



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II

245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

January 27, 2017

EN 51998

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 70-27/2016-005**

Dear Mr. Burch:

This letter refers to the inspections conducted from October 1 through December 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 November 3, 2016 and January 12, 2017, 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 this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. Because BWXT NOG identified and corrected the violation, and because the violation was not repetitive or willful this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) Charlie Stancil at BWXT NOG facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's

Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the public without redaction.

If you have any questions 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

Enclosure:
NRC Inspection Report 70-27/2016-005
w/Attachment: Supplementary Information

cc: (See page 3)

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cc:

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2016 Mount Athos Road
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109 Governor Street, Room 730
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 70-27

License No: SNM-42

Report No: 70-27/2016-005

Licensee: BWXT

Facility: Nuclear Operations Group (NOG)

Location: Lynchburg, VA 24505

Dates: October 1 through December 31, 2016

Inspectors: P. Glenn, Acting Senior Resident Inspector, RII/DFFI/PB2
N. Peterka, Acting Senior Resident Inspector, RII/DFFI/PB2
B. Adkins, Senior Fuel Facility Inspector, RII/DFFI/SB
T. Sippel, Fuel Facility Inspector, RII/DFFI/SB

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

Enclosure

EXECUTIVE SUMMARY

BWXT Nuclear Operations Group
NRC Integrated Inspection Report 70-27/2016-005
October 1 – December 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

- There were no violations of NRC requirements identified related to Plant Operations and Safety System Walk-downs. (Sections A.1 and A.2)
- There were no violations of NRC requirements identified related to the Fire Protection Program. (Section A.3)
- There were no violations of NRC requirements identified related to the Nuclear Criticality Safety Program. (Section A.4)

Radiological Controls

- There were no violations of NRC requirements identified related to the Radiation Protection Program. (Section B.1)

Facility Support

- There were no violations of NRC requirements identified related to Post Maintenance and Surveillance Testing Programs. (Sections C.1 and C.2)
- There were no violations of NRC requirements identified related to Management Organization and Controls. (Section C.3)

Other Areas

- One Non-Cited Violation was identified for an unanalyzed condition related to potential backflow of uranium bearing solution to a non-favorable geometry vessel in the Uranium Recovery facility. (Section D.1)

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. Maintenance activities were conducted in the Uranium Recovery (UR) facility as UR remained shut down during the period.

A. Safety Operations

1. Plant Operations (Inspection Procedure 88135.02)

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 shift turnover exchanges in UR. The inspectors interviewed operators, front-line managers, maintenance mechanics, radiation protection (RP) staff, and process engineering personnel regarding plant equipment and to verify the status of process operations.

During the inspection period, the inspectors interviewed operators, front-line managers, maintenance technicians, engineers, and radiation protection technicians to verify that each of the individuals demonstrated 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 Research and Test Reactor (RTR) area, Filler, Bay 6, Bay 7, and UR areas throughout the inspection period. The inspectors verified that SNM processes and workstations observed during the 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 (Inspection Procedure 88135.04)

a. Inspection Scope and Observations

The inspectors conducted walk-downs of safety-significant systems involved with the processing of SNM, including the Element Manufacturing Process, and reviewed NCS postings, operating procedures, selected NCS evaluations. To verify that items relied on for safety IROFS were available and reliable to perform their intended functions when needed as required by the performance requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 70.61 the inspectors conducted observations and interviews with the operators. The inspectors also compared the implementation of controls in the field with associated NCS postings and Safety Analysis Reports (SARs) 15.25, 15.27 and 15.42. Additionally, the inspectors conducted walk-downs in RTRT of a variety of fuel manufacturing and storage operations, and reviewed associated NCS postings, operating procedures, and NCS evaluations.

To determine if plant equipment was installed correctly, the inspectors reviewed applicable drawings and NCS releases, as well as the SARs mentioned above, as appropriate. During the walk-downs, the inspectors verified the following as appropriate:

- controls in place for potential criticality, chemical, and fire hazards
- process vessel configurations and dimensions maintained in accordance with NCS Evaluations (NCSEs)
- 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 NRC requirements were identified.

