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

May 2, 2016

Mr. B. Joel Burch
Vice President and General Manager
BWXT Nuclear Operations Group, Inc.
P.O. Box 785
Lynchburg, VA 24505-0785

SUBJECT: BWXT NUCLEAR OPERATIONS GROUP – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 70-27/2016-002 AND NOTICE OF VIOLATION

Dear Mr. Burch:

This letter refers to the inspections conducted from January 1 through March 31, 2016, at the BWXT Nuclear Operations Group (NOG), Inc., facility in Lynchburg, VA. The inspections were conducted to determine whether activities authorized under the license were conducted safely and in accordance with U.S. Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of these inspections. The results were discussed with you and members of your staff at exit meetings held on January 14, 2016, January 28, 2016, March 3, 2016, and April 27, 2016, for this integrated inspection report.

During the inspections, the NRC staff examined activities conducted under your license, as they related to public health and safety, 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 these inspections, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The 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 is cited 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 it is considered self-revealing and was not identified by the licensee.

Pursuant to the provisions of 10 CFR 2.201, BWXT Nuclear Operations Group, 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, within 30 days of the date of the letter transmitting this Notice

of Violation (Notice). 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.

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

If you have any questions concerning these inspections, please contact me at 404-997-4555.

Sincerely,

/RA/

Eric C. Michel, Chief
Projects Branch 2
Division of Fuel Facility Inspection

Docket No. 70-27
License No. SNM-42

Enclosures:
1. Notice of Violation
2. NRC Inspection Report 70-27/2016-002
   w/Attachment: Supplementary Information

cc: (See page 3)

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cc: (See page 3)

☒ PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE ☒ NON-SENSITIVE

ADAMS: ☒ ACCESSION NUMBER: ML16123A270 ☒ SUNSI REVIEW COMPLETE ☒ FORM 665 ATTACHED

OFFICE	RII:DFFI/PB2	RII:DFFI/SB	RII:DFFI/SB	RII:DFFI/SB	RII:DFFI/SB	RII:DFFI/SB	RII:DFFI/SB	RII:DFFI/PB2	RII:DC
SIGNATURE	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/
NAME	LCain	DAnderson	TSippel	NPeterka	JMunson	GGoff	RGibson	PGlenn	NPitoniak
DATE	4/27/2016	4/28/2016	4/27/2016	4/27/2016	4/27/2016	4/28/2016	4/28/2016	4/28/2016	4/27/2016
E-MAIL COPY	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICE	RII:DFFI/PB2	RII:DFFI/SB
SIGNATURE		
NAME	JGilliam	CRivera-Crespo
DATE	4/ /2016	4/ /2016
E-MAIL COPY	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DFFI\REPORTS\DRAFT INSPECTION REPORT FOLDER\BWXT NOG\2016 FEEDERS\QT1 (IR - 002)\FEEDERS\BWXT NOG IR 2016-002 (PUBLIC) REV3.DOCX

cc:
Joseph G. Henry
Chief Operating Officer
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Lynchburg, VA 24505-0785

Steve Harrison, Director
Division of Radiological Health
Department of Health
109 Governor Street, Room 730
Richmond, VA 23219

Letter to M. B. Joel Burch from Eric C. Michel dated May 2, 2016

SUBJECT: BWXT NUCLEAR OPERATIONS GROUP – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 70-27/2016-002 AND NOTICE OF VIOLATION

DISTRIBUTION:
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E. Michel, RII
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M. Baker, NMSS
T. Naquin, NMSS

NOTICE OF VIOLATION

BWXT Nuclear Operations Group, Inc. Docket No. 70-27
Lynchburg, Virginia License No. SNM-42

During an NRC inspection conducted January 11 through January 14, 2016, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> Safety Condition S-1 of SNM License SNM-42, states, in part, "For use in accordance with the statements, representations, and conditions in Chapters 1 through 11 of the application submitted."
>
> Chapter 11 of the BWXT license application, Management Measures, Section 11.4, Procedures, states, in part, that "Activities at BWXT NOG involving licensed material shall be conducted in accordance with written and approved procedures. Personnel shall be trained to perform all operations in strict compliance with procedures, Radiation Work Permits (RWP), or postings and not to perform an operation, utilizing licensed material, that is not addressed in a written and approved procedure, RWP, or posting."
>
> Section I, Unloading Carriers and Boats, step 9.1 of Operating Procedure (OP) 0061556, Recovery Conversion Furnace Operation, Revision 13, states, in part, "ensure carrier holder with carrier has been moved to the carrier/boat unloading position."
>
> Contrary to the above, on January 5, 2016, the licensee failed to ensure a carrier holder with carrier had been moved to the carrier/boat unloading position. Specifically, the failure to follow OP 0061556 resulted in an unplanned fire in the conversion furnace pre-filter located in the direct cooling filter housing and the activation of the Emergency Operations Center (EOC).

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

Pursuant to the provisions of 10 CFR 2.201, BWXT Nuclear Operations Group, 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, 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, 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.

Dated this 2nd day of May 2016

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No:	70-27
License No:	SNM-42
Report No:	70-27/2016-002
Licensee:	BWXT
Facility:	Nuclear Operations Group (NOG)
Location:	Lynchburg, VA 24505
Dates:	January 1 through March 31, 2016
Inspectors:	L. Cain, Senior Resident Inspector, RII/DFFI/PB2 N. Peterka, Acting Senior Resident Inspector, RII/DFFI/SB T. Sippel, Acting Senior Resident Inspector, RII/DFFI/SB S. Subosits, Senior Resident Inspector, RII/DFFI/PB2 D. Anderson, Fuel Facility Inspector, RII/DFFI/SB R. Gibson, Senior Fuel Facility Inspector, RII/DFFI/SB J. Gilliam, Fuel Facility Inspector, RII/DFFI/PB1 P. Glenn, Fuel Facility Inspector, RII/DFFI/PB2 G. Goff, Fuel Facility Inspector, RII/DFFI/PB2 J. Munson, Fuel Facility Inspector, RII/DFFI/SB N. Pitoniak, Fuel Facility Inspector, RII/DFFI/PB2 R. Womack, Fuel Facility Inspector, RII/DFFI/SB
Approved by:	E. Michel, Chief Projects Branch 2 Division of Fuel Facility Inspection

Enclosure 2

EXECUTIVE SUMMARY

BWXT Nuclear Operations Group
NRC Integrated Inspection Report 70-27/2016-002
January 1 - March 31, 2016

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

Safety Operations

- The items relied on for safety (IROFS) reviewed during this period were properly maintained in order to perform their intended safety function in accordance with the license application and regulatory requirements. (Sections A.1, A.2, and A.3)

- One Severity Level IV violation of NRC requirements was identified with regard to the site's failure to follow approved operating procedures. (Section A.2)

- The Nuclear Criticality Safety (NCS) program was properly implemented and maintained in order to assure that normal and credible abnormal scenarios remained subcritical as required by licence and regulatory requirements. Criticality analysis demonstrated double contingency and adequate control of NCS parameters. (Section A.4)

