



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

April 23, 2021

Mr. James J. Bittner
Vice President and General Manager
Nuclear Operations Group, Inc.
BWXT Nuclear Operations Group, Inc.
P.O. Box 785
Lynchburg, VA 24505-0785

SUBJECT: BWXT NUCLEAR OPERATIONS GROUP, INC. – INTEGRATED INSPECTION
REPORT 07000027/2021001

Dear Mr. Bittner:

On March 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at BWXT Nuclear Operations Group, Inc. On April 22, 2021, the NRC inspectors discussed the results of this inspection with R. Freudenberger and other members of your staff. The results of this inspection are documented in the enclosed report.

No violations of more than minor significance were identified during this inspection.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

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

Docket No. 07000027
License No. SNM-42

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

SUBJECT: BWXT NUCLEAR OPERATIONS GROUP, INC. – INTEGRATED INSPECTION REPORT 07000027/2021001 dated April 23, 2021

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U.S. NUCLEAR REGULATORY COMMISSION

INSPECTION REPORT

REGION II

Docket Number: 07000027

License Number: SNM-42

Report Number: 07000027/2021001

Enterprise Identifier: I-2021-001-0096

Licensee: Nuclear Operations Group, Inc.

Facility: BWXT Nuclear Operations Group, Inc.

Location: Lynchburg, VA 24505

Inspection Dates: January 01, 2021 to March 31, 2021

Inspectors: A. Alen, Senior Resident Inspector
N. Peterka, Fuel Facility Inspector
T. Sippel, Fuel Facility Inspector

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

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at BWXT Nuclear Operations Group, Inc., in accordance with the fuel cycle facility inspection program. This is the NRC's program for overseeing the safe operation of licensed fuel cycle facilities. Refer to <https://www.nrc.gov/materials/fuel-cycle-fac.html> for more information.

List of Violations

No violations of more than minor significance were identified.

Additional Tracking Items

None.

REPORT DETAILS

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.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Inspections were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2600, "Fuel Cycle Facility Operational Safety and Safeguards Inspection Program." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

SAFETY OPERATIONS

IP 88015 - Nuclear Criticality Safety

The inspectors evaluated selected aspects of the licensee's Nuclear Criticality Safety (NCS) program to verify compliance with selected portions of Title 10 of the Code of Federal Regulations (10 CFR) 70, "Domestic Licensing of Special Nuclear Material," including 70.24, 70.61, and 70.62; Chapter 5, "Nuclear Criticality Safety," of the facility's license application; and applicable licensee procedures.

Criticality Analysis (IP Section 02.01)

The inspectors interviewed licensee NCS staff and reviewed nuclear criticality safety evaluations (NCSEs), and supporting documents, to verify compliance with Title 10 of the *Code of Federal Regulations* (CFR) 70, "Domestic Licensing of Special Nuclear Material," and applicable sections of the license application. Specifically, the inspectors interviewed licensee NCS engineers and reviewed the following documents related to the Lynchburg Technology Center (LTC), the container storage facility, and other operations:

- NCS-PA-27-00001, "Nuclear Criticality Safety Evaluation of Element Operations," Rev. 0
- NCS-PA-42-00001, "Nuclear Criticality Safety Evaluation for 235R001 Shipping Container Storage and Handling Core Assembly, the Container Storage Facility, and the Railyard Storage Building," Rev. 0, including the review of accident sequences CSBR-1, CSBR-7, which cover various rack collapse and loss of spacing scenarios, and reviewing the basis for why the licensee screened certain accident sequences as not credible.
- NCS-PA-37-00005, "Nuclear Criticality Safety Process Analysis of Higher Tier Vertical Operations," Rev. 0, including the review of what-if analysis, normal, credible abnormal, and non-credible accident sequences.
- NCS-TR-00049, "Nuclear Criticality Safety Technical Reference for Higher Tier Pickling," Rev. 0, because it contained a variety of calculations and information supporting the licensee's evaluation of criticality accident sequences in NCS-PA-37-00005.
- NCS-TR-00055, "Nuclear Criticality Safety Technical Report for the Container Storage Facility, 235R001 Shipping Container, and Supplemental Core Calculations," Rev. 0, because it contained a variety of calculations and information supporting the licensee's evaluation of accident sequences and items relied on for safety (IROFS) in NCS-PA-42-00001.

