Condition S-1 of Special Nuclear Material License SNM-124 requires that material be used in accordance with the statements, representations, and conditions in the application.

Section 7.4.1, Facility Design Criteria, of the License Application dated August 1, 2011, states that the licensee's buildings are designed and built to the requirements of NFPA 801, as well as, any applicable state, and local building, electrical, and fire codes in effect at the time of their construction.

Section 5.11 of NFPA 801, Standard for Fire Protection for Facilities Handling Radioactive Materials, 2008 edition, states that "Emergency Lighting shall be provided for means of egress in accordance with NFPA 101, Life Safety Code".

Section 7.9.3.1.1, Periodic Testing of Emergency Lighting Equipment, of the NFPA 101, 2009 version, states the "Functional testing shall be conducted annually for a minimum of 1.5 hours if the emergency lighting system is battery powered.

Contrary to the above, the licensee did not perform the 1.5 hours annual functional test of the emergency lighting system required by NFPA 101. While the licensee originally identified they were not performing the test, the licensee failed to restore compliance with the code.

This issue does not meet the enforcement policy criteria for a Non Cited Violation (NCV) because although the licensee previously identified the problem as documented in corrective action C11556 and PIRC 40492, they failed to take adequate action that would have prevented the violation. The enforcement policy also states, in part, that a Severity Level IV violation is a noncompliance in which the licensee fails to meet or implement any emergency planning standard or requirement not directly related to assessment or notification (e.g., emergency equipment maintenance). In accordance with the NRC Enforcement Policy, violations that are less serious, but are of more than

minor concern, and that resulted in no or relatively inappreciable potential safety or security consequences are characterized as Severity Level IV violations. The failure to comply with NFPA 101 is a Severity Level IV violation (VIO) of NRC requirements and will be tracked as VIO 70-143/2013-003-01, "Failure to comply with NFPA 101 required 1.5 hours emergency lighting system test in accordance with licensee commitments in the License Application."

b. Conclusion

One violation of NRC requirements was identified related to the failure of the licensee to restore compliance with the Emergency Lighting System Test in accordance with NFPA 101.

B. Radiological Controls

1. Radiation Protection Quarterly (IP 88135)

a. Inspection Scope and Observations

During tours of the production areas, inspectors observed radiation protection controls and practices implemented during various plant activities including the proper use of personnel monitoring equipment, required protective clothing, and frisking methods for detecting radioactive contamination on individuals exiting contamination controlled areas.

The inspectors noted that plant workers properly wore dosimetry and used protective clothing in accordance with applicable Radiation Work Permits (RWPs). The inspectors also noted that radiation area postings complied with plant procedures and included radiation maps with up-to-date radiation levels. The inspectors monitored the operation of radiation protection instruments and reviewed the calibration due dates of those instruments. The inspectors reviewed RWPs associated with the various safety work permits (SWPs).

b. Conclusion

No findings of significance were identified.

2. Radiation Protection (IP 88030)

a. Inspection Scope and Observations

The inspectors reviewed multiple self-assessments of aspects of the radiation protection program to ensure that the program performance was being reviewed, at least annually, to comply with 10 CFR 20.1101. The inspectors reviewed the organization chart to determine the radiation protection function's responsibilities were separate and independent from the operation function as required by the license application. The inspectors reviewed the resumes and/or interviewed new staff to ensure that the management and supervisory positions met the position requirements of the license application.

The inspectors observed an electronics technician perform a calibration of a survey meter. The inspector verified that the alarm levels were appropriate for use in the plutonium building and verified that the calibration was conducted in accordance with licensee-approved procedures. The inspectors observed the daily source check of the personnel contamination monitor (PCM) and a hand and foot monitor and determined both were completed in accordance with approved procedures.

The inspectors reviewed the Total Effective Dose Equivalent (TEDE) results and determined that they were less than the regulatory limit of 5 rem/yr. The maximum TEDE result for 2012 was 0.265 rem. The inspectors reviewed the database containing dose results and determined that the Lens Dose Equivalent and Shallow Dose Equivalent results were less than the regulatory limits of 15 rem and 50 rem per year, respectively. The inspectors reviewed individual dose calculations associated with employees who received intakes from events or triggered an action level. The inspectors determined that these calculations and results were in compliance with the requirements. The inspectors reviewed the dose results of declared pregnant workers and verified that the doses were low and in compliance with requirements.