- For the areas reviewed, fire protection systems and area housekeeping were maintained in accordance with fire safety requirements for special nuclear material processing areas and storage areas. (Section A.5)

Radiological Controls

- The Radiation Protection program elements reviewed were implemented in accordance with the license and regulatory requirements. (Sections B.1 and B.2)

- The Environmental Protection program was implemented in accordance with the license application and regulatory requirements. (Section B.3)

- Radioactive waste activities were performed in accordance with regulatory requirements and procedures. (Section B.4)

Facility Support

- The post maintenance testing, preventive maintenance and surveillance testing observed for IROFS and other safety controls were implemented in accordance with the license and applicable procedure requirements. (Sections C.1 and C.2)

- Reports for tracking and resolution of safety-related issues included corrective actions to prevent recurrence. Extent of condition and extent of cause reviews were conducted when required by the governing corrective action program procedure. (Section C.3)

- The Plant Modifications Program was implemented in accordance with the license application and regulatory requirements. (Section C.4)

- The Emergency Preparedness program was implemented in accordance with the Emergency Plan and regulatory requirements. (Section 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

During the inspection period, routine fuel manufacturing operations and maintenance activities were conducted in the fuel processing areas and in the Research Test Reactors and Targets (RTRT) facility. Routine operations and maintenance activities were conducted in the Uranium Recovery (UR) facility.

A. Safety Operations

1. Plant Operations (Inspection Procedure 88135)

   a. Inspection Scope and Observations

   The inspectors performed routine tours of the fuel manufacturing areas housing special nuclear material (SNM), reviewed log sheets, and observed two shift turnover exchanges in UR. The inspectors interviewed operators, front-line managers, maintenance mechanics, radiation protection (RP) staff, and process engineering personnel regarding issues with plant equipment and to verify the status of the process operations.

   During the inspection period, the inspectors interviewed operators, front-line managers, maintenance technicians, engineers, RP technicians, and nuclear materials control technicians and determined that each of the individuals demonstrated adequate knowledge of the nuclear criticality safety (NCS) posting requirements, and the operations procedures associated with their assigned duties.

   The inspectors observed operations in progress in the RTRT, Filler, Machine Shop, and UR areas throughout the inspection period. The inspectors determined that the SNM processes and workstations observed during the walk-downs were operated in accordance with applicable procedures and NCS postings.

   b. Conclusion

   No violations of significance were identified.

2. Operational Safety (Inspection Procedure 88020)

   a. Inspection Scope and Observations

   The inspectors interviewed staff and reviewed records associated with the solvent extraction and low level and high level dissolution processes in the UR facility. The inspectors determined that the specific safety controls reviewed were being implemented and properly communicated as described in the Integrated Safety Analysis (ISA).

   The inspectors confirmed that engineered controls for the above-mentioned areas were present and capable of performing their intended safety functions. The inspectors verified the physical presence of passive and active engineered safety controls, evaluated the safety controls to determine their capability and operability, and verified that potential accident scenarios identified in the ISA were covered.

The inspectors determined that licensee administrative controls were implemented and communicated. The inspectors reviewed various procedures and determined that required actions as identified in the ISA had been correctly transcribed into written operating procedures. The inspectors evaluated the content of procedures with respect to operating limits and operator responses for upset conditions and verified that limits required to assure safety were adequately described in the procedures.

The inspectors interviewed various operators and determined that they were implementing the required safety controls. The inspectors observed operators performance and determined that they were adhering to applicable safety procedures. The inspectors reviewed the postings applicable to the tasks being observed and determined that these postings were current, reflected safety controls, and were followed by the operators.

Through interviews, document reviews, and observations, the inspectors verified that the licensee conducted preventive maintenance, calibrations, and periodic surveillances as required by the ISA for the selected safety controls.

The inspectors reviewed the licensee's training program to verify that training and qualification commitments were satisfied and maintained current for a selection of personnel. The inspectors interviewed several operators in regards to solvent extraction and low level dissolution area safety control requirements when dealing with hazards in the plant areas and determined that their training was adequately implemented.

The inspectors reviewed the licensee's corrective action program (CAP) entries since the last operational safety inspection and determined that deviations from procedures and unforeseen process changes affecting nuclear criticality, chemical, radiological, or fire safety were documented and investigated promptly. In addition, the inspectors evaluated the corrective actions associated with selected CAP entries and determined that the completed corrective actions were adequate.

In addition, the inspectors followed up on a fire incident at conversion furnace, WS-401, in UR. On January 5, 2016, there was a fire in the duct work and an associated filter above WS-401. Personnel in the area evacuated, and responders were able to extinguish the fire.

Introduction: The inspectors identified a self-revealing cited Severity Level (SL) IV violation of SNM License SNM-42, Safety Condition S-1, for failure to follow a procedural requirement for safely starting, operating, and shutting down the UR conversion furnace system. Specifically, the operators failed to perform a required step in Operating Procedures (OP) 0061556, Recovery Conversion Furnace Operation, Revision (Rev.) 13, Section I, Unloading carriers and Boats, step 9.1, which states, in part, "ensure carrier holder with carrier has been moved to the carrier/boat unloading position."

Description: On January 5, 2016, the furnace pusher stopped moving and a noise was heard near the pusher motor during operation of recovery conversion furnace, WS-401. The area operator initiated an emergency stop (E-stop) in an attempt to re-set the system and move the carriers forward. After another unsuccessful attempt to re-set the system, the operator noticed smoke, then flames, coming from the direct cooling filter housing above the furnace and he contacted an emergency team member. Flames were seen coming out of the filter housing and were put out by an operator with a

portable dry fire extinguisher. A smoke detector activated and sounded the fire alarm beacons in the area and the area was evacuated. The Emergency Operations Center (EOC) was activated, and the emergency team investigated and confirmed the fire was extinguished. Radiation control performed smear and airborne checks and determined no contamination above normal background was released during the event. No personnel were injured. A corrective action was initiated, CA201600013: Recovery WS-401 Fire Incident. A radiation work permit (RWP) was generated to remove the licensed material from the furnace.

In an effort to avoid unplanned process upset conditions, BWXT has procedures and training in place which provided details on how to safely start, operate, and shut down the UR conversion furnace system. On January 5, 2016, an operator failed to adhere to procedure OP 0061556, Recovery Conversion Furnace Operation, Revision (Rev.) 13. The operator failed to ensure that the carrier holder with carrier had been moved to the carrier/boat unloading position. The operator did not identify that a carrier was not present in the carrier holder and was still in the cool down area. Instead of stopping at this point, the operator initiated another load cycle, with licensed material. Initiating the next load cycle caused the carrier mover system to jam with the doors between the heating zone chamber and the cooling zone chamber left in the open position. The operator then activated the E-stop, which disengaged all power to the systems. The E-stop also resulted in the door between the heating zone chamber and the cool zone remaining open. This allowed hot air to escape the conversion furnace and to ignite a pre-filter located in the direct cooling filter housing above the conversion furnace. Operator compliance with procedure OP 0061556 step 9.1 would have identified that a carrier was not in the carrier/boat unloading position and would have resulted in the operator not initiating another loading cycle that caused the carrier mover system to jam with the heating zone chamber doors in the open position. The initiation of the E-stop, therefore, would not have resulted in the door between the heating chamber and cool zone remaining open, preventing hot air from escaping the conversion furnace and igniting the pre-filter.