Criticality Implementation (IP Section 02.02)

The inspectors selected engineered and administrative controls from the licensee's integrated safety analysis (ISA) summary and reviewed process and system descriptions, drawings, plant walkdowns, and operator interviews to verify that the controls were implemented in accordance with applicable requirements in the license application. Specifically, the inspectors interviewed licensee staff and reviewing the following controls associated with the NCSEs listed above:

- Passive engineered spacing control IROFS in the container storage facility,
- administrative mass control IROFS in the LTC, and
- administrative piece count and poison control IROFS for higher tier immersion operations.

Criticality Operational Oversight (IP Section 02.03)

The inspectors assessed the NCS staff's oversight of plant operators, procedures, and operations of systems involving special nuclear material to verify compliance with 10 CFR 70 and applicable sections of the license application. Specifically, the inspectors performed the following activities:

- Interviewed LTC staff concerning criticality hazards and control methods including monitoring for long-term accumulations,
- observed a licensee NCS engineer conduct a weekly audit of higher tier operations and reviewed the resulting audit report, and
- interviewed higher tier immersion operators concerning criticality hazards and control methods including the use of poison fixtures during operations.

Criticality Programmatic Oversight (IP Section 02.04)

The inspectors reviewed NCS program procedures, and audits to verify compliance with 10 CFR 70 and applicable sections of the license application. Specifically, the inspectors interviewed licensee NCS staff and reviewed the following documents:

- Most recent external audit of the licensee's NCS program which was documented in the 2020 Triennial Assessment Report dated October 2020.
- Most recent revision to the licensee's procedure for maintaining and testing their criticality accident alarm system (CAAS), RP-07-103, "Maintaining and Testing the CIDAS MkXI Criticality Monitoring System," Rev. 8.

Criticality Incident Response and Corrective Action (IP Section 02.05)

The inspectors reviewed the licensee's CAAS and corrective action program (CAP) to verify compliance with 10 CFR 70 and applicable sections of the license application. Specifically, the inspectors reviewed documents, and interviewed licensee staff concerning the following:

- Recent NCS events, their associated corrective actions, and the reportability determination documented by licensee NCS staff including corrective action reports CA202001190, CA202001745, CA202001784, CA202100033,
- recent CAAS maintenance records and issues including corrective action commitment COM-86190, and
- recent NCS evacuation drill records and performance for 2018 and 2019.

IP 88135.02 - Plant Status

The inspectors routinely conducted walkdowns of licensee areas, observed operators, material control and accounting and security force personnel, inspected postings and licensee guidance documents, interviewed plant personnel, and discussed the results of operational and shift turnover meetings to gain insight into the status of facility activities, risk-inform the selection and implementation of the appropriate core inspection procedures, and ensure compliance with license and regulatory requirements.

Plant Tours (IP Section 03.01)

The inspectors performed weekly tours of plant operating areas housing special nuclear material (SNM) to verify that licensed activities were conducted safely and in compliance with the license 10 CFR 70.

Status Meetings (IP Section 03.02)

The inspectors, on a routine basis, attended and reviewed the results of scheduled licensee meetings to determine plant status and awareness of site activities so that inspection resources were appropriately focused on those activities with the higher safety significance.

Record and Log Reviews (IP Section 03.03)

The inspectors reviewed selected records and logs to assure they were developed, maintained, and reported as required by applicable license and regulatory requirements.

Identification and Resolution of Problems (IP Section 03.05)

The inspectors reviewed selected issues to determine if the licensee was entering equipment, human performance, and other performance issues in a formalized program to identify, track and assure correction of safety and safeguard significant problems in accordance with 10 CFR 70.62(a)(3) and applicable license requirements.

