



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

October 24, 2019

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 70-27/2019-004

Dear Mr. Burch:

This letter refers to the inspections conducted from July 1 through September 30, 2019, at the BWXT Nuclear Operations Group, Inc. (NOG) facility in Lynchburg, VA. The purpose of the inspection was to determine whether activities authorized under the license and implementation of programs and procedures in the areas of safety operations, radiological controls, and facility support were conducted safely and in accordance with U.S. Nuclear Regulatory Commission (NRC) requirements. The results were discussed with you and members of your staff at exit meetings held on July 25, September 12, and October 8, 2019.

Based on the results of these inspections, no violations of more than minor significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations* Section 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 Noel Pitoniak of my staff at 404-997-4634.

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 70-27/2019-004
w/Attachment: Supplemental Information

cc:

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SUBJECT: BWXT NUCLEAR OPERATIONS GROUP – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 70-27/2019-004

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ADAMS: ☒ ACCESSION NUMBER: **ML19298A117** ☒ SUNSI REVIEW COMPLETE ☒ FORM 665 ATTACHED

OFFICE	RII/DFFI	RII/DFFI	RII/DFFI	RII/DFFI	RII/DFFI	RII/DFFI	RII/DFFI
NAME	AAlen	TSippel	RGibson	GGoff	PStartz	LPitts	EMichel
DATE	10/11/2019	10/16/2019	8/22/2019	8/28/2019	10/23/2019	10/23/2019	10/24/2019

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 70-27

License No: SNM-42

Report No: 70-27/2019-004

Enterprise Identifier: I-2019-004-0069

Licensee: BWX Technologies, Inc. (BWXT)

Facility: Nuclear Operations Group, Inc. (NOG)

Location: Lynchburg, VA 24505

Inspection Dates: July 1 through September 30, 2019

Inspectors: A. Alen, Senior Resident Inspector
R. Gibson, Jr., Senior Fuel Facility Inspector (Sections B.2, B.4)
G. Goff, Fuel Facility Inspector (Section B.2)
L. Pitts, Senior Fuel Facility Inspector (Section A.3)
T. Sippel, Fuel Facility Inspector
P. Startz, Fuel Facility Inspector (Section B.3)

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

Enclosure

EXECUTIVE SUMMARY

BWXT Nuclear Operations Group, Inc.
NRC Integrated Inspection Report 70-27/2019-004
July 1 – September 30, 2019

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

Safety Operations

- No violations of more than minor significance were identified related to Plant Operations and Operational Safety walkdowns. (Sections A.1 and A.2)
- No violations of more than minor significance were identified related to the Fire Protection Program. (Section A.3)
- No violations of more than minor significance were identified related to the Nuclear Criticality Safety Program. (Section A.4)

Radiological Controls

- No violations of more than minor significance were identified related to the Radiation Protection Program. (Sections B.1 and B.2)
- No violations of more than minor significance were identified related to the Inspection of Transportation Activities. (Section B.3)
- No violations of more than minor significance were identified related to Effluent Controls and Environmental. (Section B.4)

Facility Support

- No violations of more than minor significance were identified related to Post-Maintenance and Surveillance Testing. (Sections C.1 and C.2)
- No violations of more than minor significance were identified related to the Identification and Resolution of Problems. (Section C.3)
- No violations of more than minor significance were identified related to the Emergency Preparedness Program. (Section C.4)

Other Areas

- No violations of more than minor significance were identified related to observations of security personnel and activities. (Section D.1)

Attachment

Key Points of Contact
List of Items Opened, Closed, and Discussed
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, Uranium Recovery (UR) facility, and in the Research and Test Reactors (RTR) facility.

A. Safety Operations

1. Plant Operations (Inspection Procedures 88135 and 88135.02)

a. Inspection Scope

The inspectors performed routine tours of plant operating areas housing special nuclear material (SNM) to verify that equipment and systems were operated safely and in compliance with the license and Title 10 of the *Code of Federal Regulations* (10 CFR) 70, "Domestic Licensing of Special Nuclear Material." Daily operational and shift turnover meetings were observed throughout the period to gain insights into process safety and operational issues. The inspectors reviewed selected BWXT-identified issues and corrective actions (CAs) for previously identified issues. These reviews focused on plant operations, safety-related equipment (valves, sensors, instrumentation, in-line monitors, and scales), and items relied on for safety (IROFS) to determine whether BWXT captured off-normal events and implemented effective CAs as required.

The inspectors conducted routine tours to verify that operators, front-line managers, maintenance mechanics, radiation protection staff, and process engineering personnel were knowledgeable of their duties and attentive to any alarms or annunciators at their respective stations as required. The routine tours included walkdowns of the RTR, filler, UR areas, and other manufacturing areas where SNM was being processed. The inspectors observed activities during normal and upset conditions to verify compliance with procedures and material station limits. The inspectors reviewed selected safety controls, including IROFS, to verify that they were in place, available, and functional to ensure proper control of SNM. The inspectors reviewed operator log sheets, operating procedures, maintenance records, and equipment and process changes to obtain information concerning operating trends and activities. The inspectors reviewed CAs to verify that BWXT actively pursued CAs for conditions requiring temporary modifications and compensatory measures.

The inspectors performed periodic tours of the outlying facility areas to verify that equipment and systems were operated safely and in compliance with the license. The inspectors focused on potential wind-borne missile hazards, potential fire hazards with combustible material storage and fire loading, hazardous chemical storage, the physical condition of bulk chemical storage tanks and piping, storage of compressed gas containers, and potential degradation of plant security features. In addition, the inspectors periodically toured or inspected BWXT's emergency response facilities to verify that the facilities were maintained in a readily available status as required.

The inspectors attended various BWXT meetings, including the Change Review Board, Safety Review Board, and met periodically with plant senior management and licensing personnel throughout the inspection period to determine the overall status of the plant.

The inspectors evaluated BWXT's response to significant plant issues and their approach to solving various plant problems in accordance with Quality Work Instruction (QWI) 2.1.3, "Integrated Safety Analysis Methodology;" QWI 14.1.4, "Reporting Unusual Incidents;" and QWI 14.1.10, "Safety Evaluation of Unusual Incidents."

b. Conclusion

No violations of more than minor significance were identified.

