



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

January 28, 2016

EA-2015-021
EN 50776

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 70-27/2015-005 AND
NOTICE OF VIOLATION**

Dear Mr. Burch:

This letter refers to the inspections conducted from October 1 through December 31, 2015, 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 October 8, 2015, October 28, 2015, and January 7, 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.

The NRC has concluded that information regarding: (1) the reason for the violation(s); (2) the corrective actions that have been taken and the results achieved; and (3) the date when full compliance will be (was) achieved is already adequately addressed on the docket in the enclosed NRC Inspection Report 70-27/2015-005. Therefore, you are not required to respond

to this letter unless the description herein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

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 70-27/2015-005
w/Attachment: Supplementary Information

cc: (See page 3)

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Sincerely,
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Eric C. Michel, Chief
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DATE	1/25/2016	1/26/2016	1/28/2016	1/26/2016	1/25/2016	1/25/2016	1/26/2016	1/26/2016	1/26/2016
E-MAIL COPY	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

cc:

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NOTICE OF VIOLATION

BWXT Nuclear Operations Group, Inc.
Lynchburg, Virginia

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

During an NRC inspection conducted October 5 through October 8, 2015, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR 70.62 (d) requires, in part, "The management measures shall ensure that engineered and administrative controls and control systems that are identified as items relied on for safety pursuant to 10 CFR 70.61(e) of this subpart are designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed, to comply with the performance requirements of 10 CFR 70.61 of this subpart."

Contrary to the above, on September 3, 2015, the licensee failed to implement adequate management measures to ensure that the Container Storage Facility (CSF) wet-pipe sprinkler system, identified as an IROFS, was maintained to ensure the system was available and reliable to perform its function when needed, to comply with the performance requirements of 10 CFR 70.61. Specifically, the CSF sprinkler system was in a degraded state for approximately 30 minutes due to the concurrent testing of the fire pumps and an existing system impairment that had already isolated part of the fire/service water loop from its water source.

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

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance will be achieved, are already adequately addressed on the docket in the enclosed inspection report. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it 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 Senior Resident Inspector, Stephen Subosits, at the BWXT Nuclear Operations Group facility, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or in 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>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

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

Dated this 28th day of January 2016

Enclosure 1

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 70-27

License No: SNM-42

Report No: 70-27/2015-005

Licensee: BWXT

Facility: Nuclear Operations Group (NOG)

Location: Lynchburg, VA 24505

Dates: October 1 through December 31, 2015

Inspectors: S. Subosits, Senior Resident Inspector, RII/DFFI/PB2
B. Adkins, Senior Fuel Facility Projects Inspector, RII/DFFI/SB
R. Gibson, Senior Fuel Facility Projects Inspector, RII/DFFI/SB
D. Anderson, Fuel Facility Inspector, RII/DFFI/SB
P. Glenn, Fuel Facility Inspector, RII/DFFI/PB2
J. Munson, Fuel Facility Inspector, RII/DFFI/SB
N. Peterka, Fuel Facility Inspector, RII/DFFI/SB
T. Sippel, Fuel Facility Inspector, RII/DFFI/SB
K. Womack, Fuel Facility Inspector (In Training), RII/DFFI/SB

Approved by: E. Michel, Chief
Projects Branch 2
Division of Fuel Facility Inspection

EXECUTIVE SUMMARY

BWXT Nuclear Operations Group
NRC Integrated Inspection Report 70-27/2015-005
October 1 – December 31, 2015

Inspections were conducted by the senior resident inspector 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 and A.2)
- The Nuclear Criticality Safety (NCS) program was properly implemented and maintained in order assure that credible 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.3)
- 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.4)
- One Severity Level IV violation of NRC requirements was identified with regard to the site's fire protection program. (Section A.5)

Radiological Controls

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

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 reviewed were 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)

- The graded biennial emergency drill was implemented in accordance with the Emergency Plan and regulatory requirements. (Section C.6)

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 (IP) 88135.02)

a. Inspection Scope and Observations

The inspectors performed routine tours of the fuel manufacturing areas housing special nuclear material (SNM), reviewed shift turnover log sheets, and observed one shift turnover exchange in UR. The inspectors interviewed operators, front-line managers (FLMs), 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 four operators, three FLMs, and three nuclear materials control (NMC) 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 interviewed two RP technicians and verified through those interviews that they demonstrated adequate understanding of RP survey techniques.

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

b. Conclusion

No violations of NRC requirements were identified.

2. Safety System Walk-down (IP 88135.04)

a. Inspection Scope and Observations

The inspectors performed a walk-down of a safety-significant system involved with SNM operations. As part of the walk-down, inspectors reviewed the NCS postings associated with Bay 17 Operations. 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 Integrated Safety Analysis (ISA) / Safety Analysis Report (SAR) 15.33 for the Bay 17 Operations. During the walk-downs, the inspectors verified the following as appropriate:

- Controls in place for potential criticality, chemical, and fire hazards;
- Process gloveboxes and storage locations were constructed and maintained in accordance with Nuclear Criticality Safety Evaluations (NCSEs);
- Electrical power availability;
- Adequate lighting in and around equipment; and
- Hangers and supports correctly installed and functional.

b. Conclusion

No violations of NRC requirements were identified.