3. 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 the:

- Shop Bays 6A and B
- Pickling Area
- Container Storage Facility
- Filler Area
- Metallurgical Laboratory

The inspectors conducted fire safety tours of these areas and reviewed the fire detection and suppression capabilities in those areas, as applicable. The inspectors also reviewed relevant portions of the Pre-Fire Plan before and during the walk-downs to verify that key features identified on the plan (e.g. sprinkler control valves) were in place in the field, and that fire hazards that existed in the field were reflected in the Pre-Fire Plan. The inspectors also verified that housekeeping in the areas reviewed was sufficient to minimize the risk of fire. The inspectors reviewed the type of manual firefighting equipment that was provided to confirm that it was appropriate for the type of fire that could occur.

b. Conclusion

No violations of NRC requirements were identified.

4. Nuclear Criticality Safety (Inspection Procedure 88015)

a. Inspection Scope and Observations

The inspectors evaluated the licensee's NCS program to assure the safety of fissile material operations and compliance with the License and 10 CFR Part 70. The inspectors reviewed NCSEs which included NCS-1992-247, NCS-2000-344, NCS-2013-

012, NCS-2016-029, NCS-2016-052, NCS-2016-056, NCS-2016-087, and those listed in Section 4 of the Attachment to determine the following: whether properly reviewed and approved NCSEs were in place prior to conduct new or changed operations and whether they were of sufficient detail and clarity to permit independent review as required. The inspectors also reviewed the selected NCSEs to determine whether calculations were performed within their validated area of applicability and consistent with the validation report. Additionally, the inspectors reviewed the selected NCSEs, associated assumptions, and calculations to verify that they were consistent with the commitments in the License Application, including the consideration of the Double Contingency Principle, assurance of subcriticality under normal and credible abnormal conditions with the use of subcritical margin, technical practices and methodologies, and treatment of NCS parameters. NCSEs reviewed were selected based on factors that included risk-significance, whether or not they were new and/or revised, the use of new technology, and operating history.

The inspectors reviewed the licensee's "What If" analysis to determine whether the NCSEs reviewed systematically identified normal and credible abnormal conditions in accordance with the commitments and methodologies in the License Application for the analysis of process upsets. This included the review of accident sequences and or upsets that the licensee considered to be not credible to determine whether the bases for incredibility were consistent with the commitments, definitions, and methodologies in the License Application, and were documented in sufficient detail to permit an independent assessment of credibility. This review was conducted for the liquid waste system which includes various equipment including inline monitors, shutoff valves, and retention tanks. Additionally, the inspectors reviewed selected accident sequences, related to solution transfer and backflow in UR, that the licensee considered incredible to determine whether the bases for incredibility rely on any items which should be identified as formal NCS controls or IROFS.

The inspectors performed walk-downs of the inline monitors and annular tanks in UR, the retention tank building, and Vault 7 to determine whether existing plant configuration and operations were covered by, and consistent with, the process description and safety basis in the selected NCSEs listed above. The inspectors reviewed process and system descriptions, specifications, and drawings to verify that engineered controls established in the NCSEs were included. The engineered controls reviewed included, the inline monitors in UR and the retention tank building, neutron absorbers, safety related valves and backflow prevention devices in UR. The inspectors reviewed operating procedures and postings to verify that selected administrative controls established in the NCSEs were included. The inspectors interviewed operators and engineers to verify that administrative actions established in the NCSEs were understood and implemented properly. The administrative controls reviewed included, sampling and cleaning of the retention tanks, solution transfer controls in UR, and various mass and moderator limits. The inspectors reviewed the ISA summary and supporting ISA documentation for these IROFS to determine whether the controls identified in the ISA were supported by technical basis in the NCSEs.

The inspectors conducted walk-downs of abandoned equipment and enclosures in the UR area to verify that the licensee evaluated and removed radiological material prior to declaring the systems out-of-service. The inspectors reviewed plant procedures to verify that the licensee had adequate procedures and controls in-place to suspend and restart

fuel operations equipment from both short and long-term system outages. Formal procedures related to permanent deactivation of equipment and updates to the ISA were also reviewed.

The inspectors reviewed records of the last two NCS quarterly audits (NCS-2016-064, and NCS-2016-107), and accompanied a licensee NCS engineer on a weekly inspection of the drum dryer glovebox in UR to determine whether NCS staff routinely inspects fissile material operations to ascertain that criticality requirements were being complied with. Additionally, the inspectors interviewed NCS staff and reviewed weekly inspection records and the Weekly Inspection Schedule for 3rd Quarter 2016 to verify that the NCS function performed these weekly inspections and NCS audits as required by Section 5.1.3 of the License Application.