2. Operational Safety (Inspection Procedure 88135.04)

a. Inspection Scope

The inspectors reviewed safety-significant systems, structures, and components involved with the processing and handling of SNM in the filler pharmacy area to verify compliance with the license, procedures, and applicable safety analysis reports (SARs) (e.g., SAR 15.32, "Pharmacy Operations"). The inspectors conducted walkdowns of selected process areas and transport carts to verify the as-built configurations matched approved plant drawings and to verify that there were no conditions that degraded equipment or structural performance including the operability of IROFS, safety-related devices, or other support systems essential to safety performance. The inspectors observed operator performance at selected processes to verify that plant personnel were familiar with the assumptions and controls associated with the IROFS systems and instrumentation for maintaining plant safety, as required. The inspectors also reviewed IROFS assumptions and controls to verify proper implementation in the field. The inspectors reviewed the related integrated safety analyses (ISA) to verify the availability, reliability, and capability of the systems to perform their safety functions were not affected by outstanding design issues, temporary modifications, operator workarounds, adverse conditions, or other system-related issues.

The inspectors reviewed procedures, drawings, related ISAs, and regulatory requirements such as 10 CFR 70.61, "Performance Requirements," to verify the following, as appropriate, during the walkdowns:

- controls in place for potential criticality, chemical, radiological, and fire safety hazards
- process and transport configurations were maintained in accordance with nuclear criticality safety evaluations (NCSEs)
- supporting structures, systems, and components correctly aligned, labeled, lubricated, cooled, and ventilated
- hangers and supports correctly installed and functional
- cabinets, cable trays, and conduits correctly installed and functional
- good material condition of visible cabling
- no interference of ancillary equipment or debris with system performance

b. Conclusion

No violations of more than minor significance were identified.

3. Fire Protection Quarterly (Inspection Procedure 88135.05)

a. Inspection Scope

The inspectors performed an inspection of bays 6A, 9, 9A, 10, 10A, 16, 2T warehouse, 3T electrical room, RTR weld room, and the UR area to verify compliance with license application Chapter 7, "Fire Safety," and the National Fire Protection Association (NFPA) 801, "Standard for Fire Protection for Facilities Handling Radioactive Materials," as required. The inspectors performed fire safety walkdowns and reviewed the fire detection and suppression capabilities in those areas, as applicable. The inspectors also reviewed relevant portions of the pre-fire plans before and during the walkdowns to verify that key features identified in the plan (e.g., locations of fire hose stations and portable extinguishers, locations of sprinkler isolation valves, etc.) were in place in the field and that fire hazards that existed in the field were reflected in the pre-fire plans. The inspectors reviewed the type of manual firefighting equipment that was provided to verify that it was appropriate for the type of fire that could occur. Various fire barriers and doors were examined for proper maintenance and function and fire impairments reviewed for adequate compensatory actions, as required.

Routine plant tours were conducted for other areas of the plant to verify that housekeeping in the areas was sufficient to minimize the risk of fire and that transient combustibles were being adequately controlled and minimized as required.

b. Conclusion

No violations of more than minor significance were identified.

4. Nuclear Criticality Safety (Inspection Procedure 88135.02)

a. Inspection Scope

The inspectors reviewed the nuclear criticality safety (NCS) program to verify compliance with license application Chapter 5, "Nuclear Criticality Safety;" the Nuclear Criticality Safety Manual; and implementing procedures. The inspectors conducted routine production area tours to verify various criticality controls, including the implementation of criticality station limit cards and container sizing to minimize potential criticality hazards as required. The inspectors reviewed a number of criticality-related IROFS to verify operability. The inspectors also interviewed and observed operators to verify knowledge of requirements associated with NCS IROFS.

As part of routine day-to-day activities onsite, the inspectors reviewed corrective action program (CAP) entries associated with criticality safety. The inspectors evaluated BWXT's response to such entries and, if needed, had discussions with NCS engineers to determine safety significance and to verify compliance with procedures.

b. Conclusion

No violations of more than minor significance were identified.

B. Radiological Controls

1. Radiation Protection Quarterly (Inspection Procedure 88135)

a. Inspection Scope

The inspectors performed a review and observation of posted radiologically controlled areas to verify compliance with license application Chapter 4, "Radiation Safety;" the Radiation Protection Manual; and implementing procedures. The inspectors reviewed the following radiation work permits (RWPs) to verify that they contained required work instructions, were posted in the work area for employee review, and that workers signed the RWPs. In addition, the inspectors performed partial reviews of select RWPs during the inspection period in different operational areas to verify RWP compliance.

- RWP 19-006, UR Furnace Operation with Cooling Section Ventilation Isolated, on September 12, 2019
- RWP 19-0053, Remove Special Fuel Facility (SFF) Dry Ventilation High-Efficiency Particulate Air (HEPA) Bank Pre-Filter Cover, on September 27, 2019

The inspectors reviewed BWXT's radiation protection program to verify compliance with 10 CFR 20, "Standards for Protection Against Radiation," and license requirements. The inspectors toured the controlled areas to verify 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 and as they performed various tasks 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.

b. Conclusion

No violations of more than minor significance were identified.

2. Radiation Protection (Inspection Procedure 88030)

a. Inspection Scope

The inspectors observed activities in the field, interviewed personnel, and reviewed pertinent documents to determine that BWXT's performance was in accordance with the requirements of 10 CFR 20, "Standards for Protection Against Radiation," and with license requirements.

The inspectors interviewed senior health physicists and reviewed dose records to verify that BWXT monitored employees who were likely to receive, in one year, a dose in excess of the 10 CFR 20.1502(a) levels. The inspectors reviewed the dosimetry type, duration of use, bioassay data, relevant procedures, and the software tracking system in order to determine whether these aspects were in compliance with Chapter 4, "Radiation Safety," of the license application and applicable procedures.

The inspectors reviewed the records submitted by off-site vendors, which processed dosimeters and bioassay samples, to verify that calculated dose to workers used conservative assumptions. The inspectors reviewed documentation to determine whether the personnel dosimeter processor maintained accreditation from National Voluntary Laboratory Accreditation Program as required by 10 CFR 20.1501(d)(1).