3. Nuclear Criticality Safety (IP 88015 and IP 88135.02)

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 - one in the Chemistry Laboratory in UR and one in the Metallurgical Laboratory area. 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 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 (listed in Section 4.0 of the Attachment) to determine whether criticality safety of risk-significant operations was assured through engineered and administrative controls, with adequate safety margin, preparation and review by qualified staff. 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 reviewed training for four nuclear criticality safety engineers and four operators. The inspectors interviewed licensee criticality engineers, the NCS manager, multiple operators, and several other engineers regarding evaluations, operations, equipment and controls. For selected systems, the inspectors reviewed the NCS evaluations and related IROFS to determine whether the performance requirements were met for selected accident sequences.

The inspectors accompanied an NCS engineer on a weekly walk down and observed the inspection. The inspectors noted that the walk down was performed by a qualified NCS engineer who reviewed the adequacy of control implementation; reviewed procedures and postings; interviewed area operators and management; and examined equipment and operations to verify that past evaluations remained adequate. The inspectors also reviewed the weekly inspection forms for the past two months and the schedule of weekly inspections to verify that the licensee was auditing all areas as required and to verify that backshift and weekend inspections were being performed as required. The

inspectors reviewed the licensee response to a selection of recent internally-reported events identified in Section 4.0 of the Attachment. The inspectors interviewed licensee staff and observed that the events were investigated in accordance with procedures and corrective actions were assigned and tracked as required.

The inspectors interviewed the licensee engineer responsible for the Criticality Accident Alarm System (CAAS) in the Lynchburg Technology Center (LTC); and walked down the system with the responsible engineer. The interview focused on the detector placement, reliability and testing, system logic, and procedures for imposing compensatory measures when the CAAS is out of service. The inspectors reviewed records of CAAS tests to verify that the licensee was adequately maintaining the CAAS reliability.

The inspectors performed plant walk downs in UR, RTRT facility, Specialty Fuels Facility (SFF), Bay 17, and the Pharmacy to determine whether risk-significant fissile material operations were being conducted safely and in accordance with regulatory requirements. The inspectors interviewed operations staff and NCS engineers as appropriate before and during walk downs. The inspectors verified that controls identified in NCS analyses reviewed were installed or implemented and were adequate to ensure safety.

b. Conclusion

No findings of significance were identified.

4. Fire Protection Quarterly (IP 88135.05)

a. Inspection Scope and Observations

During daily plant tours, the inspectors verified that transient combustibles were being adequately controlled and minimized in Bays 1-10, Bay 17, Container Storage Facility Railcar Storage Building, MM Building, LTC and Waste Operations / Laundry. The inspectors conducted fire safety tours of these areas and reviewed the fire detection and suppression capabilities in those areas. No compliance or regulatory issues were noted with respect to fire protection equipment. The inspectors also verified that housekeeping in the areas reviewed was sufficient to minimize the risk of fire. On October 17, 2015, the inspectors observed fire brigade training and drills at the facility's fire station. The drills tested key firefighting skills and instruction was provided on proper techniques for donning firefighting gear.

b. Conclusion

No violations of NRC requirements were identified.

5. Fire Protection Annual (IP 88055)

a. Inspection Scope and Observations

The inspectors reviewed BWXT procedures and toured plant areas containing safety controls and 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 hot work permit program was implemented in accordance with approved procedures.

The inspectors reviewed records and interviewed BWXT 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. In addition, the inspectors determined that fire hoses, portable extinguishers, and Class D Metal powder were provided at their designated locations and access was unobstructed.

The inspectors reviewed the licensee's corrective action program (CAP) entries for the past 12 months and determined that BWXT identified safety control or IROFS fire protection operability problems at an appropriate threshold and entered them into the CAP. Also, the inspectors evaluated the corrective actions associated with a sample of the CAP entries and determined that the completed corrective actions were adequate.

Based on field observations and discussions with licensee personnel, the inspectors determined that firefighting vehicles and supplies were adequately maintained and available for use. Firefighting vehicles were observed to be stocked with appropriate equipment and supplies. Personnel protective equipment for emergency response personnel was available for use and adequately maintained.

Material condition and operability of the fire protection system primary and secondary pumps were reviewed by the inspectors. Based on field observations, review of records and interviews with licensee personnel, the inspectors determined that the pumps were tested and maintained in accordance with approved procedures and available for use if called upon. Licensee personnel responsible for the performance of routine pump operability tests were knowledgeable of the testing requirements. No equipment issues were noted.

The inspectors reviewed the BWXT fire protection system out-of-service records and observed out-of-service equipment and determined that, with the exception of the item described below, adequate compensatory measures had been put in place for out-of-service, degraded, or inoperable fire protection equipment, systems, or features.

Inadequate Management Measures for Sprinkler System IROFS

Introduction: The inspectors identified a self-revealing cited Severity Level IV Violation of 10 CFR 70.62 (d) for the licensee's failure to ensure adequate management measures were in place to ensure IROFS were available and reliable to perform their function when needed. Specifically, adequate measures regarding maintenance activities were not in place to ensure the IROFS sprinkler system in the Container Storage Facility (CSF) was available and reliable to perform its intended safety function if called upon.