- CA 2020-1157, SNM-bearing container inadvertently dropped. Incident date 08/13/2020. Report date 03/01/2021.
- CA 2020-1190, Component over-pickled. Incident date 08/15/2020. Report date 01/25/2021.
- CA 2020-1716, UR annular waste tanks' sight glass (IROFS) degraded. Incident date 12/02/2021. Report date 03/02/2021.
- CA 2020-1745, Daily assays for area waste drums. Incident date 12/02/20. Report date 03/01/2021.
- CA 2021-0033, CAAS fault on 'Blue Loop'. Incident date 01/07/2021. Report date 03/10/2021.
- CA 2021-0085, UR wet scrubber loss of primary fan ventilation. Incident date 01/16/21. Report date 03/10/2021.

Event Review (IP Section 03.06)

The inspectors reviewed the plant event listed below to determine if the event warranted the use of formal event review criteria and to evaluate the licensee's response was, as applicable, in accordance with 10 CFR Parts 40.60 (source material), 70.50 (mainly radiological events), 70.52 (criticality and safeguards events), 71.95 (transportation events), 73.71 (safeguards events), and 20.2201, 20.2202, and 20.2203 (radiological and environmental events).

- CA 2021-0024, Evaluation of fire hazard associated with the process exhaust ventilation of Specialty Fuel Facility (SFF) workstation furnace, WS-300, due to potential oxygen in-leakage. Report date 03/10/2021.

Audits (IP Section 03.07)

The inspectors reviewed the internal audit listed below to determine whether they have been performed in accordance with the license application.

- Radiation Protection Audit - 4th Quarter 2020

Radiation Work Permit (RWP) (IP Section 03.09)

The inspectors reviewed and observed the RWP listed below to determine whether it contained the information required by Chapter 4, "Radiation Safety;" of the license application, the Radiation Protection Manual; and implementing procedures:

- RWP 21-00051, "Bays 14A and 15A Glovebox Cleanout," Rev. 1

Annual Security and Emergency Preparedness Drills/Exercises (IP Section 03.10)

The inspectors observed the licensee's performance during the security force-on-force (FOF) tactical response exercise evolution listed below to determine it was implemented in accordance with 10 CFR 73.46(b)(9):

- FOF tactical response exercise conducted on March 24, 2021.

IP 88135.04 - Resident Inspection Program Operational Safety

The inspectors evaluated whether the material condition and as-found configuration of selected site structures, systems, and components, documentation, personnel, and IROFS to verify compliance with 10 CFR Part 70, the license, the safety analysis report (SAR) and/or license application, and licensee policies and procedures; and determine whether they are appropriate, available, and reliable to protect worker and public safety during normal, off-normal, and accident conditions.

Operations Safety Walkdown (IP Section 03.01)

The inspectors evaluated the operational safety of the systems, sub-systems, and/or process listed below associated with SAR 15.38, "Core Assembly, Disassembly, and Railyard Storage," Rev. 39.

- Fuel cell assembly process
- Power unit assembly process
- Area storage SSCs

IP 88135.05 - Resident Inspection Program Fire Protection (Annual/Quarterly)

The inspectors evaluated the operational status and material condition of fire protection systems, structures, and components (SSCs) to verify compliance with the fire protection program as described in Chapter 7, "Fire Safety" of the license application and the National Fire Protection Association 801, "Standard for Fire Protection for Facilities Handling Radioactive Materials," as required.

Fire Area Walkdown (IP Section 03.01)

The inspectors walked down and evaluated the fire area(s) listed below:

- Vault 7, Sample Room, and Shipping and Receiving
- Railyard Storage Building

IP 88135.17 - Permanent Plant Modifications

The inspectors evaluated implementation of the configuration management system for facility changes or modifications to ensure that safety-related systems, structures, and components (i.e., IROFS or other credited safety controls) could adequately perform their intended safety function and that changes did not adversely impact the operability and safety of the facility.

IP 88135.19 - Post Maintenance Testing

The inspectors evaluated post-maintenance test activities to verify compliance with license application Chapter 11, "Management Measures," and test procedures and/or work order (WO) instructions to confirm functional capability of the IROFS and/or safety control(s) following maintenance.

Post-Maintenance Testing (IP Section 03.01)

The inspectors reviewed the three post-maintenance tests listed below. Tests were either observed directly or test results were reviewed.