The inspectors reviewed bioassay records and interviewed the responsible health physicists to verify that the bioassay program was in compliance with the license application. The inspectors verified through interviews and review of documentation that all internal sampling analysis was performed by external vendors that are audited triennially by BWXT for quality assurance.

The inspectors walked down areas within RTR, UR, Filler, and the Lynchburg Technology Center (LTC). The inspectors observed that area dosimeters and fixed-air monitors were present as per procedure. The inspectors further observed fixed-air samplers to verify that each was within calibration and that adequate flow was being maintained. During these walkdowns, the inspectors verified that building area ventilation was from areas of lower contamination to areas of higher contamination as per the license application. The inspectors observed operators and technicians during these walkdowns to verify that workers were wearing dosimetry as required by procedure.

The inspectors also verified that BWXT implements process or engineering controls to control the concentration of airborne radioactive material in accordance with 10 CFR 20.1701. The inspectors reviewed records to verify that the air sampling program complied with the license requirements for internal dose calculations based on airborne concentration sampling. The inspectors reviewed procedures to verify that BWXT maintains a program to identify and post areas as airborne radioactivity areas per 10 CFR 20.1003 and 10 CFR 20.1902(d). The inspectors reviewed procedures to verify that BWXT limits access for airborne radioactivity areas to only workers qualified to wear respirators.

The inspectors reviewed procedures and interviewed BWXT personnel responsible for the respiratory protection program to verify that the program was in compliance with 10 CFR 20.1703 and the license application. The inspectors reviewed training records to verify that users received training and were qualified to use respiratory protection equipment. The inspectors inspected a sampling of stored respiratory protection equipment for damage in order to determine compliance with procedures. The inspectors reviewed documents and walked down the respirator testing facility to verify that BWXT administers respirator users a medical exam and fit test prior to usage as per procedure. The inspectors also reviewed procedures to verify the respirators are to be operationally tested prior to each use. The inspectors reviewed documentation to verify that the respirators were certified by the National Institute for Occupational Safety and Health as required by 10 CFR 20.1703.

The inspectors interviewed front line managers and health physicists and reviewed documents to verify that BWXT uses, to the extent practical, engineering controls to achieve occupational doses as low as reasonably achievable (ALARA) in accordance with 10 CFR 20.1101(b). The inspectors reviewed the dose to workers records to verify that the dose results included the total effective dose equivalent, the lens dose

equivalent, the shallow dose equivalent, and that results were less than the limits in 10 CFR 20.1201. The inspectors reviewed BWXT dose results for workers who had an internal uptake during the previous 12 months to verify that the bioassay action limits were not exceeded. The inspectors reviewed a sample of NRC Form 5, "Occupational Dose Record for a Monitoring Period," to verify that BWXT was maintaining records of dose in accordance with 10 CFR 20.2106.

The inspectors reviewed the 2018 ALARA report to verify that the ALARA program was in compliance with 10 CFR 20.1101(c) and license requirements. The inspectors also reviewed this document to determine whether the ALARA program monitored, trended, and, where practical, addressed adverse exposure trends as per the license application. The inspectors reviewed meeting minutes to verify whether the radiation safety committee meeting frequency was in accordance with license requirements.

The inspectors reviewed audits and assessments of various areas within the radiation protection program to verify compliance with Chapter 11, "Management Measures," of the license application. Inspectors also reviewed CAs to verify that findings and observations from these audits and inspections were placed into BWXT's CAP as per Chapter 11.

b. Conclusion

No violations of more than minor significance were identified.

3. Inspection of Transportation Activities (Inspection Procedure 86740)

a. Inspection Scope

The inspectors evaluated whether BWXT had established, maintained, and implemented a management-controlled program to ensure that radiological and nuclear safety protocols performed during the receipt, packaging, documentation, delivery to a carrier, and to private carriage of licensed radioactive materials were in compliance with 10 CFR 20, "Standards for Protection Against Radiation;" 10 CFR 71, "Domestic Licensing of Special Nuclear Material;" and license conditions. The inspectors also evaluated whether BWXT's transportation activities were in compliance with U.S. Department of Transportation (DOT) 49 CFR Parts 171-178 transportation regulations. The inspectors reviewed receipt documentation associated with type 7A containers containing radiological materials. The observed activities also included the receipt of ES-3100 containers radiological materials.

The inspectors reviewed a sample of transportation records involving the shipment of radiological waste materials for disposal. The inspectors physically inspected the area where rail car shipments of waste materials are staged for shipment. The inspectors verified that BWXT recorded the required information on the packaging and shipping orders such as the transportation index, criticality safety index, package activity, labeling, and placards.

The inspectors reviewed training records to evaluate if BWXT had administered hazardous materials transportation training to applicable BWXT personnel as required by DOT 49 CFR 172.704 and license conditions. The inspectors observed the opening

and unloading of a sample of shipping containers received during the inspection, including the progressive radiological surveys of ES-3100 containers and removal of their contents. The inspectors verified that the shipment was received and unloaded in accordance with approved procedures and supervisory oversight. The inspectors reviewed shipping records and surveys for previous product shipments to verify that records requirements were in accordance with approved procedures.

The inspectors reviewed samples of procedures and related documentation to verify that BWXT continued to meet 10 CFR 71.21 conditions required to use the general license provision for transport of licensed material. The inspectors reviewed recent audits of the transportation program to verify that BWXT was performing periodic audits of the program, and that the results of the audits were addressed in the CAP, as required by the license application.

The inspectors reviewed samples of BWXT's CAP entries involving radiological transportation issues during the past 12 months to verify that identified deviations from procedures and unforeseen process changes affecting transportation were documented and investigated in accordance with the license application.

b. Conclusion

No violations of more than minor significance were identified.

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

a. Inspection Scope

The inspectors evaluated whether BWXT had established, maintained, and implemented an effluent control and environmental protection program in accordance with the requirements of license application Chapter 9, "Environmental Protection," and Chapter 11, "Management Measures." The inspectors reviewed environmental program documents, observed activities, and conducted interviews to verify that the program was being implemented in accordance with license application requirements.