Failure to Conduct Activities in Accordance with Written and Approved Procedures Resulting in a Fire Duct Event

Analysis: The failure to follow procedure step 9.1 in OP 0061556 for the safe starting, operating, and shutting down the Recovery conversion furnace system was determined to be a violation of NRC requirements. The inspectors determined that the violation was self-revealing because it was identified through the fire event.

The inspectors determined that the actual and potential safety significance was low as no injuries occurred and no licensed material was released to the public. However, the violation was found to be more than minor based on Screening Question 4 of Nuclear Regulatory Commission (NRC) Manual Chapter 0616, “Fuel Cycle Safety and Safeguards Inspection Reports,” Appendix B, which states, “does the noncompliance represent more than a paperwork issue (e.g., resulted in a physical impact on the plant) that adversely impacted personnel or nuclear safety?” The inspectors determined the failure to follow the operating procedure was a contributing factor that led to the fire in the UR conversion furnace direct cooling filter housing and subsequent evacuation of personnel from the area. The fire caused damage to equipment used to contain and prevent the spread of contamination of radioactive material, thus having a negative impact on nuclear safety. If the operator had identified that a carrier was not in the

carrier/boat unloading position and initiated the E-stop during the authorized unloading cycle, the door between the heating chamber and cool zone would not have remained open. This would have prevented hot air from escaping the conversion furnace and igniting the pre-filter. This event led to the evacuation of the area and activation of the EOC. This unplanned process upset condition resulted in the suspension of furnace operation in UR until the event investigation was completed.

In accordance with the NRC Enforcement Policy, violations that are less serious, but are of more than minor concern, and result in no or relatively inappreciable potential safety or security consequences are characterized as Severity Level IV violations.

Enforcement: Safety Condition S-1 of SNM License SNM-42, states, in part, "For use in accordance with the statements, representations, and conditions in Chapters 1 through 11 of the application submitted."

Chapter 11 of the BWXT license application, Management Measures, Section 11.4, Procedures, states, in part, that "Activities at BWXT NOG involving licensed material shall be conducted in accordance with written and approved procedures. Personnel shall be trained to perform all operations in strict compliance with procedures, Radiation Work Permits, or postings and not to perform an operation, utilizing licensed material, that is not addressed in a written and approved procedure, RWP, or posting."

Section I, Unloading Carriers and Boats, step 9.1 of OP 0061556, Recovery Conversion Furnace Operation, Rev. 13, states, in part, "ensure carrier holder with carrier has been moved to the carrier/boat unloading position."

Contrary to the above, on January 5, 2016, the licensee failed to ensure a carrier holder with carrier has been moved to the carrier/boat unloading position. Specifically, the failure to follow OP 0061556 resulted in an unplanned fire in the conversion furnace pre-filter located in the direct cooling filter housing and the activation of the EOC.

The inspectors determined that the actual and potential safety significance was low as no injuries occurred and no licensed material was released to the public. The licensee initiated a level 1 corrective action, CA201600013: Recovery WS-401 Fire Incident, which includes PIRT and Taproot investigations. The licensee also generated a RWP to remove the licensed material from the furnace. Radiation control performed smear and airborne checks and determined no contamination above normal background was released during the event. Furnace operation was suspended until event investigation was completed.

The failure to follow a procedure for safely starting, operating, and shutting down the Recovery conversion furnace system is a Severity Level IV violation (VIO) of NRC requirements and will be tracked as VIO 70-27/2016-002-01, "Failure to Conduct Activities Involving Licensed Material in Accordance with Written and Approved Procedures Resulting in a Fire Duct Event."

b. Conclusion

A Severity Level IV violation of NRC requirements was identified for failure to conduct activities involving licensed material in accordance with written and approved procedures.

3. Safety System Walk-down (Inspection Procedure 88135.04)

a. Inspection Scope and Observations

The inspectors performed a walk-down of a safety-significant system involved with the processing of SNM. As part of the walk-down, inspectors reviewed the NCS postings associated with the manufacture of fuel elements. The inspectors verified that items relied on for safety (IROFS) were available and reliable to perform their intended functions when needed to comply with the performance requirements of 10 CFR 70.61. No conditions that degraded plant equipment, the availability, or reliability of IROFS were identified.

To determine if plant equipment was installed correctly, the inspectors reviewed the relevant documentation, as well as ISA/Safety Analysis Report (SAR) 15.26 for the manufacture of fuel elements. During the walk-downs, the inspectors verified the following as appropriate:

- Controls in place for potential criticality, chemical, and fire hazards
- Process vessel configurations maintained in accordance with Nuclear Criticality Safety Evaluations
- Correct valve position and material condition
- Electrical power availability
- Adequate lighting in and around equipment
- Hangers and supports correctly installed and functional

b. Conclusion

No violations of significance were identified.

4. Nuclear Criticality Safety (Inspection Procedures 88015 and 88135)

a. Inspection Scope and Observations

During daily tours of the Filler, UR, RTRT, and the general shop floor areas, the inspectors verified that NCS controls and postings were in place and available to perform their intended functions. The inspectors reviewed the field implementation of NCS-related administrative IROFS associated with the drum dryer, high level dissolver, and hot waste drains in UR. During these observations, the inspectors noted that the IROFS were properly implemented and that operations personnel complied with NCS posting requirements in their work areas.

The inspectors also reviewed the quarterly audit report for NCS. The inspectors verified that the walk downs required by the license were appropriately documented during the fourth quarter of 2015.

The inspectors evaluated the adequacy of the licensee's NCS program and analyses to assure the safety of fissile material operations. The inspectors reviewed selected NCS documents, including new and revised NCS analyses and procedures, to determine whether criticality safety of risk-significant operations was assured through engineered and administrative controls with adequate safety margin. The NCS evaluations and

supporting documents reviewed demonstrated adequate identification and control of NCS hazards to assure operations within subcritical limits through appropriate limits on controlled parameters.

The inspectors accompanied an NCS engineer on a weekly vault walk down and its associated shipping and receiving area. The inspectors observed that the NCS engineer verified NCS postings and limits, interacted with area operators, and inspected the area for anomalous conditions. The inspectors reviewed select NCS audits and assessments, including backshift and weekend audits. The inspectors reviewed select corrective action program entries and NCS concern analyses.

The inspectors reviewed operator training records for the Recovery, Specialty Fuels Facility (SFF), and Pickling areas. The inspectors interviewed operators in the Recovery, Pharmacy, and Ultrasonic Testing (UT) areas.

The inspectors performed plant walk downs in the Recovery, Pharmacy, Filler, Metallurgical Laboratory, Vault 7, and UT areas. The inspectors reviewed receipt inspection and vendor records for UT poison fixtures. The inspectors verified that annual NCS volume surveillances were performed on annular tanks in Recovery.

b. Conclusion

No violations of significance were identified.