The inspectors reviewed the applied management measures for selected NCS controls to determine whether the management measures were sufficient to ensure the availability and reliability of NCS controls. The management measures and NCS controls reviewed were selected from the NCSEs listed above and included calibration of the IROFS inline monitors, retention tank sampling procedures, and solution transfer controls.

The inspectors conducted interviews and reviewed records to determine whether NCS staff reviewed new and/or revised fissile material operations and procedures, including maintenance plans, consistent with program procedures and at a level commensurate with their significance. The inspectors reviewed the selected NCSEs listed above to verify that they were performed in accordance with NCS program procedures and received appropriate independent review and approval. The inspectors verified whether the NCS quarterly audits were conducted at a frequency consistent with license requirements and examined trends in findings and reviewed past evaluations as required by Section 5.1.3 of the License Application.

The inspectors reviewed NCS staff qualification records and conducted interviews to verify that NCS engineers and senior NCS engineers have the necessary education and experience and were qualified in accordance with license requirements. The inspectors interviewed the licensee's new NCS engineer and reviewed the new engineer's training and qualification records to verify the engineer had the required education and experience and was being qualified in accordance with license requirements. Additionally, the inspectors reviewed records to verify that NCS staff members only performed those functions for which they were qualified.

The inspectors reviewed selected NCS-related corrective action program (CAP) entries to determine whether anomalous conditions were promptly identified and entered into the CAP, whether they received the appropriate level of investigation consistent with license commitments and procedures, whether proposed corrective actions were sufficiently broad, whether they were prioritized on a schedule commensurate with their significance, and whether they were completed as scheduled and were adequate to prevent recurrence. Additionally, the inspectors reviewed NCS-related CAP entries to assess NRC reportability. The CAP entries reviewed included CA201601022, CA201600687, CA201600747, CA201600767, CA201600788, CA201600868, CA201600885, CA201600885, and CA201600946.

The inspectors verified that no changes to the validation report were made since the last NCS inspection.

b. Conclusion

No violations of NRC requirements were identified.

B. Radiological Controls

1. Radiation Protection Quarterly (Inspection Procedure 88135)

a. Inspection Scope and Observations

The inspectors reviewed the licensee's RP program to verify compliance with 10 CFR 20 and License Application requirements. The inspectors toured the 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 to verify that proper protective equipment was used to prevent contamination. The inspectors also observed plant employees as they performed exit monitoring at the controlled areas' exits to verify that monitoring instructions were followed at the exit point. The inspectors observed employees using the exit monitors in the controlled area exit to verify whether monitors were being used as required.

The inspectors reviewed two radiological work permits (RWPs), which included one utilized in UR for the repackaging of uranium bearing material and one used in UR for maintenance on the recovery furnace. The inspectors verified the RWPs contained required work instructions, were posted in the work areas for employees' review, and that workers signed the applicable RWP.

b. Conclusion

No violations of NRC requirements were identified.

C. Facility Support

1. Post Maintenance Testing (Inspection Procedure 88135.19)

a. Inspection Scope and Observations

The inspectors observed two post-maintenance tests (PMTs) in the Specialty Fuels Facility (SFF) and UR. Specifically, the inspectors witnessed the performance of a post maintenance leak and pressure test on the SFF furnace and post column replacement testing in UR. The inspectors also conducted interviews of operators, technicians, and managers associated with the maintenance work and reviewed the associated work order packages and maintenance records.

b. Conclusion

No violations of NRC requirements were identified.

2. Surveillance Testing (Inspection Procedure 88135.22)

a. Inspection Scope and Observations

The inspectors observed two surveillance tests. Specifically the inspectors observed schedule surveillance testing of a thermocouple in UR (WO 20208162) and a gas detector sensor surveillance in SFF (WO 20209964). The inspectors interviewed operators, technicians, and managers associated with the testing, the reviewed work order instructions, and maintenance records to verify that test results confirmed the availability and reliability of any associated IROFS and licensee operating procedure steps as requirements.

b. Conclusion

No violations of NRC requirements were identified.

3. Management Organization and Controls (Inspection Procedure 88135)

a. Inspection Scope and Observations

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

b. Conclusion

No violations of NRC requirements were identified.