- SER 20-004, "Uranium Recovery New Fire Protection Sprinklers Hydrostatic, Pneumatic, and Flow Switch Pre-Operational Test," conducted on December 23, 2020, and January 8, 2021
- WO 20296557, "Replacement of SFF Workstation (WS) 145 Cooling Water Temperature Controller IROFS," conducted on January 15, 2021
- WO 20297287, "SFF WS-145 Process Ventilation Pressure/Gauge IROFS Troubleshooting," conducted on January 22, 2021

IP 88135.22 - Surveillance Testing

The inspectors evaluated IROFS and safety controls that required periodic surveillance and/or calibration tests to ensure they were available and reliable to perform their function when needed, to comply with license application Chapter 11, "Management Measures," and the performance requirements of 10 CFR 70.61 and 70.62, and to maintain their operational readiness consistent with the Integrated Safety Analysis.

Surveillance and Calibration Testing (IP Section 03.01)

The inspectors reviewed the surveillance and/or calibration tests listed below. Tests were either observed directly or test results were reviewed.

- MP-4041, "Quarterly Boron Sampling of RTR Arc-Melt Furnace Cooling Water," conducted on February 4 and 5, 2021

INSPECTION RESULTS

No violations of more than minor significance were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On April 22, 2021, the inspectors presented the integrated inspection results to R. Freudenberger and other members of the licensee staff.
- On January 28, 2021, the inspectors presented the nuclear criticality safety inspection results to B. J. Burch and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
88015	Calibration Records		NOG-L CIDAS MkXI Criticality System Calibration	12/28/2020
	Drawings	JJA1_1000E	Container Storage Building First Floor Plan, Enlarged Plans, and Details	04/14/2016
		JJA1_1001E	General Arrgmt. Container Storage Bldg. FLR Plan, Mezz Plan, Sections & Details	04/14/2016
	Engineering Evaluations	NCS-2020-071	NCS Safety Analysis for SER 20-010, Phase 1 to Increase the NCS Mass Limit for TRISO Workstation 250/300	10/21/2020
		NCS-2020-116	NCS Safety Concern of Inline Monitor #2 IROFS per CA202001546	12/08/2020
		NCS-2020-120	NCS Justification Analysis for SER-043, Phase 1, Phase 2, and Phase 3 to Install additional Weld Boxes	12/02/2020
		NCS-2020-124	NCS Safety Concern of Waste Drums in Filler Area CA202001745	12/21/2020
		NCS-2021-001	NCS Safety Concern for Over Pickle Event - CA202001190	01/21/2021
	Miscellaneous	N/A	2018 Evacuation Drill Results	06/29/2018
		N/A	2019 Evacuation Drill Results	08/27/2019
		RP-07-103 Form 4	Functional Test of Speakers and NAWLS	12/30/2020
	Procedures	NCSE-2	Nuclear Criticality Safety Analyses & Qualify Assurance Reviews	Rev. 47
		QWI 02.1.03	Integrated Safety Analysis Methodology	Rev. 18
		QWI 14.1.10	Safety Evaluation of Unusual Incidents	Rev. 18
		QWI 15.1.8	Packaging and Measuring Scrap and Waste	Rev. 13
		RP-07-103	Maintaining and Testing the CIDAS MkXI Criticality Monitoring System	Rev. 8
88135.02	Corrective Action Documents	2021-0030	Fuel dummies in transport cart in excess of NCS posting limit. Incident 1/8/2021	03/10/2021
	Corrective Action Documents Resulting from Inspection	2020-1716	Uranium Recovery Annular Waste Tanks' Sight Glass Degraded, Incident 12/02/2020	03/02/2021
		2020-1745	Daily assays for area waste drums not in accordance with procedures, Incident date 12/02/20	03/01/2021
	Drawings	14AE7_1000	Scrubber Replacement Power Distribution Block Diagram	Rev. 1