The inspectors reviewed the quality assurance program for effluent control and environmental protection to verify that BWXT performed the required audits and presented the annual audit results to the management team in accordance with Section 11.5, "Audits and Assessments," of the license application. The inspectors reviewed the findings from these audits to verify that they were entered into BWXT's CAP for resolution in accordance with Section 11.6, "Corrective Action Program," of the license application. The inspectors reviewed events identified in the CAP to verify that deviations from procedures and unforeseen process changes were documented and investigated.

The inspectors interviewed BWXT staff to evaluate potential new areas of contamination in the surrounding environment or subsurface of the facility. The inspectors reviewed pertinent documents to determine that BWXT, to the extent practical, conducted operations that minimized the introduction of residual radioactivity into the local environment surrounding the facility including subsurface soils and groundwater in accordance with 10 CFR 20.1406(c). The inspectors reviewed documentation that

demonstrated that BWXT, upon potential site closure, was prepared to final release the facility in accordance with Chapter 10, Section 10.2.3 of the license application.

The inspectors reviewed procedures and observed operations related to effluent control and environmental protection to verify that the procedures were written and approved to delineate responsibilities related to effluent controls in accordance with Chapter 11, Section 11.4 of the license application. The inspectors also observed radiological control technicians performing effluent controls and environmental protection activities to verify that the technicians performed their tasks in accordance with onsite procedures. In addition, the inspectors reviewed training records to verify that the technicians were trained in accordance with the license application.

The inspectors observed an environmental technician sample retention tank #4 (containing effluent from recovery) for uranium contents prior to discharging the tank to the EQ tank in waste treatment. The inspectors verified that the tank was sampled and drained in accordance with procedure RP-08-006, "Final Liquid Effluent Preparation and Analysis," Revision (Rev.) 17. In addition, the inspectors walked down and observed an environmental technician collecting samples from the ambient air stations to verify that the samples were collected, and the filter replaced in accordance with procedure RP-08-002, "Environmental Air Sample Collection and Analysis," Rev. 14.

The inspectors also observed calibration technicians demonstrating the weekly source checks of an in-line monitor for the plant stream that monitors the process liquid effluent before the effluent is drained to the retention tanks. The source check was conducted by the technicians in accordance with RP-07-079, "Calibration & Operation of the Canberra In-Line Waste Monitors," Rev. 8. The in-line monitors are IROFS in accordance with SAR 15.21, "Low-Level Radioactive Waste Process."

The inspectors reviewed the second half 2018 semi-annual effluent reports and the first half 2019 effluent reports to evaluate compliance with 10 CFR 70.59. The inspectors reviewed the airborne portion of the public dose assessment to verify compliance with the ALARA as required by 10 CFR 20.1101(d). The inspectors verified that the average annual effluent concentrations released in 2018 did not exceed the values specified in Appendix B, Table 2, of 10 CFR 20, "Standards for Protection Against Radiation." The inspectors reviewed the 2018 external radiation source measurements, taken from dosimeters positioned along BWXT's property boundary to verify that the total dose to the public individual likely to receive the highest dose from the licensed operation did not exceed the regulatory limit in 10 CFR 20.1301(a)(1) for calendar year 2018. The inspectors observed that BWXT maintained records of all effluent discharges to comply with 10 CFR 20.2103(b)(4).

The inspectors reviewed sampling results and records for soil, forage, and groundwater to evaluate compliance with procedure RP-08-001, "Collection and Analysis of Environmental Soil, Surface Water, Sediment, Vegetation & Fallout Samples," Rev. 19, and Chapter 9 of the license application. The inspectors also reviewed the annual dose report to the Commonwealth of Virginia Department of Health to confirm compliance with NRC 10 CFR 20.1301(e).

b. Conclusion

No violations of more than minor significance were identified.

C. Facility Support

1. Post-Maintenance Testing (Inspection Procedure 88135.19)

a. Inspection Scope

The inspectors witnessed and reviewed the post-maintenance tests (PMTs) listed below to verify compliance with license application Chapter 11, "Management Measures," and test procedures and/or work order (WO) instructions to confirm functional capability of safety systems and components (SSCs) following maintenance. The inspectors reviewed BWXT's completed test procedures to verify that SSC safety function(s) that may have been affected by the maintenance activity were adequately tested, that the acceptance criteria were consistent with information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed and/or reviewed the test data to verify that test results adequately demonstrated restoration of the affected safety function.

Furthermore, the inspectors verified that issues associated with PMTs were identified and entered into BWXT's CAP.

- WO 20266988, UR Drum Dryer Steam Pressure Leak Test Following Replacement of Steam Relief Valves and Johnson Valves, on July 19, 2019
- WO 202646735, UR Hydrofluoric Acid Pump Parastolic Tube Assembly Replacement, on July 31, 2019
- WO 10193012, Recovery Area Low-Level Dissolution Weight Column Replacement, on July 31, 2019

b. Conclusion

No violations of more than minor significance were identified.

2. Surveillance Testing (Inspection Procedure 88135.22)

a. Inspection Scope

The inspectors witnessed and/or reviewed completed test data for the surveillance tests listed below to verify compliance with license application Chapter 11, "Management Measures," and that risk-significant and safety-related systems met the requirements of the ISA. The inspectors verified the testing effectively demonstrated that the SSCs were operationally capable of performing their intended safety functions and fulfilled the intent of the associated safety-related equipment test requirement.

The inspectors discussed surveillance testing requirements with operators and maintenance personnel performing the associated tasks to verify that test equipment or standards used to conduct the test were within calibration.

- Maintenance Plans (MPs) 1910 and 1465, UR High-Level Dissolver Hydrogen Detectors Calibration and Functional Test (WO 20269315), on August 28, 2019

- MP 2411, UR High- and Low-Level Dissolvers Airflow Checks (WO 20269271), on September 9, 2019

b. Conclusion

No violations of more than minor significance were identified.