D. Other Areas

The NRC staff completed a review of the Apparent Violation (AV) 70-27/2016-004-01, Unanalyzed Condition Regarding Potential Backflow of Uranium Bearing Solution in the Uranium Recovery Area, as documented in inspection report (IR) 70-27/2016-004. The event was reported by BWXT on June 10, 2016, under Event Notification (EN) 51998 and was entered in the licensee's corrective action program as Corrective Action (CA) 201600767.

During an NRC inspection conducted on August 15-18, 2016, one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is described below:

Title 10 of the *Code of Federal Regulations* (10 CFR) 70.61(a) requires, in part, that the licensee shall evaluate, in the integrated safety analysis performed in accordance with 10 CFR 70.62, its compliance with the performance requirements in paragraphs (b), (c), and (d) of this section. 10 CFR 70.62 (c)(1)(iv) requires, in part, that each licensee shall conduct and maintain an integrated safety analysis, that is of appropriate detail for the complexity of the process, that identifies potential accident sequences caused by process deviations or other events internal to the facility.

Contrary to this requirement, the licensee failed to identify a potential accident sequence involving a backflow of high concentration uranium into the process water system in the UR Facility. The accident sequence would result in a high consequence event as defined in 10 CFR 70.61 (b). Upon review of credited and uncredited controls in accordance with NRC Inspection Manual Chapter 2606, Assessment of the Risk Resulting from a Potential Safety Noncompliance at a Fuel Cycle Facility, the NRC has determined that adequate controls remained available and reliable to meet the performance requirements of 10 CFR 70.61 (b) and that likelihood of occurrence remained highly unlikely. This is a Severity Level IV violation (Enforcement Policy section 6.2.d.1).

In accordance with Section 2.3.2.b of the Enforcement Policy, this violation is dispositioned as a Non-Cited Violation (NCV 2016-005-01) due to the violation being licensee identified, completion of corrective actions to prevent recurrence, licensee initiative in identifying the root cause, being non-repetitive as a result of an inadequate corrective action, and not willful.

E. Exit Meeting

On November 3, 2016 and January 12, 2017, 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

<u>Name</u>	<u>Title</u>
T. Allen	Front Line Manager, Uranium Processing and Research Reactors (UPRR)
L. Ayers	Waste Processing Technician
B.J. Burch	Vice President and General Manager
T. Cayton	UPRR Maintenance
E. Clark	Front Line Manager Pickling Area
K. Conway	Unit Manager, Radiation Protection
M. Edstrom	Fire Protection Engineer
D. Faidley	Unit Manager, Nuclear Criticality Safety
T. Gryder	Front Line Manager Metlab
T. Hinze	Engineering Manager FMO
R. Howard	Filler Fabricator
H. Hudson	Pickling Area Manager
R. Johnson	Licensing Engineer
W. Lemon	FMO Section Manager
L. Miller	Front Line Manager, UPRR
S. Niedzialek	Engineering
L. Ragland	Unit Manager, Uranium Processing and Research Reactors
C. Rucker	Front Line Manager FMO
R. Simmons	Environmental Engineering Manager
D. Spangler	Section Manager, Nuclear Safety and Licensing
T. Stinson	Waste Operations Manager
S. Subosits	Licensing Engineer
C. Terry	Unit Manager, Licensing and Safety Analysis
D. Ward	Dept. Manager, Environmental, Safety Health and Safeguards
L. Wetzel	NCS Engineer
C. Yates	Section Manager, Uranium Processing and Research Reactors

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

70-27/2016-004-01	AV	Failure to identify a high consequence accident sequence related to potential backflow of uranium bearing solution in the UR Facility (EN 51998)
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Opened/Closed

70-27/2016-005-01	NCV	Unanalyzed condition regarding potential backflow of uranium bearing solution in the UR area.
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3. **LIST OF INSPECTION PROCEDURES USED**

88015	Nuclear Criticality Safety
88020	Operational Safety
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:

M11-P-029, Pickle Area Quality and Safety Checks, Revision (Rev.) 31, Week of October 24 to October 20, 2016

NCS-2005-120, Nuclear Criticality Safety Analysis Supporting Phase 1 of SER 05-035, "TTC Run 2 Fuel Element Development and Process Qualification" dated August 3, 2005

NCS-2010-065, Nuclear Criticality Safety Release Supporting Phase 1 of SER 09-033, "NR Elements Heat Treatment Fixture" dated May 04, 2010