Description: On September 3, 2015, the BWXT site experienced a loss of fire/service water for approximately thirty minutes, which affected key processing buildings and the LTC. The loss of firewater resulted in the degradation of a sprinkler system located in the CSF, Building JJ. The sprinkler system is credited as an active engineered control IROFS for a NCS accident sequence involving a postulated fire.

The BWXT site currently employs a combination fire/service water system utilizing 10 and 12-inch water supply lines each supplied by a respective service water tank, which combine to form a fire/service loop around the site. The two, one million gallon service water tanks are located at a higher elevation than the plant and LTC, and are capable of supplying the required system pressure and flow on elevation alone for both service water and postulated firewater demands.

The licensee maintains two diesel driven fire pumps in manual mode should the need arise to supplement the normal system pressure and flow provided by the service water tanks. The pumps are run weekly, one at a time for 30 minutes each. To minimize the possibility of a water hammer to the fire/service water system during testing, the system is aligned to recirculate back to their respective service water tank. By recirculating back to the tanks, the supply of water to the respective water supply line is temporarily interrupted for approximately 30 minutes while the pump is run. Under normal conditions, the fire/service water loop would still be supplied by the other service water tank and associated supply line during the weekly testing.

On September 3, 2015, at approximately 0750, the licensee had begun to isolate part of the 10-inch fire/service water line in order to make repairs on an 8 inch branch line that had been leaking. The licensee had implemented a fire protection system impairment for the work, which was maintained and implemented by the Industrial Health and Safety (IH&S) group. Proper notifications were made prior to the repair beginning. Coinciding with the work on the 10-inch fire/service water line, IH&S Technicians began the weekly diesel fire pump runs. Following the run of the secondary pump, which isolated the 10-inch line for testing, the primary pump was run starting around 0910 and the 12-inch line was isolated for recirculation to its tank. During the primary pump run, the licensee began receiving reports from around the facility about a loss of water. The licensee activated their Emergency Operations Center (EOC) 0956 and began to investigate the loss of water. The primary pump run was completed around 0940 and the 12-inch line returned to service shortly thereafter re-establishing water to the site.

Analysis: 10 CFR 70.62(d) states, in part, that “management measures shall ensure that engineered and administrative controls and control systems that are identified as items relied on for safety pursuant to 70.61(e) of this subpart are designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed, to comply with the performance requirements of 10 CFR 70.61 of this subpart.

The inspectors determined that the management measures the licensee had in place did not ensure the CSF sprinkler system IROFS would remain available and reliable. As a result, testing or maintenance could be conducted onsite that adversely impacted the fire/service water system without the proper notifications or evaluations being performed.

The noncompliance is more than minor based on the screening criteria question #7 of Inspection Manual Chapter 0616 Appendix B, which asks, in part, "Does the noncompliance adversely affect the ability of an IROFS or safety related component to perform its intended safety function?" Specifically, the loss of fire/service water resulted in the IROFS sprinkler system becoming degraded and, if called upon, it would not have been able to perform its intended safety function in the event of a fire in the CSF.

The inspectors determined that the performance requirements of 10 CFR 70.61 were still met due to additional administrative controls in place for control of ignition sources in the CSF (considered the initiating event) and operator use of fire extinguishers. Because no fire occurred, there was no actual safety consequence due to the temporary loss of the sprinkler system. Given the duration for which the CSF wet-pipe sprinkler system was in a degraded state, approximately 30 minutes, and the remaining safety controls in place, it was determined the potential safety consequence from a fire was low on September 3, 2015. As a result, the noncompliance identified was a failure to ensure compliance with 10 CFR 70.62(d), management measures. 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: 10 CFR 70.62(d) requires, in part, "The management measures shall ensure that engineered and administrative controls and control systems that are identified as items relied on for safety pursuant to §70.61(e) of this subpart are designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed, to comply with the performance requirements of 10 CFR 70.61 of this subpart."

Contrary to the above, on September 3, 2015, the licensee failed to implement adequate management measures to ensure that the CSF wet-pipe sprinkler system, identified as an IROFS, was maintained to ensure the system was available and reliable to perform its function when needed, to comply with the performance requirements of 10 CFR 70.61.

As a result, the CSF sprinkler system was in a degraded state for approximately 30 minutes due to the concurrent testing of the fire pumps and an existing system impairment that had already isolated part of the fire/service water loop from its water source. The loss of the CSF sprinkler system did not result in an actual safety consequence to the facility.

The licensee's immediate corrective actions to restore compliance following the loss of the fire/service water involved an inspection of the CSF sprinkler system and other select systems to verify proper pressure and valve alignment. The licensee initiated a root cause investigation under CA 201501380 and as an interim action placed the weekly fire pump testing under the impairment process until final corrective actions are in place.