5. Fire Protection Quarterly (Inspection Procedure 88135.05)

a. Inspection Scope and Observations

During plant tours, the inspectors verified that transient combustibles were being adequately controlled and minimized in RTRT, Bays 3T, Bays 6-10, UR, Filler Area, and Metallurgical Laboratory. The inspectors conducted fire safety tours of these areas and reviewed the fire detection and suppression capabilities. No compliance or regulatory issues were noted with respect to fire protection equipment. The inspectors also reviewed the Pre-Fire Plans, both to inform the fire safety tours and to verify that it was up-to-date. The inspectors also verified that housekeeping in the areas reviewed was sufficient to minimize the risk of fire.

b. Conclusion

No violations of significance were identified.

6. Fire Protection Annual (Inspection Procedure 88055)

a. Inspection Scope and Observations

The inspectors toured plant areas containing fire safety controls to assess the material condition of fire protection equipment, systems, and features. The inspectors verified that flammable and or combustible materials were stored in marked cabinets as specified in procedures and that housekeeping and the control of combustible materials were consistent with required procedures.

During the inspection, the inspectors also reviewed two recent fire-related events at the facility. On Monday, December 7, 2015, a fire occurred in the saw enclosure located in the non-radiological side of Metallurgical Laboratory (Cold Met Lab). The fire did not result in any consequences to the workers, the public, or the environment. The inspectors reviewed the root cause analysis, including extent of condition for similar systems and equipment located in radiological areas. The inspectors also observed that the incident was captured as Level 1 corrective action in the CAP as required.

On January 5, 2016, a fire occurred at the recovery furnace exhaust located in UR. The fire was inspected during the annual fire protection inspection and also during the operational safety inspection. Based on documentation reviews, inspectors confirmed that the EOC was activated as per procedure. The inspectors observed that a Post Incident Review was also implemented as required by procedure. The inspectors also reviewed the licensee's root cause analysis. Additionally, through interviews, documentation reviews, and a walk-down of the recovery furnace area, inspectors determined that the actual safety significance was low. Survey results for personnel and fixed air samples showed that contamination levels did not exceed background for the affected area. Stack air samples also met requirements. Based on a review of the ISA, no accident scenarios exceeded the 10CFR70.61 criteria for fire events.

b. Conclusion

No violations of significance were identified. However, a Severity Level IV violation was identified during the Operational Safety Inspection (Inspection Procedure 88020) as documented in section A.2.a.

B. Radiological Controls

1. Radiation Protection Quarterly (Inspection Procedure 88135)

a. Inspection Scope and Observations

The inspectors toured the UR, RTRT, and Filler controlled areas and verified that radiological signs and postings accurately reflected radiological conditions within the posted areas. The inspectors observed plant personnel as they removed protective clothing at controlled area step-off pads. The inspectors observed plant personnel as they performed various tasks in different areas of the facility and verified that the proper protective equipment was used to prevent contamination. The inspectors also observed plant employees as they performed exit monitoring at the associated controlled area exits and verified that monitoring instructions were followed at the exit point, including use of the hand frisker when the hand and foot monitors were unavailable. The inspectors observed employees using the new exit monitors in the UR controlled area exit and verified that the monitors were being used properly.

The inspectors reviewed two RWPs utilized in the UR controlled area. The inspectors verified the RWPs contained appropriate work instructions, were posted in the work areas for employees' review, and that workers signed the applicable RWP. The inspectors noted that for the portions of work activities observed, plant workers performed tasks in accordance with the RWP requirements.

The inspectors reviewed a sample of the Alpha Smear Sampling Weekly Reports that are generated when a smear exceeds the licensee's administrative limit. All instances were shown to have been properly cleaned, and resulted in acceptable values when later re-smeared.

The inspectors performed a review of the licensee's semi-annual effluent monitoring report required by 10 CFR 70.59. The inspectors verified that liquid and gaseous effluents releases and the resultant off-site doses were appropriately documented for the period covering June 29, 2015 to January 3, 2016.

b. Conclusion

No violations of significance were identified.

2. Radiation Protection (Inspection Procedure 88030)

a. Inspection Scope and Observations

The inspectors reviewed the Radiological Protection Program and determined that the licensee's program performance was reviewed at least annually to comply with 10 Code of Federal Regulations (CFR) 20.1101. The inspectors reviewed the Health Physics organization chart and interviewed staff regarding their responsibilities. Since the last inspection, there was a promotion to Manager, Licensing & Safety Analysis. The inspectors determined that the radiation protection program responsibilities and functions were independent from operations and maintenance. The inspectors reviewed a sample of radiological procedures and determined that changes in these procedures, made since the last inspection, were consistent with regulations and license requirements.

The inspectors reviewed the licensee's training program for radiological controls and protection. The inspectors reviewed training procedures and records and observed a radiation worker training class to ensure all of the required topics were addressed. The inspectors also interviewed training personnel and observed a demonstration of the Training Management System (TMS) to determine how the frequency of training and qualifications were managed. The inspectors determined that the licensee was implementing the Radiation Protection training program consistent with the license requirements.

The inspectors reviewed the records of Individual Contamination Reports for calendar year (CY) 2015 and the beginning of CY 2016. The inspectors determined that, on occasion, workers would come up contaminated at the exit of an intermediate area after receiving an alarm during surveying. The licensee determined that the upward trend in individual contamination was attributed to additional work load and workers. The contamination report was captured in the licensee's CAP and management performed additional oversight of the Radiological Protection Program. The inspectors verified that the regulatory limits for a personnel contamination event were not exceeded.

Air monitoring and smear data were reviewed by the inspectors to determine if surveys were effective in the identification of airborne particulates and surface contamination. The inspectors reviewed and determined that the licensee had established schedules for periodic surveys of work areas. The inspectors reviewed a selected sample of survey

records since the last inspection. The inspectors determined that the survey program adequately evaluated the magnitude and extent of radiation and contamination levels in accordance with 10 CFR 20.1501 and the license.

The inspectors reviewed RWPs, interviewed health physicists and technicians responsible for RWPs, and observed operators and contractors performing work in accordance with the RWPs. The inspectors determined that the operators were trained prior to performing work required by RWPs and that each work was briefed by their supervisor. The inspectors also determined that the RWP was at the work station and signed by operators and contractors performing the work. The inspectors determined that the licensee was processing RWPs in accordance with the NRC license.

The inspectors examined selected portable survey instruments and fixed monitoring equipment to determine operability and calibration status. The inspectors verified that instruments and equipment used for quantitative radiation and contamination measurements were calibrated at the proper frequency as required in 10 CFR 20.1501. The inspectors interviewed staff and determined that the radiation protection instruments were checked daily for operability as required by the license application.