The inspectors reviewed the respiratory protection program procedures and associated training and verified that the 10 CFR 20.1703 requirements were met. The inspectors discussed Assigned Protection Factors and fit results with the staff responsible for implementing the program and verified that the program was in compliance with requirements. The inspectors walked down the new respirator wash station and discussed changes in the process.

The inspectors interviewed a laboratory technician on the preparation, equipment, and laboratory analyses of the urinalysis program. The inspectors reviewed the quality control techniques used in the urinalysis process and verified compliance with licensee procedures. The inspectors reviewed the program's collection frequency for employees and determined it met the requirements of the license application. The inspectors reviewed two months of urinalysis results from the laboratory and determined that they were below the action level. The inspectors reviewed the urinalysis results which were above the action level in 2012 and verified that the associated dose assessments were appropriate.

The inspectors reviewed the fourth quarter 2012 As Low as Reasonably Achievable (ALARA) Report which contained the end of year summary for the ALARA program. The inspectors reviewed ALARA Committee meeting minutes from 2012. The inspectors determined that the ALARA program was in compliance with license application requirements.

b. Conclusion

No findings of significance were identified.

3. Radioactive Waste Management (IP 88035)

a. Inspection Scope and Observations

The inspectors reviewed the licensee's procedures and quality assurance program to confirm adequate controls were implemented to meet the requirements of 10 CFR Part

20 and 10 CFR Part 61 applicable to low-level radioactive waste form, classification, stabilization, and shipment manifests.

The inspectors reviewed procedures to confirm the procedures were clearly written and adequately delineated responsibilities related to radioactive waste management. The inspectors observed operators performing radioactive waste activities to determine if operators were familiar with their responsibilities and performed their tasks in accordance with facility procedures.

The inspectors reviewed the radioactive waste management quality assurance program to determine if the licensee was performing the required audits and that these audits were entered into the licensee's corrective action program for resolution.

The inspectors reviewed the licensee's program for classifying low-level radioactive waste. The inspectors reviewed the procedures for classifying waste as well as records relating to waste. The inspectors reviewed the licensee's program for ensuring that waste was properly packaged to ensure the waste form met the requirements of 10 CFR 61.56.

The inspectors reviewed the licensee's procedures for labeling waste shipments and tracking radioactive waste. The procedures were adequate to ensure that radioactive waste was properly labeled and specified actions to be taken should the shipments not reach the intended destination in the time specified. Additionally, the inspectors reviewed the procedures for placement, inspection, and repackaging of radioactive waste.

The inspectors performed walk-downs of selected radioactive material storage areas. The storage areas had adequate postings to ensure that the proper material was being stored in the area and the material was safely stored in accordance with the nuclear criticality safety requirements. The containers were properly labeled to reflect their contents and were in good physical condition.

b. Conclusion

No findings of significance were identified.

4. Environmental Protection (IP 88135)

a. Inspection Scope and Observations

The NRC inspectors reviewed the independent sampling results, collected by Oak Ridge Associated University (ORAU) on November 15, 2012 and March 20, 2013, and compared the data to the licensee's sampling results for samples collected on the same day. The NRC and licensee conducted split samples for surface water at four locations. The sampling locations correspond to locations on the Nolichucky River and Martin's Creek that were upstream and downstream of the NFS plant.

The NRC inspectors verified that the results for NRC independent sampling and the licensee sampling were less than the investigation levels stated in approved procedures. The analytical results for the surface water samples are shown in Figures 1 and 2. The measurement uncertainty and the minimum detectable concentration (MDC) values are also reported for each analysis.

Figure 1: The NRC and licensee sampling results for gross alpha and gross beta analysis in local surface water taken on November 15, 2012.