The licensee's long term corrective actions to prevent recurrence of the violation included the following: (1) a review of the site fire/service water system for common mode and single point failures; (2) evaluation of the addition of a clarifying statement in the plant emergency procedures for personnel to consider the potential impact of existing fire impairments during an emergency situation; (3) revision of annual fire pump

flow test procedure to add clarifying statements for review of the potential impact the test could have on the facility prior to performing it; and (4) issue a lessons learned report following completion of the corrective actions. The proposed corrective actions are expected to be completed by the middle of 2016. Following completion, the corrective actions implementation will be reviewed for adequacy by either regional inspectors or the Senior Resident Inspector.

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. The failure to provide adequate management measures for the CSF sprinkler system IROFS is a Severity Level IV violation of NRC requirements and will be tracked as VIO 70-27/2015-005-01, "Inadequate Management Measures for Sprinkler System IROFS."

b. Conclusion

One Severity Level IV violation of NRC requirements was identified.

B. Radiological Controls

1. Radiation Protection Quarterly (IP 88135)

a. Inspection Scope and Observations

The inspectors toured the UR, Filler, and RTRT 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 also verified plant employees performed exit monitoring at the UR controlled area exit.

The inspectors reviewed one radiological work permits (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 and wore the required personal protective equipment.

b. Conclusion

No violations of NRC requirements were identified.

C. Facility Support

1. Post Maintenance Testing (IP 88135.19)

a. Inspection Scope and Observations

The inspectors observed two post-maintenance test (PMT) activities in UR. The inspectors witnessed performance of a post-maintenance leak test on a pump in the High Level Dissolver (HLD) system. No evidence of leaks were found and, as a result,

the PMT acceptance criteria were met. The inspectors also witnessed maintenance personnel perform troubleshooting and replacement of a level switch in the HLD system. The level switch passed the PMT after several iterations of troubleshooting. The inspectors also reviewed ten completed equipment breakdown work orders (WOs).

b. Conclusion

No violations of NRC requirements were identified.

2. Surveillance Testing (IP 88135.22)

a. Inspection Scope and Observations

The inspectors observed preventive maintenance (PM) surveillance tests on the high liquid level probe sensor for an Annular Raffinate Waste Tank in the UR area. The PM activity was completed and met the acceptance criteria in the WO instructions. The inspectors also reviewed associated work instructions for seven preventive MPs and verified they contained adequate guidance.

b. Conclusion

No violations of NRC requirements were identified.

3. Management Organization and Controls (IP 88135)

a. Inspection Scope and Observations

The inspectors reviewed a sample of 49 items entered into the licensee's 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." The inspectors reviewed the summary documents of the routine RP audits and routine NCS audits for the third quarter of 2015.

b. Conclusion

No violations of NRC requirements were identified.

4. Permanent Plant Modifications (IP 88135.17)

a. Inspection Scope and Observations

The inspectors reviewed a sample of risk significant plant modifications from the first eight months of 2015. Specifically, the inspectors evaluated the impacts to associated

IROFS and ISA accident sequences in the selected modifications. The inspectors reviewed in detail the licensee's CR documentation regarding the revisions to NCS postings for UR columns and annular tanks; updates to the Low Level Dissolver (LLD) safety basis; and revisions to accident scenarios for a furnace in the RTRT controlled area. 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 the IROFS. In addition, the inspectors reviewed updates and changes to the ISA/SAR and procedures that were affected by the modifications.

The inspectors also reviewed twenty other 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 the impacts of modifications to the ISA/SAR.

The inspectors attended two Change Review Board (CRB) meetings 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 adequate to prevent recurrence of issues.

b. Conclusion

No violations of NRC requirements were identified.

5. Emergency Preparedness (IP 88050)

a. Inspection Scope and Observations

The inspectors interviewed staff and reviewed records and determined that any changes made to the Emergency Plan or within the facility had been properly coordinated within the Emergency Preparedness program. The inspectors reviewed procedures with significant revisions since the last emergency preparedness inspection and determined that the changes were in compliance with the Emergency Plan. The inspectors discussed and reviewed the licensee emergency call list and verified that the list was current.

The inspectors reviewed Emergency Management Organization and Emergency Team training records and interviewed licensee staff regarding emergency preparedness training in the past year. The inspectors determined that the training requirements were in compliance with the Emergency Plan. The inspectors verified that the licensee provided training for their personnel and testing of emergency equipment as required by the Emergency Plan. Inspectors confirmed that the individuals responsible for utilizing the emergency equipment were qualified. The inspectors verified that the licensee

provided training for hypothetical emergency situations which were effective and consistent with the frequency and performance objectives required in the Emergency Plan.

The inspectors reviewed the written agreements with the off-site agencies and verified that the organizations, required by the Emergency Plan, had up-to-date mutual aid agreements and a Memorandum of Understanding. The inspectors interviewed representatives of the Concord Volunteer Fire Department and Concord Rescue Squad and determined that they maintained an adequate understanding of the written agreements. The inspectors interviewed off-site personnel and reviewed records and verified that the licensee invited the off-site agencies for training as required by the Emergency Plan and determined that the training given was appropriate. The inspectors reviewed records and verified that the licensee performed communication checks with the off-site organizations at a quarterly frequency as required by the Emergency Plan.