The inspectors reviewed radiological signs and postings at entrances to controlled areas as well as within the controlled areas to determine compliance with regulatory requirements. Radiological areas were posted in accordance with the license and regulatory requirements and accurately reflected radiological conditions in the areas. Radioactive sources viewed by the inspectors were observed to be controlled and secured in accordance with NRC requirements. The inspectors conducted walk downs of Uranium Recovery, Research Test Reactor Targets, the Filler area, and the Lynchburg Technology Center (LTC) and determined that the areas were adequately posted and controlled. The inspectors verified that the Notice to Employees, NRC Form 3, was posted in high traffic areas (near employee entrances/exits) in accordance with 10 CFR 19.11.

The licensee's as low as reasonable achievable (ALARA) program was reviewed to determine if the program and ALARA goals were developed and implemented in accordance with the license. On a quarterly basis, the licensee conducted ALARA Committee meetings detailing ALARA goals and exposure summaries in order to identify undesirable trends. The inspectors interviewed the manager responsible for the ALARA evaluations and assessments and determined the evaluations and assessments to be in accordance with their license. The inspectors determined that the licensee utilized procedures and engineering controls to achieve occupational doses which were ALARA as required by 10 CFR 20.1101.

b. Conclusion

No violations of significance were identified.

3. Effluent Control and Environmental Protection (Inspection Procedure 88045)

a. Inspection Scope and Observations

The inspectors interviewed licensee staff and reviewed program changes and verified that there were no significant program changes within the last 12 months. The inspectors

also determined that there were no significant personnel changes during the same time period. The inspectors reviewed recent audits and verified that these audits were performed within the required frequency. The inspectors verified that findings and observations documented in the audits were entered into the corrective action system and that recommended corrective actions were implemented. The inspectors reviewed program requirements in the license application and determined that quality control of laboratory measurements was implemented in accordance with approved procedures. The inspectors verified that laboratory analyses were conducted by an approved vendor, independent of licensee environmental protection personnel.

The inspectors reviewed the CY 2015 semi-annual effluent reports and determined that the licensee was in compliance with the reporting requirements of 10 CFR 70.59. The inspectors reviewed records of airborne effluents and found all results to be below 10 CFR 20 requirements. The inspectors accompanied licensee personnel into the field and observed the collection of 10 fixed boundary air samples and performed spot checks of quarterly instrument calibrations. The inspectors noted that licensee staff demonstrated adequate knowledge regarding system operation and sampling requirements and activities were conducted in accordance with approved procedures.

The inspectors reviewed quarterly calibration records associated with environmental boundary air samples and reviewed daily functional checks associated with counting equipment. The inspectors also reviewed the most recent soil, sediment, and vegetation results and found them to be below licensee action levels as documented in Chapter 9 of the License Application. The inspectors reviewed training records for two environmental protection radiological controls technicians and two maintenance personnel responsible for the maintenance and calibration of environmental protection monitoring equipment.

The inspectors reviewed the public dose assessment and determined that the average annual effluent concentrations released in 2015 did not exceed the values specified in Appendix B of 10 CFR Part 20. The total dose to the hypothetical individual likely to receive the highest dose from the licensed operation did not exceed the 10 CFR 20.1301(a)(1) limit for 2015. The inspectors reviewed the airborne portion of the public dose assessment and verified that result was in compliance with the ALARA constraint required by 10 CFR 20.1101(d).

b. Conclusion

No violations of significance were identified.

4. Radioactive Waste Processing, Handling, Storage, and Transportation (Inspection Procedure 88035)

a. Inspection Scope and Observations

The inspectors determined that the licensee had established and maintained adequate procedures and a quality assurance program to ensure compliance with the requirements of 10 CFR Part 20 and 10 CFR Part 61, as applicable to low-level radioactive waste form, classification, stabilization, and shipment manifests/tracking.

The inspectors reviewed procedures and observed performance of tasks related to those procedures. The procedures were clearly written, adequately delineated responsibilities, and were effective at accomplishing the tasks. The inspectors observed operators performing radioactive waste activities and determined that the operators were familiar with their responsibilities as they performed their tasks in accordance with on-site procedures.

The inspectors reviewed the quality assurance program for radioactive waste management and determined that the required audits were being performed. The findings from these audits were entered into the licensee's corrective action program for resolution. The inspectors determined that the licensee continued to implement the radioactive waste management program in accordance with the license and regulations.

The inspectors reviewed the licensee's program for classifying low-level radioactive waste and mixed 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 determined that the licensee was in compliance with federal regulations and the license.

The inspectors reviewed the licensee's procedures for labeling waste shipments and tracking radioactive waste. The inspectors observed the preparations of radioactive waste compacted in drums for shipment to a waste broker. The procedures were adequate to ensure that radioactive waste was properly labeled, and that these procedures specified actions to be taken should the shipments not reach the intended destination in the time specified. The inspectors also reviewed the procedures for placement, inspection, and repackaging of radioactive waste and found them to be in accordance with the license application.

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 designated areas. The containers were properly labeled to reflect their contents and were in adequate physical condition.

b. Conclusion

No violations of significance were identified.

C. Facility Support

1. Post Maintenance Testing (Inspection Procedure 88135.19)

a. Inspection Scope and Observations

The inspectors witnessed and verified one post-maintenance test was performed in accordance with work order (WO) documentation. The inspectors witnessed performance of a post maintenance test of new plumbing for the UR waste tanks, which included leak tests of the plumbing, and testing the level detectors and pumps for the annular tanks. The maintenance technicians corrected the leaks that were revealed by the leak test, and observed that the level detectors and pumps worked together as required by the system specifications, as a result, the surveillance check acceptance

criteria were met. The inspectors also verified that post-maintenance test activities were conducted in accordance with applicable WO instructions for 10 corrective maintenance WOs.

b. Conclusion

No violations of significance were identified.

2. Surveillance Testing (Inspection Procedure 88135.22)

a. Inspection Scope and Observations

The inspectors observed preventive maintenance surveillance tests on the High Level Alarm and Interlocks for the Primary Organic Column Array in the UR area. Also, they observed a preventive maintenance surveillance test on the raffinate collection column low level sensor and alarm. Each of the preventive maintenance activities conducted met the acceptance criteria in the work order instructions. The inspectors reviewed an additional nine completed preventive maintenance work orders, for surveillance testing and inspection of safety-related systems, and verified that the results were acceptable to confirm the availability and reliability of any associated IROFS and licensee operating procedure requirements.

b. Conclusion

No violations of significance were identified.

3. Management Organization and Controls (Inspection Procedure 88135)

a. Inspection Scope and Observations

The inspectors reviewed a sample of 20 items entered into the licensee's corrective action (CA) system during the inspection period to ensure that items pertinent to safety, security, and non-conforming conditions were identified, investigated as necessary, and tracked to closure. The inspector verified that the issues of high safety significance were properly identified and reviewed for apparent causes. The inspectors noted that, for those issues requiring extent of condition/extent of cause reviews, the reviews were completed and documented in the applicable CAs. The inspectors verified that appropriate CAs to prevent recurrence were identified in the CA system, and were reviewed and tracked to completion in accordance with the licensee's CA system implementing procedure, Quality Work Instruction (QWI) 14.1.1, Preventive/Corrective Action System.

b. Conclusion

No violations of significance were identified.