		NRC (ORAU)			NFS		
Sampling Location	Analysis	Result pCi/L	Uncertainty pCi/L	MDC pCi/L	Results pCi/L	Uncertainty pCi/L	MDC pCi/L
Nolichucky River Upstream	Gross Alpha	0.05	0.10	0.38	1.61	0.63	1.67
	Gross Beta	0.79	0.23	0.75	1.77	0.64	1.92
Nolichucky River Downstream	Gross Alpha	0.05	0.11	0.39	0.65	0.45	1.49
	Gross Beta	1.14	0.24	0.76	0.41	0.43	1.53
Martin's Creek Upstream	Gross Alpha	0.21	0.11	0.36	-0.12	0.32	1.62
	Gross Beta	1.34	0.24	0.75	2.33	0.71	2.10
Martin's Creek Downstream	Gross Alpha	0.96	0.18	0.43	1.45	0.63	1.74
	Gross Beta	1.87	0.26	0.76	2.36	0.64	1.77

Figure 2: The NRC and licensee sampling results for gross alpha and gross beta analysis in local surface water taken on March 20, 2013.

		NRC (ORAU)			NFS		
Sampling Location	Analysis	Result pCi/L	Uncertainty pCi/L	MDC pCi/L	Results pCi/L	Uncertainty pCi/L	MDC pCi/L
Nolichucky River Upstream	Gross Alpha	0.19	0.19	0.29	-0.784	0.352	1.98
	Gross Beta	1.66	0.48	0.71	0.352	0.71	2.50
Nolichucky River Downstream	Gross Alpha	0.19	0.19	0.31	0.487	0.44	1.50
	Gross Beta	1.58	0.48	0.72	0.962	0.86	2.92
Martin's Creek Upstream	Gross Alpha	0.11	0.17	0.29	-0.101	0.37	1.67
	Gross Beta	1.21	0.46	0.71	0.488	0.59	2.08
Martin's Creek Downstream	Gross Alpha	1.61	0.47	0.41	0.806	0.58	1.94
	Gross Beta	9.23	0.73	0.74	-0.567	0.63	2.44

b. Conclusion

No findings of significance were identified.

C. Facility Support

1. Management Organization and Controls (IP 88005)

a. Inspection Scope and Observations

The inspectors interviewed four managers to verify that the management team understood the plant policy for safety and management responsibilities as defined by the license. The inspectors reviewed changes in personnel that occurred within the past year and verified that the personnel selected met the qualifications as required by the license application.

The inspectors verified the licensee's control of procedures through reviews of procedures and discussions with licensee staff. The inspectors reviewed four procedures revised within the past year to ensure that these documents were reviewed and approved in accordance with the licensee's document control program.

The inspectors observed shift turnover meetings and noted plant status, operational, and safety-related topics were addressed between the on-coming and off-going shift personnel.

The inspectors reviewed the licensee's problem identification and resolution program to determine if the program was being conducted in accordance with approved procedures and the license application. The inspectors observed two corrective action screening meetings in which the safety significance and classification for each item were addressed. The inspectors also observed a corrective action review board (CARB) meeting in which specific issues were evaluated to determine the appropriate type of investigation in order to ensure the identified issues would be adequately resolved. The inspectors reviewed recent event and incident investigations conducted by the licensee and determined that the licensee is promptly entering findings and concerns into the corrective action program.

The inspectors reviewed the internal and external audits of the following programs: Management Measures for Maintenance of Items Relied on for Safety and Management Measures for Procedures, Training, and Qualification. The inspectors determined that the audits were conducted at the frequency required by the license.

The inspectors verified that the licensee's quality assurance program was being implemented in accordance with the license application.

b. Conclusion

No findings of significance were identified.

2. Operator Training (IP 88010)

a. Inspection Scope and Observations

The inspectors reviewed the Operator Training program and evaluated the program against the license application. The inspectors interviewed the licensee training staff on personnel changes within the training organization during the past year. In addition, inspectors reviewed applicable lesson plans and procedure revisions and determined that the changes made were in accordance with the license application. The inspectors reviewed the site training procedure and determined that the operator training program was in accordance with this procedure (as required by the license application).