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		J2183GH01	Triple SMS4/3KO/15A Switchmode Power Supply System Arrangement	Rev. 2
		J3234HC01	Circuit Diagram 24V DC UPS System - Blue and Yellow Systems	Rev. 1
		J3234HC03	Circuit Diagram Rectifier Cradle	Rev. 0
		UPRR 10060	Workstation 300 Piping & Instrumentation Diagram (P&ID)	Rev. 02
		UPRR-30138	Recovery Scrubber Makeup and Water/Drain P&ID	Rev. 4
		UPRR-30139	Recovery Scrubber Recirculation Line and Sight Glass	Rev. 1
	Engineering Changes	CHG-10041	Switch out Facility Alarm System (FAS) Touchscreen Panel	02/17/2021
		N-130	Functional Specification for Recovery Wet Scrubber (SER14-032 Phase 01, Installation and Testing of 14A Recovery Scrubber Rooftop and Electrical Equipment, 01/19/2017)	
	Engineering Evaluations	NCS-2011-058	NCS Analysis for SER 10-045 Phase 01, "Permanent Shutdown of Downblend" (U)	05/19/2011
		NCS-2020-124	NCS Safety Concern of Waste Drums per CA2020-1745	12/21/2020
		NCS-2021-001	NCS Safety Concern for Over-Pickle Event	01/21/2021
		NCS-2021-007	NCS Safety Concern for Sight Glass in Annular Tank #2 - CA202001716	01/14/2020
		NCS-PA-00021	Nuclear Criticality Safety Evaluation of Low-Level Radioactive Dry Waste Processes	Rev. 2
	Miscellaneous		Conway, Ken C., BWXT NOG-L Radiation Protection Manager, letter to Distribution, Re: RP Audits, Inspections, 4th Quarter 2020	01/18/2021
		N-79	Evaluation of Unusual Incident - CA2021-0024	Completed 01/08/2021
		N/A	Uranium Recovery Wet Scrubber Alarm Criteria - Ladder Diagram	Rev. 14
		N/A	Emergency Preparedness Committee Informational Package	03/08/2021
		NCS Posting 15-21-002	</= 55-Gallon Drum Storage Areas	Rev. 4
		NCS Posting 15-23-013	RTR Plate Cart	Rev. 03
		PSC-5630-RPT-001	Investigation of Damaged Wiring Terminals on Installed CIDAS Panel at BWXT Lynchburg	Rev. 0
SAR 15.12		Liquid and Solid Waste Handling Processes in Uranium	Rev. 83	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Recovery	
		SAR 15.12	Appendix	Rev. 30
		SAR 15.14	Scrubber Ventilation and Vacuum System in Uranium Recovery	Rev. 75
		SAR 15.21	Low-Level Radioactive Waste Processes Waste Operations	Rev. 79
		SAR 15.21	Appendix	Rev. 31
		SAR 15.23	Fuel Plate and Element Fabrication Process RTRT Operation	Rev. 117
		SAR 15.37	Higher Tier Assemblies	Rev. 60
		SAR 15.5	High-Level Dissolution Process in Uranium Recovery	Rev. 142
	Procedures	OP-0021001	Operating Procedure for Pickling	Rev. 90
		OP-0061127	Raffinate/Waste Collection System Operation (U)	Rev. 18
		OP-0061143	Operating Procedure for Uranium Recovery Scrubber Operation (U)	Rev. 35
		OP-0061167	Spill and Leak Handling Emergency Procedure	Rev. 36
		OP-0100110	Handling Scrap and Waste in the Filler Area (U)	Rev. 12
		OP-1000309	NDA Measurement of Waste and Scrap (U)	Rev. 14
		QWI 15.1.08	Packaging and Measuring of Scrap and Waste	Rev. 13
		QWI 17.1.1	Environmental, Safety, Health & Safeguards Audit Program	Rev. 12
		RP-05	Respiratory Protection	Rev. 15
		RP-05-001	Respirator Issuance	Rev. 21
	RP-06	Radiation Work Permit	Rev. 14	
	Work Orders	20241565	Scrubber Recirculation Pump #2 Mechanical Seal Replacement	Completed 01/15/2019
20296888		MM1 Crit Room Thermal Scan	01/19/2021	
88135.04	Corrective Action Documents	2016-1165	Recommendation/Observations from 2016 3rd Quarter NCS Audit of SAR 15.38, Incident 09/07/2016	
		2019-1308	Storage Stand Top Slid onto Working Platform, Incident 09/11/2019	03/10/2021
		2019-1476	Passive Engineering Control Not in Place as Designed per LT-5431, Incident 10/16/2019	03/10/2021
	Drawings	4AA4_1000	Equipment Floor Plan	Rev. 1
		LT-4091	Assembly Storage Stand Tool - Detail of Component Storage Box	Rev. 1
		NNFD-2157	Assembly and Storage Rack	Rev. 2
		NNFD-2158	Assembly and Storage Rack	Rev. 1