4. Permanent Plant Modifications (Inspection Procedure 88135.17)

a. Inspection Scope and Observations

The inspectors reviewed a sample of risk significant plant modifications. Specifically, the inspectors evaluated the impacts to associated IROFS and ISA accident sequences in the selected modifications. The inspectors reviewed in the licensee's change request (CR) documentation regarding the modifications to the piping for the UR waste tanks and modifications associated with the nitric acid tank system supply. The inspectors conducted field walk downs on portions of the modifications to validate the as-found plant configurations were in agreement with the CR documentation and to evaluate the material condition of any associated IROFS. In addition, the inspectors reviewed any updates and changes to the ISA/SAR and procedures that were affected by the modifications.

The inspectors also reviewed the CR packages for accuracy and adherence to the licensee's change management process QWI 5.1.12, Change Management. The inspectors verified the applicable post maintenance installation and testing requirements were adequately identified in the CR documentation as necessary. The inspectors determined that CR documents reviewed were adequately reviewed by the affected safety disciplines. The inspectors verified that the licensee addressed any impacts of modifications to the ISA/SAR.

The inspectors attended one change review board (CRB) meeting during the quarter and verified that the affected safety disciplines identified appropriate safety requirements for implementation of the Safety Evaluation Requests on the CRB meeting agendas. The inspectors reviewed the licensee's CA program to verify that issues relating to the preparation and installation of permanent plant modifications were entered into the CAP and that the corrective actions were appropriate and commensurate with safety significance.

b. Conclusion

No violations of significance were identified.

5. Emergency Preparedness (Inspection Procedure 88050)

b. Inspection Scope and Observations

The inspectors interviewed staff and reviewed records and determined that changes made to the emergency plan (EPlan) or within the facility were properly coordinated with the emergency preparedness program, as applicable. The inspectors reviewed several EPlan implementing procedures (EPIPs) revised since the last emergency preparedness inspection. The inspectors verified that the EPIPs inspected were reviewed annually and that the proposed changes were reviewed by the licensee's emergency preparedness organization as required. The inspectors determined that the EPIP changes reviewed were in compliance with the EPlan and did not result in a decrease of effectiveness of the emergency preparedness program. The inspectors also reviewed changes made to the EPlan since the last emergency preparedness inspection and determined that the changes did not result in a decrease in effectiveness of the program.

The inspectors reviewed the licensee's emergency call list and verified that the list was periodically tested for accuracy and maintained as required.

The inspectors reviewed training records and interviewed licensee staff regarding emergency preparedness training completed since the last emergency preparedness inspection. Interviews included the emergency preparedness coordinator, incident commanders and other personnel with responsibilities associated with the EOC or emergency response activities. The inspectors determined that the training reviewed was conducted in accordance with the EPlan. The inspectors verified that the licensee provided emergency management and emergency response training for site personnel as required. Based on a review of records, the inspectors verified that individuals responsible for using emergency equipment were qualified as required. The inspectors also verified that the licensee provided training representative of various postulated emergency situations consistent with the frequency and performance objectives required in the EPlan.

The inspectors reviewed the current letters of agreement in place with off-site support agencies and verified that the organizations required by the EPlan had up-to-date agreements. The inspectors interviewed various off-site support agency representatives, including Concord Rescue Squad, Lynchburg General Hospital, and Campbell County Sheriff Department and determined that they maintained an understanding of the written agreements. The inspectors also verified via interviews with off-site support personnel and records reviewed that the licensee invited off-site support agencies to participate in site specific training as required by the EPlan. The inspectors concluded that off-site support personnel routinely participated in the licensee's on-site emergency drills.

The inspectors observed the storage of emergency equipment at the primary, alternate, and off-site EOC as well as in several storage locations on-site, including Station One. During these observations, the inspectors verified that inventory levels were maintained as required by the EPlan. The inspectors also verified that the EOCs were readily accessible and maintained the required amount of communication equipment. The inspectors reviewed the accountability procedure, and verified that assembly points were present and accessible for the means of performing accountability and mustering during an evacuation. The inspectors also reviewed the control, distribution, and maintenance of the site's pre-fire plan, EPlan, and EPIPs, and determined that the licensee was in compliance. The inspectors observed a successful communication test with the NRC Emergency Operations Center, and verified via reviewed records that the licensee conducted communications testing with all required off-site support organizations at the required frequency as outlined by the EPlan and EPIPs.

The inspectors reviewed the licensee's internal, independent audits of the emergency preparedness program conducted since the last inspection, and verified that a system was in place for tracking and resolving audit findings. The inspectors also reviewed records associated with EOC activations, which required the implementation of the EPlan, and drills that occurred since the last emergency preparedness inspection. The inspectors verified that any problems or deficiencies identified, which were associated with the implementation of the EPlan, were documented during the critique process, and detailed in the licensee's corrective action system.

b. Conclusion

No violations of significance were identified.

D. Exit Meeting

On January 14, 2016, January 28, 2016, March 3, 2016, and April 27, 2016, the inspectors presented the inspection results to B.J. Burch and members of the licensee 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
T. Allen	Front Line Manager B
D. Ashworth	Group Leader, Industrial Health and Safety
L. Ayers	Waste Treatment Technician
L. Branham	Front Line Manager
B.J. Burch	Vice President and General Manager
J. Calvert	Advisory Engineer, Industrial Health and Safety
K. Conway	Unit Manager, Radiation Protection
N. Coles	Front Line Manager, Specialty Fuels Facility
B. Dilling	Emergency Preparedness Manager, Industrial Health and Safety
L. Duncan	Nuclear Criticality Safety Engineer
M. Edstrom	Fire Protection Engineer
D. Faidley	Unit Manager, Nuclear Criticality Safety
C. Goff	Corrective Action Program Manager
R. Harvey	Front Line Manager for Wastewater Treatment
L. Hall	Environmental Safety and Health
D. Hicks	Instrument and Control Supervisor
R. Johnson	Licensing Engineer
K. Kirby	Front Line Manager, Nuclear Materials Control
S. McElroy	Health and Safety Technician
R. Moore	Front Line Manager C
L. Morrell	Manager, Environmental Protection & Industrial Safety
W. Ogden	Manager, Nuclear Materials Control
L. Ragland	Unit Manager, Uranium Processing and Research Reactors
R. Simmons	Licensing and Safety Analysis
T. Smith	LTC Radiation Protection Supervisor
D. Spangler	Section Manager, Nuclear Safety and Licensing
B. Stratton	Front Line Manager, Radiation Protection
S. Subosits	Licensing Engineer
C. Terry	Unit Manager, Licensing and Safety Analysis
M. Turek	Process Engineer for UPRR (Principle Engineer, Recovery Ops)
D. Ward	Dept. Manager, Environmental, Safety Health and Safeguards
L. Wetzel	Senior Nuclear Criticality Safety Engineer
S. Williams	Transportation Coordinator, Nuclear Materials Control
C. Yates	Section Manager, Uranium Processing and Research Reactors