3. Identification and Resolution of Problems (Inspection Procedure 88135.02)

a. Inspection Scope

The inspectors reviewed a sample of items entered into BWXT's CAP during the inspection period to ensure that entries pertinent to safety, security, and non-conforming conditions were identified, investigated, and tracked to resolution in accordance with implementing procedure QWI 14.1.1, "Preventive/Corrective Action System." The inspectors conducted interviews with BWXT staff and reviewed documents to verify that issues of high-safety significance were identified and reviewed for apparent causes as required. The inspectors reviewed issues requiring extent-of-condition and/or extent-of-cause reviews to verify that the reviews were completed and documented in the applicable CA records. The inspectors also reviewed CAs to prevent recurrence of previous issues to verify that they were identified in the CAP and were reviewed and tracked to completion.

Additionally, the inspectors conducted periodic reviews of BWXT audits and third party reviews of safety-significant processes to verify effectiveness and alignment with requirements of the CAP. Specifically the inspectors reviewed the following:

- Quarterly Quality Assurance (QA) Internal Audits for Radiation Protection – Radiological Environmental Control (Audit No. 258-3F) and NCS – Procedures, Postings, and Labeling Practices (Audit No. 257-2B), 2nd Quarter 2019
- Biannual QA Internal Audit for Emergency Preparedness – Training, Drills, and Exercises (Audit No. 259-4D), 2nd Quarter 2019
- BWXT NOG-L Fatigue Management Program Annual and 6-Month Performance Data Reports, August 1, 2019
- Semi-Annual Effluent Monitoring Report, August 26, 2019

b. Conclusion

No violations of more than minor significance were identified.

4. Emergency Preparedness (Inspection Procedure 88135)

a. Inspection Scope

On September 25, 2019, the inspectors observed BWXT's third quarter emergency team exercise (first and second shifts) initiated by a simulated vehicle collision into a waste treatment facility low-level radioactive waste line with injuries. The emergency team exercise was intended to identify any BWXT weaknesses and deficiencies in classification and protective action recommendations in accordance with BWXT's

Emergency Plan, Emergency Preparedness Manual, and licensee conformance with other applicable emergency plan implementing procedures. The inspectors observed the post-exercise critique to compare any inspector-observed weaknesses with those identified by BWXT to verify whether BWXT staff were properly identifying emergency preparedness-related issues and entering them into the CAP, as appropriate.

b. Conclusion

No violations of more than minor significance were identified.

D. Other Areas

1. Observations of Security Personnel and Activities

a. Inspection Scope

During both normal and off-normal plant working hours, the inspectors conducted observations of security force personnel and activities to verify that the activities were consistent with BWXT security procedures and regulatory requirements relating to nuclear plant security.

The inspectors observed a force-on-force tactical response exercise conducted the evening of August 14, 2019, to verify compliance and assess the effectiveness of BWXT's implementation of protective strategies in accordance with NRC-approved security plan and procedures. The inspectors verified that BWXT's critique process identified and captured weaknesses noted during the exercise as required.

These quarterly resident inspectors' observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Conclusion

No violations of more than minor significance were identified.

E. Exit Meeting

The inspectors verified no proprietary information was retained or documented in this report.

- On July 25 and September 12, 2019, regional inspectors presented the radiation protection, environmental protection, and transportation inspection results to BWXT's Vice President and General Manager, Mr. B. J. Burch, and other members of the BWXT staff.
- On October 8, 2019, the resident inspector presented the quarterly inspection results to Mr. B. J. Burch and other members of the BWXT staff.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

<u>Name</u>	<u>Title</u>
J. Burch	Vice President and General Manager
D. Ward	Department Manager, Environmental, Safety, Health, and Safeguards
W. Richardson	Department Manager, Uranium Processing and Research Reactor
A. Rander	Department Manager, Security
D. Spangler	Section Manager, Nuclear Safety and Licensing
L. Morrell	Section Manager, Environmental Protection and Industrial Safety
D. Faidley	Unit Manager, Nuclear Criticality Safety Manager
L. Ragland	Unit Manager, Recovery and Maintenance
C. Terry	Unit Manager, Licensing and Safety Analysis
K. Conway	Unit Manager, Radiation Protection
J. Calvert	Environmental, Safety, Health and Security Program Manager
M. Edstrom	Fire Protection Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

None

INSPECTION PROCEDURES USED

86740	Inspection of Transportation Activities
88030	Radiation Protection (Appendix B)
88045	Effluent Control and Environmental Protection
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LIST OF DOCUMENTS REVIEWED

SAFETY OPERATIONS

88135 and 88135.02 – Plant Operations

Corrective Action Program Records

2015-0424, Fuel Stored in a Non-Fuel Rack inside the Pharmacy Area, Report Date September 24, 2019
2019-0448, Containers in Specialty Fuel Facility Area Lab Bench/Sink Workstation Exceeded NCS Posting Limit, Report Date July 16, 2019
2019-0683, Inadequate Double-Stacking Spacing in Mixed Waste Building (Incident May 16, 2019), Report Date July 16, 2019
2019-0832, Operator Contaminated with Raffinate Waste Solution, Report Date July 16, 2019
2019-0967, RTR Pharmacy Glovebox Glove Failure, Report Date August 22, 2019
2019-1004, Failure of Criticality Accident Alarm System (CAAS) High-Voltage Power Supplies due to Lighting Power Surge, Report Date July 24, 2019
2019-1124, RTRT Compact Charge Weighing Process Vulnerabilities, Report Date August 14, 2019
2019-1346, Inadvertent Fuel Loading in Filler Pharmacy Area, Report Date September 26, 2019

Corrective Action Written as a Result of Inspection Activities

2019-0993, Improper Installation of RTR Highly Enriched Uranium (HEU) Pharmacy Glovebox Pre-Filter, Report Date August 22, 2019

Nuclear Criticality Safety Records

NCS-2019-082, Safety Concern Analysis for Mixed Waste Storage Area Inadequate Spacing for Double Stacking Drums (CA201900683), dated June 12, 2019
NCS-2019-241, Safety Concern Analysis for Overloaded Filler (CA201901346), dated September 23, 2019
NCS Posting 15-19-002, SFF Area Lab Bench/Sink, Rev. 1
NCS Posting 15-34-022, Filler Storage Chest, Rev. 00