The inspectors observed the storage of the emergency equipment in the EOC, the Alternate EOC, the off-site EOC (at the Concord Volunteer Fire Department), the Site Fire Station, the Command Vehicle and the E-Team Van, and verified that the inventory levels were maintained as required by the Emergency Plan. The inspectors performed a check of selective items of emergency response equipment and verified functionality. The inspectors also verified that the required maintenance and testing of the emergency response equipment were conducted at the required frequency. The inspectors toured the EOC and the Alternate EOC and verified that the areas were readily accessible and maintained the appropriate amount of communication equipment. The inspectors reviewed the accountability procedure and verified that accountability meeting points were accessible.

The inspectors reviewed independent audits of the emergency program and verified that any problems or deficiencies associated with the Emergency Plan were corrected. The inspectors reviewed the self-assessments generated since the last inspection and verified that the licensee utilized their tracking system for adequately tracking and resolving self-assessment findings.

b. Conclusion

No violations of NRC requirements were identified.

6. Evaluation of Exercises and Drills (IP 88051) / Emergency Preparedness Drill (IP 88135)

a. Inspection Scope and Observations

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 during the drill and verified that the licensee had not pre-staged equipment in anticipation of the exercise.

The inspectors observed and evaluated the licensee graded biennial exercise conducted on October 28, 2015. The scenario involved an operator induced crane accident following a medical emergency and subsequent chemical fire. The scenario also

involved the potential threat of an imminent criticality and a separate fire involving a vehicle at the LTC.

At the initiation of the emergency drill, the inspectors verified that the licensee assessed the accident scenario, analyzed the plant conditions, and adequately classified the event. The event was initially classified as an Alert and later elevated to a Site Area Emergency in accordance with the Emergency Plan. The inspectors observed the activation of the EOC and the Emergency Response Organization (ERO) and noted that all required positions were fully staffed. The necessary personnel were dispatched to scenes in accordance with the Emergency Plan and implementing procedures. The inspectors verified that the initial off-site notifications were within the time period specified in the Emergency Plan and contained the required information.

The inspectors observed members of the licensee's ERO assemble at the designated assembly area and the arrival of the off-site emergency responders including licensee's fire responders. The inspectors observed the emergency response team's activities for the injured victim including radiological surveys of the victim prior to transport to off-site medical facilities, the assessment of the affected area, and response to additional emerging situations. 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 lessons learned and areas of improvement. The inspectors verified that the licensee initiated documentation of items discussed after the emergency exercise in the corrective action program.

b. Conclusion

No violations of NRC requirements were identified.

D. Other Areas

1. Follow-up on Previously Identified Issues

a. Violation (VIO) 70-27/2015-007-01: Unanalyzed Condition in the Low Level Dissolver

In this violation the licensee had failed to properly analyze a credible abnormal condition that could potentially lead to criticality and assure subcriticality of clean-out activities involving dry waste handling in the uranium recovery area, specifically the LLD. This failure resulted in the facility being in a state that was not analyzed in the licensee's ISA, and where credited IROFS were not sufficiently available and reliable to prevent criticality.

The inspectors walked down the LLD, interviewed an operator, reviewed procedures, postings, corrective actions, a work order, relevant portions of the ISA documentation, and NCS evaluations. The inspectors verified that the licensee had added an accident sequence to the ISA to cover the clean out operation that takes place in the LLD. The

inspectors also verified the licensee had established IROFS for this sequence to ensure that the risk of a criticality is rendered highly unlikely. These IROFS include a passive geometry control on the horizontal dimensions of the drip tray, an upstream administrative control on the concentration of material being processed, and bi-monthly and semi-annual inspection and clean out of the drip tray to prevent the accumulation of too much material. Controls and procedures for removing the material from the drip tray have been revised to ensure that an unsafe volume will not be accumulated during the clean out. The relevant operating procedure, OP-0061141, "Low Level Leach Hood Operation," has been revised clearly require the use of safe geometry scoops that are emptied directly into a safe geometry poly packs. The inspectors interviewed an operator, reviewed the implementing work order for the survey, and observed a demonstration of how operators use a portable radiation detection instrument to survey for high U-235 mass material before beginning the clean out. The operators must obtain approval from NCS after providing the NCS the survey results and prior to performing the LLD clean out.

The licensee is conducting supplemental process hazard analyses (PHAs) focusing on maintenance activities (including cleanouts, calibrations, etc) to identify similar unanalyzed accident sequences. The licensee has conducted additional training for staff involved in these analyses and revised procedures to ensure that additional attention is paid to maintenance activities. These requirements include strengthened requirements for maintenance staff participation in the PHA and procedural clarification that instructs the PHA team to consider maintenance activities. A PHA team is working through several of the old PHAs and documenting recommended improvements in the licensee's corrective action program. The licensee's ongoing PHA improvement effort has not identified any sequences that should have been included in the ISA.