The inspectors discussed and observed training with licensee staff in varying positions. The inspectors observed classroom training and on-the-job (OJT) training for the BLEU Preparation Facility. The inspectors interviewed the OJT participant on the content of the training material and determined that the training was adequate to prepare individuals to safely perform the requirements of the job. The inspectors interviewed the training instructor on the integrity of written exams, the adequacy of lesson plan content, the duration of specific training, the frequency of requalification and refresher training, and the mechanism for trainees to provide feedback. Based on this interview and review of documentation, the inspectors determined that the training was in accordance with the license application.

The inspectors reviewed five lesson plans and five examinations for various processing

areas and verified that key points from the lesson plans were incorporated into the written examinations, that trainee understanding and command of learning objectives were adequately evaluated, and that selected examinations adequately tested the skill levels of the staff.

b. Conclusion

No findings of significance were identified.

3. Evaluation of Exercises and Drills (IP 88051)

a. Inspection Scope and Observations

The inspectors observed and evaluated the licensee's graded biennial exercise conducted on April 30. The scenario involved a natural gas explosion near the Waste Water Treatment Facility resulting in criticality alarm activation, the loss of containment of several waste tanks, and a fire in a nearby building. The scenario also involved several injures of personnel with various levels of contamination.

The inspectors reviewed the emergency drill scenario and discussed the exercise objectives with licensee personnel before the exercise. The inspectors walked down the plant to assess the effectiveness of the visual aids used in the drill and verified that the licensee had not pre-staged equipment in anticipation of the exercise.

At the initiation of the emergency drill, the inspectors verified that the licensee assessed the accident scenario, analyzed the plant condition, and classified the event. The event was classified as an Alert and Site Area Emergency in accordance with the Emergency Plan (Plan) at different points in the scenario. The inspectors observed the activation of the emergency organization and noted that all required positions were fully staffed in accordance with the Plan. The inspectors verified that the protective action recommendations implemented by the emergency organization were appropriate for the accident scenario and in accordance with the Plan.

The inspectors verified that the initial offsite notifications were within the time period specified in the Plan and were complete in content. A sample of occupational workers participated in the evacuation protective action and personnel accountability in accordance with approved procedures. The inspectors reviewed a sample of press releases prepared and issued by the emergency organization's public affairs staff. The inspectors determined that the press releases were approved by the Emergency Director and were in accordance with the Plan.

The inspectors determined that the Emergency Director maintained adequate command and control of the emergency organization. The inspectors reviewed calculations and assumptions used in the offsite dose assessment conducted by the dose assessor as well as the forms used to communicate the results and assumptions to the Emergency Director. The inspectors verified that the Emergency Director utilized the off-site dose assessment results during the assessment and classification of the accident scenario.

The inspectors observed members of the licensee's emergency response team assemble at the designated assembly area and the arrival of the off-site emergency responders including the local fire department and EMTs. The inspectors observed the

emergency response team's search and rescue activities for casualties and assessment of the affected area. The Incident Commander maintained adequate command and control of the emergency response team and coordinated action with the off-site emergency responders. The inspectors verified that the emergency response team activities were appropriate for the exercise scenario and were adequate in meeting the drill objectives.

The inspectors observed the staff critiques of the emergency exercise. The inspectors determined that the critiques were effective at identifying areas of improvement and supported open communication. The inspectors verified that the licensee documented the items discussed in the critiques in their corrective action program (P39530).

b. Conclusion

No findings of significance were identified.

4. Transportation of Radioactive Material (IP 86740)

a. Inspection Scope and Observations

The inspectors evaluated whether the licensee had established and was maintaining an effective program to ensure radiological and nuclear safety during the receipt, packaging, delivery, and private carriage of licensed radioactive materials. The inspectors also evaluated whether transportation activities were in compliance with the applicable transport regulations.

The inspectors reviewed a number of shipping records involving the shipment and receipt of special nuclear material products and waste disposal. The licensee ensured that the appropriate documentation accompanied the packages being shipped. The licensee recorded the required information on the packaging and shipping orders including the transportation index, package activity, labeling, and placards.

The inspectors reviewed audits of the transportation program and determined the licensee was performing periodic audits of the program as required. The results of the audits were appropriately entered into the corrective action program.