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

70-27/2016-002-01	VIO	Failure to conduct activities involving licensed material in accordance with written and approved procedures resulting in fire duct event (paragraph A.2)

3. LIST OF INSPECTION PROCEDURES USED

88015	Nuclear Criticality Safety
88020	Operational Safety
88030	Radiation Protection
88035	Radioactive Waste Processing, Handling, Storage, and Transportation
88045	Effluent Control and Environmental Protection
88050	Emergency Preparedness
88055	Fire Protection Annual
88135	Resident Inspection Program For Category I Fuel Cycle Facilities
88135.02	Plant Status
88135.04	ISA Implementation
88135.05	Fire Protection
88135.17	Permanent Plant Modifications
88135.19	Post Maintenance Testing
88135.22	Surveillance Testing

4. DOCUMENTS REVIEWED

Records:

2015 Emergency Management Organization Training
2015 Emergency Response Organization Training
2016 EOC Staff Roaster, dated February 18, 2016
Alpha Smear Sampling Weekly Report; dated January 31, 2016, January 24, 2016, January 17, 2016, January 10, 2016
BWXT Audit Schedule 2015 and 2016
CR-1044423, Rev. 0, dated May 5, 2015
E61-001, OJT – Recovery Operations, Rev.14
E61-459, Uranium Recovery Personnel Training Records: Recovery Furnace Operators, Rev. 39
E61-559, Recovery Conversion Furnace Process Variable Specification Sheet, Rev. 04
E61-588, Recovery Conversion Furnace Run Sheet, Rev. 04
Emergency Preparedness Committee Minutes, First Quarter 2015
HS-02-01-01, 2015 Generic Safety Audit Checklists, Rev. 7, dated March 17, 2015 and December 15, 2015
HS-2015-023, EOC Activations, 2015, dated January 28, 2015
HS-2015-115, Emergency Team Quarterly Exercise 3rd Quarter – 2015
HS-2015-131, 2015 Annual Emergency Plan Review, dated October 26, 2015
HS-2015-141, 2015 Biennial Emergency Response Drill/4th Quarter Emergency Response Drill, dated November 6, 2015
HS-2015-157, USNRC Fire Protection Potential Violation Meeting Document, dated December 12, 2015
HS-2016-005, Work Station 401 (Recovery Furnace) Fire Incident, January 5, 2016, dated January 7, 2016
HS-2016-018, Final PIRT 15-02 CA201501852 Cold Side Met Lab Fire Report, dated January 16, 2016
Internal Audit Summary Report, 259-4D Emergency Preparedness (Training, Drill, and Exercises), dated June 2015

Internal Audit Summary Report, 259-4B Emergency Preparedness (Facilities and Equipment), dated January 2016
Inventory Inspection Records: Emergency Equipment Cabinet, Decontamination Cart, Radiation Equipment on Ambulance, Radiological Response Van, Radiological Control Lab Trailer Emergency Equipment, RACON Office, dated January 2016
M11-G-021, On-the-Job Training for New/Transfer Employees, Rev. 13, SER-15-030, dated October 28, 2015
MP 258, Functional Testing, dated April 30, 2013 and April 17, 2014
MP 2539, Oxygen Sensors
N-517, 10CFR70.72 Change Evaluation Checklist, dated March 25, 2015
NCSE-02, Rev. 44, Appendix E, dated January 27, 2016
NCSE-03-03, NCS Weekly Inspection Form, Rev. 1, dated January 12, 2015, February 23, 2015, March 30, 2015, June 3, 2015, August 22, 2015NCS-1999-024, January 29, 1999
NCS-2005-267, Nuclear Safety Release for A1B Production Clusters: SER 03-035 Phase 3, dated October 19, 2005
NCS-2009-092, Nuclear Criticality Safety Analysis Supporting Phase 1 of SER 07-071, NMC Jaw Crusher Operation, dated November 11, 2009
NCS-2014-121, Nuclear Criticality Safety Release Supporting SER 11-025 Phase 01 Higher Tier Fixtures (VFF Cluster Production), dated October 13, 2014
NCS-2015-074, dated November 16, 2015
NCS-2015-105, dated October 28, 2015
NCS-2015-121, NCS Safety Analysis for TREAT Fuel Development per SER 15-004 (SER Additional Information on Sept. 30, 2015), dated October 7, 2015
NCS 2015-123, NCS Violation and Observation Summary – 3rd Quarter 2015, dated October 30, 2015
NCS-2015-127, NCs Justification Analysis Supporting SER 15-022 Phase 1 – Relocate Kearney Trecker Mill (Revised October 15, 2015), dated October 15, 2015
NCS-2015-133, Safety Concern Analysis for D2W Corner Cluster Extending off the Back of a Universal Transport Cart (CA201501573), dated November 2, 2015
NCS-2015-138, dated November 19, 2015
NCS-2015-140, dated November 16, 2015
NCS-2015-148, Safety Concern Analysis for Improper NCS Analysis, NMC Met Lab Room, CA201501781, dated November 23, 2015
NCS-2015-149, NCS Safety Analysis Revisiting the Safety Basis for the Met Lab NMC Room per CR-1045404, dated November 23, 2015
NCS-2015-157, dated January 11, 2016
NCS-2015-160, dated December 16, 2015
NCS-2015-075, Information on All-Flo Pump Model PE-10, Rev. 0, dated July 21, 2015
NCS-2016-003, NCS Violation & Observation Summary – 4th Quarter 2015, Rev. 0, dated February 2, 2016
NCS-2016-006, NCS Safety Analysis Report for Rev. to Recovery Liming Enclosure
NCS Posting and Associated SAR Updates (CA201600084) (CR-1045526), dated January 26, 2016
Root Cause Package for Cold Side MET Lab Fire
RPTWR Number 04-021, Evaluation of a Glovebox Fire to Environmental and Occupational 10CFR70.61 Limits (SAR 15.33)
RPTWR Number 05-017, Revision 2, Risk Assessment of Severity of Radiological Consequence for Fires and Spills Involving Radioactive Materials Under License SNM-42

RPTWR Number 04-020, Evaluation of a Glovebox Fire to Environmental and Occupational 10CFR Limits Bay 13A Dry Processes (SAR 15.18)
SAR 15.22, RTRT (Research Test Reactor and Targets) Fuel Powder and Compact Process, Rev. 76, dated December 18, 2015
SAR 15.26, Rev. 76, dated September 18, 2015
Semi-Annual Effluent Monitoring Report for reporting period June 29, 2015 to January 3, 2016, dated February 29, 2016
SER 12-028, Phase 1 and Phase 2 Folders (mass records)
SER 16-008 Phase 01 – Temporary Nitric Acid Use from Tanker Car, dated March 12, 2016
SER 16-008 Phase 01 – Temporary Nitric Acid Use from Tanker Car, dated March 14, 2016 (Addl. Info)
Various M11-P-029 Forms, dated February 29, 2016