NCS-2009-114, NCS Safety Analysis Supporting SER 09-033 Phase 1 – NR Elements Heat Treatment Fixture dated September 1, 2009

NCS-2016-107, NCS Violation and Observation Summary 3rd Quarter 2016 dated October 24, 2016

NPDP Work Order No. 20196651, SC Acid Dump Sys Inspect 3-10 6MON GMECH, dated July 4, 2016

WO 20210818

WO 20209964

WO 20211951

WO 20212490

WO 20208162

Procedures:

EP-321, Sampling, Analysis, Reporting, and Release of Retention Tanks for Dynamic U²³⁵ Inventory, dated February 15, 2016

NCSE-07, Qualification and Training Requirements for a Nuclear Criticality Safety Engineer, Rev. 10

OP-0061143, Uranium Recovery Scrubber Operations, Rev. 29

OP-0061150, Inspection and Cleaning of Recovery Ducts, Rev. 26

RP-07-079, Calibration and Operation of the Canberra In-Line Liquid Waste Monitors, Rev. 7

QWI 02.1.02, Preparation and Maintenance of Safety Analysis Reports (SARs), Rev. 16

QWI 02.1.17, Suspending & Restarting Fuel Operations, Rev. 0

MII-G-021, OJT Pickling, Rev. 14

MII-P-046, Annual Chemical Spill First Alert/Awareness Training, Rev. 03

MII-R-068, Packing Assembly Technician Qualification, Rev. 01

OP-0000106, Clean HFIR Elements, Rev. 6

OP-0021001, Operating Procedure for Pickling, Rev. 82

OP-0020901, Operating Procedure for Cleaning, Rev. 69
 OP-0025000, Cleaning Component Washing, Rev. 5
 OP-0064801, Operating Procedure for General Handwork Operations, Rev. 24
 OP-0021001, Operating Procedure for Pickling, Revision 83
 QWI 14.1.10, Safety Evaluation of Unusual Incidents, Rev. 16
 RWP-16-0052, Rev. 00, dated September 5, 2016
 RWP-16-0053, Rev. 00, dated September 6, 2016
 RWP-16-0051, Rev. 00, dated October 12, 2016

Other:

NCS-1992-247, Upgrade In-Line Monitoring System Valves, dated July 14, 1992.
 NCS-2000-344, Application of Counting Statistics to In-Line Monitor, dated
 October 29, 2000
 NCS-2003-021, Nuclear Safety Release for SER 00-066, Bay 17 Pre-Operational
 Testing Requirements, dated January 21, 2003
 NCS-2013-012, NCS Safety Analysis to Remove Redundant IROFS in SARs 15-12 and
 15-21, dated January 29, 2013
 NCS-2016-029, NCS Safety Analysis for Revised Boron Content for Vault 7 and Closure
 of CA201402140, COM 51376, CHG 1536, dated October 11, 2016
 NCS-2016-052, NCS Safety Analysis Supporting the Safety Basis Revision for the Ispen
 Furnace per CHG-00001139 in Response to CA-201500296, dated August 17, 2016
 NCS-2016-056, NCS Safety Analysis to Support U-Mo Plate Fabrication in RTR per
 SER 15-026 Phase 1 DU/LEU mini-plates, Phase 2 HEU mini-plates, and Phase 3
 LEU U-Mo FSP-1 and Reactor Plates, dated June 13, 2016
 NCS-2016-064, NCS Violation & Observation Summary – 2nd Quarter 2016, dated
 July 27, 2016
 NCS-2016-087, Revised NCS Safety Analysis for a New Recovery Scrubber per SER
 14-032, dated October 10, 2016
 NCS-2016-096, Waterline, dated October 31, 2016
 NCS-2016-099, NCS Analysis Supporting U-metal Dissolution in Conversion Facility
 Dissolver #2 – SER 16-032, Phase 01, dated October 24, 2016
 NCS-2016-107, NCS Violation & Observation Summary – 3rd Quarter 2016, dated
 October 24, 2016
 SAR 15.27, NR Fuel Element Manufacturing Process, Revision 117, dated August 11,
 2015

Condition Reports Written as a Result of the Inspection:

CA201601464, CA201601465

Condition Reports Reviewed:

CA201600687, CA201600747, CA201600767, CA201600788, CA201600868,
 CA201600885, CA201600946, CA201601022, CA201601030, CA201600539,
 CA201600521, CA201600687