This item is considered closed.

b. VIO 70-27/2015-007-02: Failure to Report an Unanalyzed Condition in the LLD

On January 27, 2015, and during a previous inspection the inspectors determined that the abnormal condition created by the LLD catch tray clean-out activity was an unanalyzed condition and that compliance with the performance requirements of 10 CFR 70.61 was not maintained. Cognizant licensee staff were aware of the condition in the LLD catch tray, but failed to properly evaluate the condition and determine that the condition was required to be reported in accordance with 10 CFR 70 Appendix A (b)(1), which requires, "[a]ny event or condition that results in the facility being in a state that was not analyzed, was improperly analyzed, or is different from that analyzed in the Integrated Safety Analysis, and which results in failure to meet the performance requirements of 10 CFR 70.61" be reported to the NRC Operations Center within twenty-four hours of discovery. The licensee's immediate corrective action was to submit a report to the NRC, Event Notice (EN) 50776, as required by 10 CFR Part 70 Appendix A (b)(1).

The licensee conducted a read-and-sign training to clarify to the cognizant licensee staff the requirements and expectations for reporting such unanalyzed events. The text of the training focused on reminding licensee staff that only IROFS documented in the ISA can be credited for Appendix A reporting, not the licensee staff's assessment of the risk of

the “as found” condition. The licensee also revised QWI 14.1.10, “Safety Evaluation of Unusual Incidents,” to better flowdown the requirement of the regulation to use IROFS in the ISA when making reportability determinations.

This item is considered closed.

c. Inspector Followup Item (IFI) 70-27/2015-008-03: Root Cause Analysis Follow-up

On September 19, 2015, the licensee submitted a report to the NRC (EN 51411) of an event involving an exceedance of interstitial moderation limits within a process glovebox located in the SFF. The details of this event and subsequent inspection are described in NRC inspection report 70-27/2015-008 (ML15295A206). At the close of the inspection, the licensee had not yet completed their root cause analysis. An IFI was opened (IFI 70-27/2015-008-003) in order for inspectors to review the licensee’s root cause analysis once complete.

The licensee issued their final root cause investigation report on October 30, 2015, which was provided to the NRC. The report detailed several causal factors, root causes, error precursors, and latent organizational weaknesses. Additionally, the licensee detailed information related to the root causes of the event and associated corrective actions in a letter dated November 20, 2015 (ML15338A078).

The inspectors reviewed the licensee’s root cause investigation. No findings of significance were identified. This item is considered closed.

E. Exit Meeting

On October 8, 2015, October 28, 2015, and January 7, 2016, the inspectors presented the inspection results to B.J. Burch and members of the 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

<u>Name</u>	<u>Title</u>
B.J. Burch	Vice President and General Manager
K. Conway	Unit Manager, Radiation Protection
N. Coles	Front Line Manager, Specialty Fuels Facility
T. Stinson	Unit Manager, Waste Treatment Operations
D. Spangler	Section Manager, Nuclear Safety and Licensing
C. Terry	Unit Manager, Licensing and Safety Analysis
D. Faidley	Unit Manager, Nuclear Criticality Safety
K. Kirby	Front Line Manager, Nuclear Materials Control
L. Ragland	Unit Manager, Uranium Processing and Research Reactors
H. Shaffer	Dept. Manager, Uranium Processing and Research Reactors
D. Ward	Dept. Manager, Environmental, Safety Health and Safeguards
C. Yates	Section Manager, Uranium Processing and Research Reactors
R. Johnson	Licensing Engineer
R. Simmons	Licensing Engineer
M. Edstrom	Fire Protection Engineer
J. Calvert	Unit Manager, Industrial Health and Safety

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

70-27/2015-005-01	VIO	Inadequate Management Measures for Sprinkler System IROFS (Paragraph A.4)
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Closed

70-27/2015-007-01	VIO	Unanalyzed Condition in the LLD (Paragraph D.1.a)
70-27/2015-007-02	VIO	Failure to Report an Unanalyzed Condition in the LLD (Paragraph D.1.b)
70-27/2015-008-03	IFI	Root Cause Analysis Follow-up (Paragraph D.1.c)

3. LIST OF INSPECTION PROCEDURES USED

88015	Nuclear Criticality Safety
88050	Emergency Preparedness
88051	Evaluation of Exercises and Drills
88055	Fire Protection Annual
88135	Resident Inspection Program For Category I Fuel Cycle Facilities
88135.02	Resident Inspection Program Plant Status Activities

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:

Fire Modeling and Rack Storage Analysis for the Container Storage Building, dated July 25, 2007

HS-03-10-01, Fire Protection Impairment Report, Revision (Rev.) 03, #15-026

HS-2015-074, 2015 Hydrant Pressure Reading Date Collection, dated July 5, 2015

HS-2015-182, Fire Pump Test – 2014, dated December 10, 2014

HS-2012-036, Fire Protection Evaluation, dated January 17, 2013

HS-2015-104, Pump Test, Squad 18-1, dated September 10, 2015

HS-2015-051, Pump Test Engine 18-1, 1997 Pierce, dated April 6, 2015

NCS-1995-052, “NCS Evaluation of the General Purpose Area,” dated August 24, 1995

NCS-1997-090, “Nuclear Criticality Safety Evaluation for an Upgraded Criticality Detection and Monitoring System at LTC: SER 97-10,” dated March 7, 1997