Procedures/Instructions

EPR-03-07, Response to Severe Weather, Rev. 20
Job Aid, JA-FM-0119, Pharmacy Operations, Rev. 01
OP-0010101, Filler Fabrication and Operation, Rev. 87
OP-0061234, Maintenance in UPRR, Rev. 55
OP-1001087, Safety Procedures for Boxline Operations/Repairs, Rev. 18 and 19
OP-1008369, Process Monitoring in RTR, Rev. 12
OP-1016063, Contactor Inline Waste Monitoring System, Rev. 5
OP-1041242, Pharmacy Operations, Rev. 7
OP-1046048, BR2 Weighing, Blending, Compacting, HEU-UALX, Rev. 3
RP-07-103, Maintaining and Testing the CIDAS MkXI Criticality Monitoring System, Rev. 07
QWI 4.1.5 (Attach. 2), Radiation Protection Engineering Design Criteria and Guidelines, Rev. 21

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CHG-6747, Install Pressure Relief Devices on the HEU Pharmacy Glovebox, August 14, 2019
Event Sequence 02-19, Force-on-Force Exercise, August 14, 2019

FCSS ISG-12, FCSS Interim Staff Guidance-12, Rev. 1, 10 CFR Part 70, Appendix A - Reportable Safety Events (prepared by Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards)

N-256A, RTR Process Monitoring Process Units 5B and 6B Compacts, Rev. 3

NMCTWR No. 2019-006, Bay 16 Pharmacy Glovebox Ventilation and Ancillary System Survey, July 17, 2019

RPTWR No. 2004-014, Evaluation of a Glovebox Fire to Environmental and Occupational 10 CFR 70.61 Limits, December 15, 2004

RPTWR No. 2004-015, Evaluation of the Effects of a Large Scale Industrial Fire on Aluminum Fuel Assemblies, November 16, 2004

RPTWR No. 2005-017, Risk Assessment of Severity of Radiological Consequences for Fires and Spills Involving Radioactive Materials under SNM-42, March 31, 2008

RPTWR No. 2019-021, QWI 4.1.5 Attachment 2, Criterion 3.6 RP Exemption, July 25, 2019

SAR 15.12, Liquid and Solid Waste Handling Processes in Uranium Recovery, Rev. 81

SAR 15.19, Appendix A, dated May 3, 2018

SAR 15.19, Waste Handling, Vacuum System, and Ventilation for SFF Operations, Rev. 72

SAR 15.21, Low-Level Radioactive Waste Processes Waste Operations, Rev. 77

SAR Appendix 15.21, Rev. 30

SAR 15.22, RTRT (Research and Test Reactor and Targets) Fuel Powder and Compact Process, Rev. 91

SAR Appendix 15.22, dated May 29, 2019

SER 17-016 (Phase 2), Relocate HEU Pharmacy Glovebox and ANSTO Powder Glovebox, September 18, 2017

88135.04 – Operational Safety

Corrective Action Program Records

2016-0209, Cleaning of Pharmacy Storage Shelves, Report Date September 12, 2019

2016-0434, Cart Containers not Properly Identified, Report Date September 12, 2019

2016-0679, Incorrect Revision of Posted Pharmacy Operations Procedure Sheet, Report Date September 12, 2019

2016-0874, Incomplete SAR Information for Filler Area Fuel Transport Cart, Report Date September 24, 2019

2016-1006, A2 Material Stored in Fire-Resistant Cabinets without Stainless Steel Inserts, Report Date September 12, 2019

2016-1390, Use of Incorrect Revision of Calculation Form M11-B-017, Report Date September 12, 2019

2017-0169, Use of Incorrect Container in Pharmacy Area, Report Date September 12, 2019

2018-0896, Unknown Residue in Pharmacy Weight Station 8, Report Date September 24, 2019

2018-0921, Water Identified on Pharmacy Fuel Cart Bumper, Report Date September 24, 2019

2018-1099, Water Identified on Pharmacy Fuel Cart, Report Date September 24, 2019

2018-1570, Transport Cart Cleaning Documenting/Tracking, Report Date September 12, 2019

Drawings

LT-4186, Vial Spacer Fixture for Filler Transport Cart, Rev. 0, Sheet 1 of 1

LT-4187, Vial Holders & Inserts, Rev. 0, Sheet 1 of 1

LT-4751, Transport Cart Cover and Spacing Fixtures, Rev. 5, Sheets 1 to 5

Nuclear Criticality Safety Records

NCS-2012-063, NCS Safety Analysis Revising the Safety Basis of the Filler Area Fuel Transport Cart per CR-1038349

NCS-2018-101, NCS Violation & Observation Summary – 2nd Quarter 2018, July 19, 2018
NCS-2019-004, NCS Violation & Observation Summary – 4th Quarter 2018, January 24, 2019
NCS-2019-101, NCS Violation & Observation Summary – 2nd Quarter 2019, July 31, 2019
NCS Posting 15-32-001, Mass/Moderator Glovebox, Rev. 02
NCS Posting 15-32-007, Filler Area Glovebox, Rev. 01
NCS Posting 15-32-010, Criticality Safety Limits Filler Area Fuel Transport Cart, Rev. 01
NCS Posting 15-32-011, Storage Columns, Rev. 02
NCS Posting 15-32-012, Liquid Catch Column, Rev. 02
NCS Posting 15-32-013, Well Counter Work Station, Rev. 01
NCS Posting 15-32-015, Pharmacy Work / Storage Location, Rev. 02
NCS Posting 15-32-19, Filler Area Fuel Transport Cart, Rev. 01

Procedures/Instructions

M11-B-016, Pharmacy U235 and Moderating Material Log, Rev. 11
M11-B-017, Can Calculations, Rev. 11
M11-F-038, U235 and Moderating Materials Control List - Pharmacy Operations, Rev. 14
OP-0010101, Filler Fabrication and Operation, Rev. 87
OP-1003724, Filler Manufacturing Operations Areas Safety Controls, Rev. 30
OP-1041242, Pharmacy Operations, Rev. 7