The inspectors observed the loading and staging of packages for radioactive material waste shipments (three-yard sacks and 55 gallon drums) from the 310 Warehouse and reviewed the procedures, shipping records, and surveys of the shipments. The inspectors also interviewed several licensee transportation personnel regarding their responsibility with regard to the classification and proper handling of radioactive material shipments. The inspectors noted that personnel were knowledgeable of the shipping requirements under their responsibility.

The inspectors reviewed the licensee's actions related to two 10 CFR 71.95 event reports. The first event report dated May 22, 2013 (ML12151A274) involved the licensee's failure to properly install the test port plug prior to a shipment of radioactive material, which constituted a violation of the applicable certification of compliance (CoC) procedures. There were no releases of radioactive material and the licensee took adequate corrective actions to prevent recurrence of the issue. The inspectors reviewed the licensee's implemented corrective actions and identified no issues. The failure to

properly install the test port plug prior to shipment constituted a violation of minor significance that is not subject to enforcement action in accordance with the Enforcement Policy.

The second event report dated January 31, 2013 involved a shipment of radioactive material in ES-3100 (CoC-9315) packages from the Babcock & Wilcox Y-12 Oak Ridge, TN facility. Upon receipt, the licensee discovered that one of the packages from the shipment did not have all of the bolts torqued to the correct specification. The issue did not result in any release of radioactive material and the licensee properly informed the shipper.

b. Conclusion

No findings of significance were identified.

5. Corrective Action Program Review (CAP) (IP 88135)

a. Inspection Scope and Observations

The inspectors reviewed the licensee's CAP to ensure that items adverse to safety were being identified and tracked to closure. The inspectors also performed frequent screenings of items entered into the CAP to aid in the identification of repetitive equipment failures or specific human performance issues for follow-up. The inspectors reviewed CAP entries that occurred during the inspection period to assess and evaluate the safety significance of issues.

b. Conclusion

No findings of significance were identified.

D. Other Areas

1. Follow-up on Previously Identified Issues

a. None

E. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff at various meetings throughout the inspection period and on July 10, 2013, to J. Henry and his staff. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.

SUPPLEMENTARY INFORMATION

1. KEY POINTS OF CONTACT

Name	Title
S. Barron	Emergency Preparedness Manager
C. Brown	MC&A Department Manager
T. Coates	E&I Engineering Section Manager
B. Cooper	Industrial Safety Manager
R. Dailey	Engineering Director
M. Dotson	Work Management Manager
R. Droke	Senior Regulatory Advisor
M. Elliott	Quality, Safety, & Safeguards Director
J. Henry	President
R. Holly	Environmental Safety Unit Manager
N. Kenner	SCIP Manager
M. McKinnon	Operations Section Manager
M. Moore	Environmental Protection & Industrial Safety Section Manager
C.S. Morie	Decommissioning Environmental Unit Manager
C. Reed	Operations Director
V. Peterson	Corrective Action Program Manager
R. Shackelford	Nuclear Safety & Licensing Section Manager
M. Tester	Radiation Program Manager
J. Wheeler	Licensing & ISA Manager

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

VIO 70-143/2013-003-01	Failure to comply with NFPA 101 required 1.5 hours emergency lighting system test in accordance with licensee commitments in the License Application

Opened & Closed

None

Closed

None

Discussed

None

3. INSPECTION PROCEDURES USED

86740	Transportation of Radioactive Material
88005	Management Organization and Control
88010	Operator Training
88030	Radiation Protection
88035	Radioactive Waste Management

88051 Evaluation of Exercises and Drills
88054 Fire Protection (Triennial)
88055 Fire Protection (Annual)
88135 Resident Inspection Program For Category I Fuel Cycle Facilities

4. DOCUMENTS REVIEWED

Procedures:

NFS-HS-A-05, Rev.18, "Calibrating Radiation Monitoring Instruments"
SOP 358, Rev. 14, "General Maintenance"
NFS-WM-001, Rev. 3, "Control and Execution of Work"
NFS-CAP-008, Full and Small Team Investigations, Rev. 0, dated March 9, 2012
NFS-DOC-001, Document Standards and Control, Rev. 0, dated December 13, 2012
NFS-GH-900, Safety and Safeguards Review Council (SSRC) Program, Rev. 18, dated January 16, 2013
BPF Common Operator Training, OT1001-13, dated January 2013
NFS-TN-008, NFS Training Procedure, Rev. 12, dated July 9, 2012
NFS-HS-B-39, "Radioactive Material Receipt and Shipping Surveys," Rev. 22
NFS-WST-008, "Procedure for Receiving Nuclear Material," Rev. 24
NFS-WST-022, "NNSS Shipping Package Selection and Inspections," Rev. 9
NFS-WST-026, "Labeling/Packaging of Product Materials and Loading/Unloading ES-3100 Shipping Container," Rev. 9
NFS-WST-031, "Waste Packaging for Disposal Inside MAA," Rev. 7
SOP 335-J, "Waste Packaging for NNSS Disposal," Rev. 11
NFS-GH-910, "Fire Protection Program," Rev. 5
NFS-GH-62, "Control of Combustibles," Rev. 7
NFS-HS-16, "Safety Audits, Assessments, and Inspections," Rev. 14
NFS-HS-A-71, "Pre-Fire Plan Administration," Rev. 4
NFS-GH-57, Fire Brigade Organization and Administration, Rev. 5, dated April 6, 2010
NFS-GH-31, Compressed Gas Cylinders, Rev. 5, dated February 1, 2013
NFS-GH-903, Emergency Plan, Rev. 17, dated October 27, 2012
NFS-HS-B-11, Inspection of Emergency Lights, Rev. 9, dated April 4, 2012
NFS-HS-A-104, Testing/Inspection of Fire Barrier Systems, Rev. 1, dated August 30, 2012
NFS-HS-B-58, Fire Suppression Systems Inspections, dated March 11, 2013
NFS-HS-B-85, Portable Fire Extinguishers, Rev. 3, dated September 28, 2012
NFS-HS-E-14, CO2 Evacuation Alarm Response and Responsibilities, Rev. 11, dated October 27, 2012
NFS-GH-66, Operation and Maintenance of the Building 302/303 Carbon Dioxide Fire Suppression System, Rev. 5, dated June 7, 2013
NFS-HS-B-58, Confirm System Operability and Standby readiness in accordance with NFS-HS-B-58
NFS-HS-B-29-M-09-A, Daily Atmospheric Tests for H2 leakage at Maxon Valves
NFS-HS-A-21 Criticality, Fire, and CO2 Alarm Test Record
NFS-HS-B-70, Annual Smoke Detector Test, Rev. 8, dated August 27, 2012
NFS-HS-B-70, Annual Beam Detector Test, Rev. 7, dated August 27, 2012
FM-NFS-HS-A-53-03-A, Attachment A: Daily/weekly Fire Protection Program Inspection Checklist, including; B-29-M-09A: H2 Leak Check in Breezeway, Rev. 2
NFS-GH-27, Fire Watch for Planned Impairment

PIRCS Review:

P39530, Documented comments identified by NFS staff and critiques during biennial emergency drill
P38221, P37363, P34214

Records:

Waste Profile 9: Building 234 Decommissioning, Rev. 1, dated February 16, 2011
Waste Profile 5: BPF HEU Job Control Waste, dated April 11, 2013
Waste Profile 8: FMF Waste; Rev. 2, dated November 15, 2011
FMF-WC-001, "Waste Characterization of Fuel Manufacturing Facility Waste for Disposal at Nevada National Security Site," Rev. 0, dated November 11, 2010
US NRC Certificate of Compliance #9291
US NRC Certificate of Compliance #9315
Isotopic Determination for Waste Characterization of Fuel Manufacturing Facility Waste for Disposal at the Nevada Test, dated September 15, 2008
Shipping Manifests: NFL13073, NFS12036, NFL13063,
Carlsbad Certification Pilot Project approval for TRU waste
Audit QA-12-10, "QA Audit Report of Transportation QA program for Type B and Fissile Shipping Packages," dated August 17, 2012
Memorandum ASC-13-004, "Flow Testing of the B-304BZW, B-304NN, B-306W Sprinkler Systems"
NFS-GH-62-01, "Monthly Combustible Control Inspection Form," Rev. 1 for January – April 2013
NFS-HS-A-16-6, "Annual Inspection Record for Sprinkler Systems," Rev. 14 for the 04BZW, 304NN, and 306E Buildings
SRE Functional Test Record for N303XFRDAMP0004 performed in November 2012
SRE Functional Test Record for N303XFRDAMP0003 performed in November 2012
NFS-HS-B-58, "Sprinkler System Alarm Valves Monthly Inspection," Rev. 20 for April 2013
NFS-HS-A-104, "Annual Horizontal Sliding and Roll-Up Fire Door Inspection," for 2013
21T-10-9891, "Building 306E Sprinkler System Hydraulic Calculations"