NCS-2000-096, “Modifying NCS Postings,” dated March 10, 2000

NCS-2001-240, “NCS Analysis to Simplify Desiccator Postings,” dated August 15, 2001

NCS-2003-113, “Nuclear Criticality Safety Analysis Supporting Phases 3, 4, and 5 of SER 03-033, “Centrifugal Contactor System,”” dated July 15, 2003

NCS-2004-278, “NCS Analysis for Modification of the Hot Cell Criticality Detectors: SER 05-007 Phase 1,” dated February 8, 2005

NCS-2005-156, “NCS Release Supporting Phase 1 of SER 04-060,” dated June 14, 2005

NCS-2013-039, “NCS Safety Analysis Supporting the LEU Fuel Fabrication Line Disassembly and Removal per SER 13-006 Phase 1,” dated March 5, 2015

NCS-2015-042, “NCS Safety Analysis to Remove the Remaining 400g/liter Limits in Recovery,” dated July 31, 2015

NCS-2015-045, “NCS Safety Analysis for Solids Accumulations in the Low Level Dissolver (LLD) Hood Catch Tray (CR-1044387) (CA201500038),” dated May 7, 2015

NCS-2015-071, “NCS Safety Analysis for U-Mo Pumping Station in RTR per SER 15-014 Phase 1,” dated September 9, 2015

NCS-2015-084, “NCS Safety Analysis Supporting SER 15-013 Phase 1 – TDC-AC Preassembly Production,” dated August 20, 2015

NCS-2015-091, “NCS Justification Analysis for CR-1044966,” dated August 26, 2015

NCS-2015-093, “NCS Safety Evaluation to Approve the New Universal Fuel Element Transport Cart per SER 15-024 Phase 01,” dated September 9, 2015

NCS-2015-119, “NCS Safety Analysis for CR-1045165-00 – Removal of Upper Tiered Mass/Moderator Limit from Bay 2A Met Lab NMC Room,” dated September 30, 2015

NCS-2015-120, “Safety Concern Analysis for Moderating Material Checklist for the Conventional Box Lines: CA-201501498,” dated October 1, 2015

RP-07-028, LTC Criticality Alarm System Monthly Check, Form 3, Rev. 31, dated August 28, 2015

RP-07-028, Criticality Alarm system Failure and Non-routine Maintenance Log, Form 5, Rev. 31, dated August 20, 2015

RP-07-028, Functionality Test of EAS Horns and Lights at LTC, Form 8, Rev. 31, dated February 1, 2015

NCSE-03-03, Rev. 1, "Nuclear Criticality Safety Weekly Inspection Form," for the weeks of August 17, 2015 through September 28, 2015
 NCS-2015-123, NCS Violation & Observation Summary – 3rd Quarter 2015, dated October 30, 2015
 NCS-2001-074, Title Classified, dated March 8, 2001
 NCS-2013-075, Title Classified, dated May 29, 2013
 RWP 15-0039, Radiological Work Permit 15-0056
 SAR 15.33, Bay 17 Operations, Rev. 37

Procedures:

HS-FP-001, Monthly Inspection of Fire Hose Stations, Rev. 8, dated February 29, 2012
 HS-FP-002, Weekly Inspection and Test Fire Pumps, Rev. 12, dated February 15, 2013
 HS-FP-006, Portable Fire Extinguisher Inspection, Rev. 11, dated February 25, 2014
 HS-FP-007, Fire Hydrant Testing and Maintenance, Rev. 5, dated July 30, 2008
 HS-FP-008, Sprinkler System, Standpipes and Control Valve Inspection, Test, and Maintenance, Rev. 19, dated February 6, 2014
 HS-FP-009, Inspection of Fire Hydrants, Rev. 07, dated July 30, 2008
 HS-FP-017, Inspection, Test, and Maintenance of Fire Alarm Systems, Rev. 8
 HS-FP-020, Five Year Testing of the Water Loop, Rev. 6, dated June 17, 2015
 HS-03-10, Fire Protection System Impairments, Rev. 15
 HS-03-03, Ignition Source Permits, Rev. 18
 HS-03-08, Employee Fire Response and Fire Fighting, Rev. 5
 HS-03-07, Control System and Equipment for Fire Protection, Rev. 4
 HS-03-06, Combustible Metals and Pyrophoric Materials, Rev. 11
 HS-03-02, Fire Prevention, Rev. 7
 NCSE-03, "Nuclear Criticality Safety Audits and Inspections," Rev. 27
 NCSE-07, "Qualification and Training Requirements for a Nuclear Safety Engineer," Rev. 16
 OP-0061141, "Low Level Leach Hood Operation," Rev. 63
 OP-1001061, "Moderation Control," Rev. 00
 OP-1000309, "NDA Measurement of Waste and Scrap," Rev. 10
 QWI 5.1.7, "Safety Evaluation Requests," Rev. 30
 QWI 9.1.21, Industrial Engineering Maintenance, Facilities Engineering, and Construction Work Request, Rev. 5
 QWI 5.1.12, Change Management, Rev. 27
 QWI 14.1.1, Preventive/Corrective Action System, Rev. 31
 QWI 2.1.3, "Integrated Safety Analysis Methodology," Rev. 13
 QWI 2.1.2, "Preparation and Maintenance of Safety Analysis Reports (SARs)," Rev. 15
 QWI 14.1.10, "Safety Evaluation of Unusual Incidents," Rev. 16
 RP-07-034, "DMC 2000S Electronic Dosimeter Calibration & Operation," Rev. 12, dated March 20, 2015
 RP-07-054, "RMS-II Criticality and Area Monitor Calibration," Rev. 22, dated July 6, 2015
 WO 20189236, "SC Insp LLD for Buildup B 2M Reco," dated September 15, 2015
 EPR-06-04, Emergency Drills, Rev. 17, dated October 10, 2014
 EPR-06-08, Emergency Response Training, Rev. 8, dated October 15, 2012
 EPR-06-03, Emergency Management Training, Rev. 11, dated May 15, 2013
 EPR-06-01, Emergency Organization, Rev. 13, dated September 30, 2013
 EPR-06-05, Inspection of Emergency Operations Center Readiness, Rev. 26, dated April 15, 2014
 EPR-06-04 (EP-HS-009), Emergency Drills, Rev. 17
 EPR-02-01 (EP-HS-008), Initial Emergency Incident Assessment, Rev. 9
 EPR-02-04, Notification of Off-Site Agencies During An Emergency, Rev. 31