Work Orders

20253326, Station 1 Bay 17 Replace Filters 1Y FMO, completed on September 4, 2019
20253327, Station 2 Bay 17 Replace Filters 1Y FMO, completed on September 4, 2019
20253328, Glovebox STA-2 Replace Filters 1Y FMO, completed on September 4, 2019
20253329, Glovebox STA-4, Replace Filters 1Y FMO, completed on September 4, 2019
20253330, Glovebox STA-5 Replace Filters 1Y FMO, completed on September 4, 2019
20253331, Glovebox STA-6 Replace Filters 1Y FMO, completed on September 4, 2019
20253332, Glovebox STA-7 Replace Filters 1Y FMO, completed on September 4, 2019
20253333, Glovebox STA-8 Replace Filters 1Y FMO, completed on September 4, 2019
20253334, Glovebox STA-9 Replace Filters 1Y FMO, completed on September 4, 2019
20253335, Glovebox STA-10 Replace Filters 1Y FMO, completed on September 4, 2019
20253336, Glovebox STA-11 Replace Filters 1Y FMO, completed on September 4, 2019
20253337, Glovebox STA-12 Replace Filters 1Y FMO, completed on September 4, 2019
20253338, Glovebox STA-13 Replace Filters 1Y FMO, completed on September 4, 2019
20253339, Can Cleaning Hood Replace Filters 1Y FMO, completed on September 4, 2019
20253340, Filler Breaker Box Replace Filter 1Y FMO, completed on September 4, 2019
20253341, Puck Press Replace Filters 1Y FMO, completed on September 4, 2019
20253342, Lump Breaker Box Replace Filters 1Y FMO, completed on September 4, 2019
20253343, Maint/Clean Hood Replace Filters 1Y FMO, completed on September 4, 2019

Other Documents

2016, 2017, and 2018 Fuel Pharmacy Ventilation Ductwork Surveys
COM-59200
Inspect & Track Outside Report for Pharmacy Smoke Detectors, Report Range: July and August, 2019
SAR 15.32, Pharmacy Operations, Rev. 40

88135.05 – Fire Protection Quarterly

Other Documents

CHG-5131, Replace/Configure Fire Protection/Service Water Piping and Valves North of Bay 8A, June 27, 2019
HS-OP-002 Att4, Industrial Health and Safety SER Release for SER 19-008 (Phase 2) Pre-Fire Plan: Mt. Athos Site (Lynchburg, VA), June 17, 2015

RADIOLOGICAL CONTROLS

88135.02 – Radiation Protection Quarterly

Procedures

OP-0061234, Maintenance in UPRR, Rev. 55
OP-0061556, Recovery Conversion Furnace Operation, Rev. 21
RP-06, Radiation Work Permit, Rev. 14

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Corrective Action Program Records

2018-1001 2019-0656 2019-0677

Procedures

OP-1001087, Operating Procedure for Safety Procedures for Boxline Operations/Repairs, Rev. 19
RP-02-006, Form 3, On-Site Clinic Contaminated Patient List, Rev. 0
RP-02-007, Enclosure Air Flow Measurements in Controlled Areas, Rev. 10
RP-02-009, Air Flow Survey at the Interface of Controlled & Uncontrolled Areas, Rev. 12
RP-04-007, The Collection and Analysis of Personal Air Samples, Rev. 22
RP-04-008, Fix Air Sampling, Rev. 28
RP-05-001, Respirator Issuance, Rev. 21
RP-05-002, Quantitative Fit Testing, Rev. 16
RP-05-003, Respirator Cleaning, Inspection, and Maintenance, Rev. 15
RP-05-004, Sampling of Air Used for Supplied Air Line Respirator, Rev. 13
RP-05-006, Qualification of Personnel for the Use of Respiratory Protection Equipment, Rev. 17
RP-05-009, Inspection of the Respiratory Protection Program, Rev. 10
RP-05-011, Respiratory Protection Selection & ALARA Evaluations, Rev. 6
RP-14-001, Area Radiation Postings, Rev. 9

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Bioassay Analysis Results, June 3, 2019 (GEL Laboratories, LLC)
Internal Audit Summary Report 258-3E, Radiation Protection (External Exposure Control), 2nd Quarter, May 2019
Internal Audit Summary Report 258-3C Radiation Protection (Respiratory Protection), 3rd Quarter, January 2019
January to May 2019 ALARA Meeting Notes/Minutes
Occupational Radiation Exposure Report 16520NTN, June 24, 2019
Occupational Radiation Exposure Report 33903EXT, April 15, 2019
Occupational Radiation Exposure Report 33903MON, June 24, 2019
Occupational Radiation Exposure Report 33903QTR, April 15, 29 and May 22, 2019
Pressure Differentials across HEPA Filter, January to July 2019
Radiation Protection Audits, Inspections, 2nd Quarter 2019
Report of Analysis/Certificate of Conformance, dated May 22, 2019

RP-02-007, Form 1, Enclosure Air Flow Measurements in Controlled Areas, Rev. 11, January to July 2019 (dated January 1, 2018)
RP-02-007, Form 2, Enclosure Air Flow Measurement Check List, Rev. 13, January to July 2019 (dated September 3, 2018)
Safety Review Committee Meeting Minutes for April 4, 2019

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2018 ALARA Report
N-517, 10 CFR 70.72 Change Evaluation Checklist (U), Rev. 10 (Glovebox in RTR)
Radiation Protection Manual: RP-01, ALARA; RP-03, External Radiation Exposure Control; RP-04, Internal Radiation Exposure; RP-05, Respiratory Protection; RP-10, Radiation Protection Training
Upcoming RP-Related Modifications: COM-73236 and COM-73598

86740 – Inspection of Transportation Activities

Corrective Action Program Records

2018-0994, 2017 Nuclear Materials Control Inadequate Audits
2018-1305, Bill of Lading Hazard Class '7' Missing on Bill of Lading, September 26, 2018
2019-0891, 2018 Audit 261-6B1 was not conducted in 2018
2019-0926, Dirt Rail Car Shipped Prior to Licensee Procedural Authorization and Completion of Nuclear Material Transaction Report (Form 741) within 10 Working Days in Accordance with 10 CFR 74.15

Procedures/Instructions

OP-0168902, Movement and Positioning of Railcars by BWXT Personnel, Draft Rev. 12, (proposed addition of rail car movement restrictions)
QWI 15.1.5, Shipment of Radioactive Materials, Rev. 11
RMS-01, Identification and Communication Requirements for Shipment of Radioactive Materials, Rev. 8
RMS-02, Package Selection and Use for Shipment of Radioactive Materials, Rev. 15
RMS-02, Attachment 2, CSIR for LSA/SCO Packaging, Rev. 5
RMS-02, Attachment 26, CUSIR for C of C, ES3100 Package, Rev. 22
RMS-21, Classification, Characterization, Packaging, and Preparation of Low-Level Radioactive Waste and Mixed Waste, Rev. 22