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		NNFD-2165	Assembly and Storage Rack	Rev. 3
	Engineering Changes	CHG-0613	Installation of Mechanical Testing Station in Core Assembly	Completed 06/16/2016
		CHG-2167	Update SAR and Appendix 15.38	Completed 05/31/2017
		CHG-3416	Changes to SARs 15.05, 15.06, 15.23, 15.38 per SER 16-023 Phase 01, CHG-3160, CA20170183	Completed 09/26/2017
		CHG-4576	Core Assembly Storage Stand Work Platform	Completed 11/25/2019
		CHG-5549	Storing Cores in Core Assembly Stands	Completed 12/03/2018
		CHG-6207	Core Assembly Storage Stand Modifications	Completed 11/21/2019
		CHG-6717	Core Assembly ID OP Update - Control Rod Transfer 272-214	Completed 07/25/2019
		CHG-7469	Proposed Repairs for Core Assembly Storage Stand Bolt Holes	Completed 06/25/2020
	SER 16-023	Re-Assemble and Relocate 2-Tier Horizontal Rack	11/07/2018	
	Miscellaneous	SAR 15.38	Core Assembly, Disassembly, and Railyard Storage	Rev. 39
Procedures	OP-0170504	Operating Procedure for Implementing Free Draining Controls for Components	Rev. 3	
88135.05	Drawings	17MA1_1001E	Floor Plan	Rev. 15
	Engineering Changes	CR-1019264	Changes to Vault 7 Operations OP	12/21/2004
		CR-1021002	Changes to Vault 7 Operations OP	06/02/2005
	Engineering Evaluations	HS-2001-002	Fire Protection in the Vault 7 and Mitigating Factors	07/09/2001
		NCS-2001-299	Increasing the Combustible Loading in the New Storage Vault	12/16/2004
		NCS-2002-119	Nuclear Safety Release for SER 00-066, Pre-Operational Testing Requirements	06/06/2002
	Fire Plans	N/A	Pre-Fire Plan, Map Section 12A	03/07/2017
	Miscellaneous	FSR-06	Facility Siting Review 6	Rev. 4
		ISAP 01-00008	Fire Historical Data Review for Storage PHA	Rev. 0
		ISAP 01-00018	Fire Loading Analysis, Storage, Sample Room, and Shipping and Receiving Area, SAR 15.33	Rev. 0
ISAP 01-00078		Fire Protection Calculations for the New Storage, SAR 15.33	Rev. 1	
ISAP 01-00080		COSMOS Fire Modeling for New Storage, SAR 15.33	Rev. 0	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		SAR 15.33	Vault 7 Operations	Rev. 42
	Procedures	E4-771	Lifting System Checklist	Rev. 3
		E41-201	Vault 7 Operations	Rev. 25
		E41-209	Operating Instructions for the Walk Behind Lifting System	Rev. 2
		PM10050	Preventive Maintenance Instructions - BPR/RICO Lift Inspection Report - Mechanical	Rev. 1
		PM40031	Preventive Maintenance Instructions - Lift Inspection - 6-Month Electrical	Rev. 1
	Work Orders	20123596	Lift Truck LIF175 is Leaking Fluid	Completed 07/20/2012
		20274558	SC Lift Truck LIF219 6-Month Mechanical Inspection	Completed 01/17/2020
		20274559	SC Lift Truck LIF219 6-Month Electrical Inspection	Completed 01/20/2020
		20275233	SC Lift Truck LIF175 6-Month Mechanical Inspection	Completed 01/17/2020
		20275234	SC Lift Truck LIF175 6-Month Electrical Inspection	Completed 01/21/2020
		20284671	SC Lift Truck LIF219 6-Month Mechanical Inspection	Completed 06/25/2020
		20284672	SC Lift Truck LIF219 6-Month Electrical Inspection	Completed 07/24/2020