EPR-03-02, Industrial Health and Safety Response to Fire/Explosion, Rev. 08
 EPR-03-03, Emergency Procedure for a Fire/Explosion Involving Radioactive Material,
 Rev. 09
 EPR-06-04-02, Emergency Drill Training, Rev. 02
 Quality Work Instruction 5.1.12, Change Management, Rev. 27
 Quality Work Instruction 14.1.1, Preventive/Corrective Action System, Rev. 31

Change Requests (CR):

CR-1040058, CR-1041047, CR-1041725, CR-1043196, CR-1043219, CR-1043406,
 CR-1043728, CR-1043743, CR-1043756, CR-1043796, CR-1043945, CR-1044068,
 CR-1044082, CR-1044117, CR-1044231, CR-1044286, CR-1044335, CR-1044517,
 CR-1044537, CR-1044540, CR-1044576, CR-1041725, CR-1044740

Corrective Action (CA) Reports Review:

CA201401692, CA201401696, CA201401712, CA201401815, CA201402114,
 CA201401695, CA201500136, CA201500154, CA201500160, CA201500319,
 CA201500607, CA201500729, CA201500855, CA201500941, CA201501175,
 CA201501247, CA201501250, CA201501254, CA201501278, CA201501313,
 CA201501336, CA201501343, CA201501380, CA201501396, CA201501404,
 CA201501423, CA201501427, CA201501442, CA201501449, CA201501453,
 CA201501493, CA201501498, CA201501499, CA201501506, CA201501510,
 CA201501515, CA201501541, CA201501551, CA201501573, CA201501583,
 CA201501584, CA201501607, CA201501612, CA201501623, CA201501627,
 CA201501657, CA201501658, CA201501659, CA201501672, CA201501673,
 CA201501681, CA201501694, CA201501696, CA201501703, CA201501704,
 CA201501713, CA201501724, CA201501733, CA201501743, CA201501749,
 CA201501781, CA201501783, CA201501814, CA201501852

Commitments (COM):

COM-55890, COM-55892, COM-55893, COM-55894, COM-55895, COM-53396

Work Orders / Maintenance Plans:

NPDM 20188791, NPDM 20189491, NPDM 20190016, NPDM 20190017, NPDM 20190214,
 NPDM 20190500, NPDM 20190993, NPDM 20191398, NPDM 20191722, NPDM 20191938,
 NPDM 20192185, NPDM 20192359, NPDM 20192381, NPDM 20190061, MP #1453, MP
 #1805, MP #2556, MP #2591, MP #2891, MP #2919, MP #2986

Other Documents:

NCS Posting 15-33-001, Rev. 1
 NCS Posting 15-33-002, Rev. 0
 NCS Posting 15-33-005, Rev. 2
 NCS Posting 15-33-007, Rev. 0
 NCS Posting 15-33-008, Rev. 0
 NCS Posting 15-33-009, Rev. 0
 NCS Posting 15-33-010, Rev. 0
 NCS Posting Recovery-33, Rev. 0
 E41-201, Title Classified, Rev. 23
 NCS-2002-117, dated May 13, 2002
 NCS-2002-119, dated June 6, 2002
 SAR 15.42 Appendix, Rev. 01, dated October 11, 2013

Investigative Report, N-530, Rev. 03, CR-1044837 for CA201501380 on September 22, 2015

BWXT Nuclear Operations Group Lynchburg 2015 NRC Biennial Exercise

60 day Drill Letter

20 day Drill Letter

N530_CA201500154 Rev. 2

SAR 15.6, "Low Level Dissolution Process in Uranium Recovery," Rev. 65, dated March 25, 2015

SAR 15.22, "RTRT Fuel Powder and Compact Press," Rev. 74, dated July 31, 2014