Other Documents

Audit 261-6B2 Nuclear Materials Control (Shipping Quality Control Assurance Plan Elements), conducted August 2018 for the years 2017 through August 2018, Audit Report approved December 13, 2018
Bill of Lading No. ZBFH-VDM-1276, for Carrier CSXT, 1 Gondola, UN 3321 Radioactive Material, LSA (contaminated dirt), shipped June 6, 2019, prior to the preparation of all shipping papers
BWXT Technologies NOG-L Carrier Identification LSA/SCO Shipment (Carrier Certification), Shipment ZBFH-VDM-1276
Critique Meeting Minutes, CA2019-0926, Dirt Railcar Released Prior to Authorization, July 16, 2019
CSIR for LSA/SCO Packaging, RMS-2 Attachment 2, Manifest ZBFH-VDM-1276, dated July 10, 2019
DOE/NRC Form 741 Nuclear Material Transaction Report for Manifest 0712-09-0064, approved July 10, 2019

Hazardous Material Shipment Form, Manifest 0712-09-0064, June 26, 2019
NRC Form 618, Certification of Compliance for Radioactive Material Packages, Certificate 5086, Rev. 15, DOCKET 71-5086, id usa/5086/b(u)f, Expiration November 30, 2019
QA Shipping Program Biennial Audit Matrix, JA-SQ-008, Audit Plans for Odd and Even Years
Radioactive Material Packing List, Shipment ZBFH-VDM-1276, Truck Seal 726046, dated July 10, 2019
Radiological Survey Form for Waste Shipments Vehicle, Shipment ZBFH-VDM-1276, dated July 9, 2019
Rail Shipment Second Person Verification Form E4-1035, Rev. 0, for Rail Car ENVX 206114 (Manifest 0712-09-0064)
Rail Shipment Second Person Verification Form E4-1035, Rev. 1, Revised per CA2019-0926
Uniform Low-Level Radioactive Waste Manifest 0712-09-0064, Authorized July 10, 2019
Vehicle Inspection for Exclusive Use Shipments Via Commercial Company, CSX Rail, Shipment ZBFH-VDM-1276, dated July 9, 2019
Waste Shipment Checklist, Manifest 0712-09-0064

88045 – Effluent Control and Environmental Protection

Procedures

RP-07-009, Environment Air Sample Flow Meter Calibration, Rev. 9
RP-07-017, Tennelec Services S5E Calibration and Operation, Rev. 14
RP-07-079, Calibration and Operation of the Canberra In-Line Liquid Waste Monitors, Rev. 8
RP-07-105, Canberra LB 4200 Calibration and Operation, Rev. 5
RP-08-003, Sample Collection from Stacks and Their Analysis, Rev. 28
RP-08-004, Exhaust Stack Velocity and Filter Pressure Differential Movements, Rev. 14
RP-08-017, Preparing the Semi-Annual Effluent Monitoring Report, Rev. 10
RP-08-018, Analysis of Air Sampling Impinges or Mass Loaded Filters, Rev. 22
RP-08-022, Ground Water Sampling, Revision 12

Records

2018 ALARA Report
Annual Calibration and Weekly Reference of the In-Line Monitor
Deregulated Waste Processing – Sludge, Sanitary Inlet Liquid, Sanitary Outlet, De-Nitrogen Filter Cake Samples
Environmental Corrective Action Program
Environmental Media Samples for Soil, Sediments, Vegetation, and Water
Environmental Monitoring Boundary Air Samples
Final Effluent Pond Sr-90 Review
Final Liquid Effluent Composite Analysis Results
Gaseous Effluents (for 23 operating stacks)
Liquid Effluents for Offsite Dose
LTC 50 Meters, Analytical Chemistry, and Radiological Controls Stack Samples
LTC Semi-Annual Effluent Report
Sanitary Cake Samples
Semi-Annual Effluent Monitoring Report
Well Water Samples, 2018 FEP-1 Consolidated Review

FACILITY SUPPORT

88135.19 – Post-Maintenance Testing

Procedures/Instructions

OP-0061129, Drum Dryer Collection of Uranyl Nitrate Crystals, Rev. 56

OP-0061234, Maintenance in UPRR, Rev. 55

Other Documents

SAR 15.09, Main Extraction and Drum Dryer Process in Uranium Recovery, Rev. 104

88135.22 – Surveillance Testing

Corrective Action Program Records

2019-1184, Recovery High-Level Dissolver Hydrogen LEL Detectors Would Not Calibrate,
Report Date August 23, 2019

Work Orders

20269271, High- and Low-Level Dissolvers Airflow Checks in Recovery, August 23, 2019

20269315, Replace Recovery High-Level Dissolver Hydrogen LEL Detectors, August 28, 2019

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Change Request 1027134, New SAP MP to Measure Recovery Hood Airflow, Rev. 00

MP 1910, Calibration of Recovery High-Level Dissolver Hydrogen LEL Detectors

MSA Ultima® X Series Gas Monitors Instruction Manual

SAR 15.5, High-Level Dissolution Process in Uranium Recovery, Rev. 141

SAR 15.6, Low-Level Dissolution Process in Uranium Recovery, Rev. 74

88135.02 – Identification and Resolution of Problems

Other Documents

IA-REG-2019-06-01, QA Internal Audit Summary Report for RP, NCS, and EP NRC Compliance
Audit, July 9, 2019

Q7-600J, Audit Plan for IA-REG-2019-06-01, Rev. 6

SNM-42, License Application Chapter 11.5, Audits and Assessments

88135 – Emergency Preparedness

Drawing

EOC_1004, Initial Emergency Assessment Flow Chart, Rev. 39

Procedures

EPR-06-04, Emergency Drills, Rev. 19

EPR-02-04, Notification of Off-Site Agencies during an Emergency, Rev. 33

Other Documents

BWXT NOG-L, Emergency Plan, Rev. 32