Procedures:
15-0016, Radiation Work Permit, Rev. 0
15-0028, Radiation Work Permit, Rev. 1
15-0065, Radiation Work Permit, Rev. 0
16-0007, Radiation Work Permit, Rev. 0
16-0008, Radiation Work Permit, Rev. 1
E 41-25, Operating Instructions for the Drum Counter, Rev.38
E 41-90, Sampling and Analysis of Low Level Radioactive Waste Solids, Rev. 20
E 46-56, Training for NDA Systems Operators
E 46-78, Initial Set-up and Calibration of NMC NDA Systems, Rev. 9
E 46-77, Preparation of u 235 Standards for NMC Measurement Systems, Rev. 9
E 46-79, Operation of Well Counter Systems, Rev. 21
EP-321, Sampling, Analysis, Reporting, and Release of Retention Tanks for Dynamic Inventory, Rev. 21
EP-719, Super Compactor Operations, Rev. 14
EP-722, Waste Preparation Area, Rev. 6
EP-723, Mixed Waste Storage Area, Rev. 4
EP-905, Job Training Qualification Exam for Waste Operations Personnel, Rev. 3
EPR-02-03, Radiological Procedure for an Unannounced Sounding of the Howlers, Rev. 12
EPR-02-07, Emergency Shutdown of Facility, Rev. 6
EPR-03-05, Management of Fire Water System, Rev. 6
EPR-03-19, Estimation of Off-Site Dose from a Release of Radioactive Material, Rev. 12
EPR-05-01, Post Incident Reviews, Rev. 12, dated November 30, 2015
EPR-06-02, Mt. Athos Site Emergency Plan Distribution, Rev. 14
EPR-06-06, Annual Emergency Plan Review, Rev. 9
EPR-06-07, Plant Evacuation Drill, Rev. 7
HS-03-02, Fire Prevention, Rev. 7
HS-03-08, Employee Fire Response and Firefighting, Rev. 5
HS-ET-003, Monthly Inventory and Maintenance of Emergency Response Vehicles, Rev. 9
HS-FP-006, Portable Fire Extinguishers Inspection, Rev.12
HS-OP-004, Quarterly General Safety Audit, dated November 10, 2015
HS-OP-013, Use of Barcode System (FMS), Rev. 6
OP-0006505, Arc-Melting HEU Aluminide, Rev. 6
OP-0010201, Rev. 59

Op-1027271, Operating Procedure for Low Level Radioactive Waste Loaders Training/Testing (U), Rev. 2
OP-0021001, Rev. 80
OP-0061141, Low Level Leach Hood Operation, Rev. 63
OP-0061161, Training of Uranium Processing Operators, Rev. 10
OP-0061556, Recovery Conversion Furnace Operation, Rev. 13
OP-0061234, Maintenance in UPRR, Rev. 50
OP-1001828, FAS Interlocks and Furnace Testing, Rev. 31
QWI 2.2.1, Preparation of Quality System Procedures, Instructions, and Other Documents, Rev. 17
QWI 14.1.1, Preventive/Corrective Action System, Rev. 31
QWI 18.1.3, On-the-Job Training, Rev. 6
RMS-21, Classification, Characterization, Packaging and Preparation of Low Level Radioactive Waste and Mixed Waste, Rev. 20
RMS-22, Low Specific Activity Shipments, Rev. 10
RMS-23, Low Level Radioactive Waste Administrative Procedure, Rev. 11
RP-02, Contamination Control, Rev. 10
RP-03-000, External Radiation Exposure Control, Rev. 13
RP-06, Radiation Work Permits, Rev. 13
RP-06-000, Radiation Work Permit, Rev. 13
RP-06-001, Radiation Protection Responsibilities of a Radiation Work Permit, Rev. 12
RP-07-000, Control and use of Instrumentation, Rev. 6
RP-07-022, Eberline RO-20 Ion Chamber Calibration and Operation, Rev. 13
RP-07-060, Calibration of the Magellan Weather Station, Rev. 3
RP-07-057, General Procedure for Calibration and Control of Radiation Protection Instrumentation, Rev. 21
RP-07-079, Calibration and Operation of the Canberra In-Line Liquid Waste Monitors, Rev. 7
RP-14-000, Area Postings, Labels, and Precautionary Measures, Rev. 7
RP-15-000, Control and use of Sealed Radioactive Sources, Rev. 6

Condition Report written as a result of inspection activities:
CA201600110, CA201600107, CA201600258, CA201600298, COM57157

Condition Reports:
CA201500136, CA201500192, CA201500942, CA201500948, CA201500952, CA201501175, CA201501184, CA201501318, CA201501336, CA201501380, CA201501498, CA201501541, CA201501583, CA201501588, CA201501658, CA201501668, CA201501728, CA201501743, CA201501781, CA201501793 CA201501852, CA201501878, CA201501898, CA201510573, CA201600006, CA201600013, CA201600024, CA201600037, CA201600052, CA201600062, CA201600063, CA201600083, CA201600084, CA201600129, CA201600153, CA201600156, CA201600260, CA 201600285, CA 201600288
COM55282, COM55283, COM55286, COM55880, COM55881, COM55582, COM55883, COM55888, COM55889, COM55890

Work Orders:
20194418, 20194419, 20194420, 20195749, 20192743, 20193164, 20193445, 20193473, 20193612, 20194209, 20194250, 20194274, 20194587, 20194818, 20194946, 20195033, 20195688, 20195791, 20195964, 20195980, 20195991, 20196077, 20196130

Other Documents:
15AD21_1001, Annular Waste Tank P&ID
AAF International, VariCel II Tech Spec Sheet on Filters
Chapter 7 of the License Application, Fire Safety
Change Request CR-1029340, dated March 14, 2016
Change Request CR-1045742-00, dated March 12, 2016
DFFI 704 Event Evaluations
LP4141 E, Tank Farm Nitric Acid Isometric Piping Riser Diagram, Rev. 4
N-79, Evaluation of Unusual Incidents for CA201600013, Rev. 79
N-554, Critique Minutes for CA 201600013, Rev. 4
NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilation Systems, 2015 Edition
NFPA 91, Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids, 2015 Edition
NFPA 801, Standard for Fire Protection for Facilities Handling Radioactive Materials, 2014 Edition
Pre-Fire Plan, dated June 17, 2015
Posting 15-12-005
Posting 15-26-005, Rev. 3
QWI 2.1.3, Integrated Safety Analyses Methodology, Rev. 14
QWI 14.1.1, Preventive/Corrective Action Systems, Rev. 31
SAR 15.5, High Level Dissolution in Process Uranium Recovery, Rev. 67
SAR 15.6, Low Level Dissolution in Process Uranium Recovery, Rev. 67
SAR 15.9, Main Extraction and Drum Dryer Processes in Uranium Recovery, Rev. 97
SAR 15.25, Furnace Process Recovery Operation, Rev. 36, dated October 19, 2015
SAR 15.25, Furnace Process Recovery Area Appendix A, dated July 14, 2015
SAR 15.28, Metallographic Laboratories, Rev. 46, dated January 20, 2016
Technical Bulletin UL 900 and UL 586
UPRR 30116, Annular Waste Tank P&ID