		20285447	SC Lift Truck LIF175 6-Month Mechanical Inspection	Completed 08/04/2020
		20285448	SC Lift Truck LIF175 6-Month Electrical Inspection	Completed 07/24/2020
		20295094	SC Lift Truck LIF219 6-Month Mechanical Inspection	Completed 01/26/2021
		20295095	SC Lift Truck LIF219 6-Month Electrical Inspection	Completed 01/19/2021
		20295750	SC Lift Truck LIF175 6-Month Mechanical Inspection	Completed 01/26/2021
		20295751	SC Lift Truck LIF175 6-Month Electrical Inspection	Completed 01/20/2021
88135.19		Calibration	Certificate No.	SFF WS-145 OMEGA RTD Temperature Controller IROFS 07/16/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
	Records	417609	(CS-01889)		
		Certificate No. 417613	SFF WS-145 OMEGA RTD Temperature Controller IROFS (CS-00505)	07/16/2020	
		Certificate No. 417675	SFF WS-145 OMEGA RTD Temperature Controller IROFS (CS-00641)	07/16/2020	
		Certificate No. 423504-2	SFF WS-145 OMEGA RTD Temperature Controller IROFS (CS-05277)	01/07/2021	
		Certificate No. 423504-3	SFF WS-145 OMEGA RTD Temperature Controller IROFS (CS-05278)	01/07/2021	
		Certificate No. 423504-4	SFF WS-145 OMEGA RTD Temperature Controller IROFS (CS-05279)	01/07/2021	
	Corrective Action Documents	2020-1209	SFF WS-145 Ventilation Pressure/Gauge Switch Exceeded Calibration Date, Incident 08/13/2020	12/18/2020	
	Miscellaneous	N/A	OMEGA. 4200A Series RTD Temperature Controller. Operator's Manual M0051/0793		
		N/A	OMEGA. 4001A, 4002A, 4201A, & 4202A Series Temperature Controllers. Operator's Manual M0049/1299		
		SAR 15.18	SFF Dry-End Processing SFF Operation	Rev. 131	
	Procedures	CSP-0327	Gage/Instrument Calibration Procedure	Rev. 5	
		M42-006	Compliance Documentation of Boron Analysis and Boron Addition Record - Pulled/Analyzed Samples Between July 2018 and February 2020	July 2018 - February 2020	
		OP-1001828	Operating Procedure for FAS Interlocks and Furnace Testing	Rev. 37	
		QWI 9.1.7	Preventive/Predictive Maintenance and Safety-Related Controls Testing Program	Rev. 12	
	Work Orders	20288879	Replacement of SFF WS-145 Process Ventilation Pressure/Gauge Switch IROFS	08/13/2020	
	88135.22	Miscellaneous	SAR 15.22	Research Test Reactor and Targets Fuel Powder and Compact Processes	Rev. 98
		Procedures	M42-058	Boric Acid Addition Worksheet for Pre-Mix and Pre-Made Solution (LTC Lab. Sample No. 485)	02/08/2021
			M42-058	Boric Acid Addition Worksheet for Pre-Mix and Pre-Made Solution (Chem. Lab. Sample No. 486)	02/08/2021
			OP-1001075	RTRT Arc-Melting Coolant - Poison Instructions (U)	Rev. 7

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Work Orders	20270452	SC Boron Analysis/Add CHL200 3Mon RTRTO	10/25/2019
		20275172	SC Boron Analysis/Add CHL200 3Mon RTRTO	01/27/2020
		20280439	SC Boron Analysis/Add CHL200 3Mon RTRTO	04/23/2020
		20285357	SC Boron Analysis/Add CHL200 3Mon RTRTO	07/29/2020
		20290660	SC Boron Analysis/Add CHL200 3Mon RTRTO	10/22/2020
		20295488	SC Boron Analysis/Add CHL200 3Mon RTRTO	02/01/2021