Other Documents:

Work Packages 146604, 146638, 146945, 208643, 209132, 205017, 208495, 207898, 146176, and 146630
Various resumes
QA-13-06, SNM-124 Management Measure: Maintenance of Items Relied on for Safety, Quality Assurance Audit, dated April 17, 2013
CAP Training and Qualification Guideline Flowchart (NFS-CAP-009)
Lesson Plan: OT-333-SX, 05/16/12333 Solvent Extraction
Lesson Plan: OT-333-UM Dissolve, 333 U-Oxide Dissolution, dated February 25, 2013
Lesson Plan: OT-440-OPERATOR, Building 440 Operator, dated February 2009
Lesson Plan: OT-300-Area-K, Area K Operator Training, dated May 2008
Lesson Plan: SA-GET-2013; SA-RWT-2013, 2012 Annual Refresher Training, October 2012
QA-12-03, Management Measures – Procedures, Training, & Qualification Quality Assurance Audit, dated March 2, 2012
OPR-TB-APR13-12, OJT for Grinding U-Carbide, dated April 23, 2013
Tool Box Training: OPR-TB-APR13-12, Grinding U-Carbide, dated April 23, 2013

LOA-2142Q-049, Grinding U-Carbide Compounds Feed and Filter Residue in a Motorized Shaker, dated April 19, 2013 – July 19, 2013
Drawing Number 013-A1000-D, 300 Complex Fire Safety Layout
Drawing Number 304-A0018-C, Pre-Fire plan for Building 304BZW
Drawing Number 304-A0010-C, Pre-Fire plan for Building 304NN
Drawing Number 306-A1020-C, Pre-Fire plan for Building 306E
NFPA 600, Standard on Industrial Fire Brigades, 2010 Edition
NFPA 1081, Standard for Industrial Fire Brigade Member Professional Qualifications, 2012 Edition
NFPA 72, National Fire Alarm and Signaling Code, 2010 Edition
NFPA 25, Water-Based Fire Protection Systems Handbook, 2011 edition
NFPA 13, Standard for the Installation of Sprinkler System, 2010 edition
Fire Hazard Analysis Building 333, Rev. 3, dated February 1, 2010
Fire Risk Evaluation Building 302, Rev. 0, dated February 16, 2005
Offsite Agency Training Lesson Plan, dated November 13, 2012
Biennial Exercise drill Evaluation, dated April 30, 2013
Emergency Exercise drill evaluation, March 19, 2013
Fire Brigade Steering Committee meeting notes
Work Order 213026, Fire Barrier Penetration Detail, dated June 24, 2013
Service Request 157872, Fire Stop Penetration Seal Installation.
Work Order 0000130777, Re: 306-FRDAMP-0006 Movement Test, dated September 15, 2011
Work Order 0000130779, Re: 306-FRDAMP-0007 Movement Test, dated September 15, 2011
Work Order 0000130776, Re: 306-FRDAMP-0006 Visual Inspection, dated September 15, 2011
Work Order 0000130781, Re: 310-FRDAMP-0001 Movement Test, dated September 15, 2011

Corrective Action Reports:

C17159, C17160, C17472, C17473, C17474, C17717, C17728, C18232, I14304, I14346, I14369, I14222, 14369