



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

April 24, 2024

Robert Schuetz, Chief Executive Officer
Energy Northwest
MD 1023
76 North Power Plant Loop
P.O. Box 968
Richland, WA 99352

SUBJECT: COLUMBIA GENERATING STATION – INTEGRATED INSPECTION
REPORT 05000397/2024001

Dear Robert Schuetz:

On March 31, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Columbia Generating Station. On April 18, 2024, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or 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,

A handwritten signature in black ink, appearing to read "Patricia Vossmar".

Signed by Vossmar, Patricia
on 04/24/24

Patricia J. Vossmar, Chief
Reactor Projects Branch A
Division of Operating Reactor Safety

Docket No. 05000397
License No. NPF-21

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

COLUMBIA GENERATING STATION – INTEGRATED INSPECTION
REPORT 05000397/2024001 – DATED APRIL 24, 2024

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REPORT 05000397/2024001

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ADAMS ACCESSION NUMBER: **ML24115A189**

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000397

License Number: NPF-21

Report Number: 05000397/2024001

Enterprise Identifier: I-2024-001-0002

Licensee: Energy Northwest

Facility: Columbia Generating Station

Location: Richland, WA

Inspection Dates: January 1, 2024, to March 31, 2024

Inspectors: J. Brodlowicz, Resident Inspector
R. Bywater, Senior Project Engineer
D. Dodson, Senior Reactor Inspector
S. Hedger, Senior Emergency Preparedness Inspector
C. Highley, Senior Resident Inspector
C. Kline, Senior Resident Inspector
J. Melfi, Project Engineer
C. Rosales-Cooper, Senior Emergency Preparedness Specialist

Approved By: Patricia J. Vossmar, Chief
Reactor Projects Branch A
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Columbia Generating Station, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

PLANT STATUS

The unit began the inspection period near rated thermal power. On March 10, 2024, the unit was down powered to 29 percent for planned maintenance. The unit was returned to rated thermal power on March 12, 2024. On March 14, 2024, the unit was down powered to 79 percent for planned maintenance. The unit was returned to rated thermal power on March 14, 2024.

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>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed on-site portions of IPs. 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.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Impending Severe Weather Sample (IP Section 03.02) (1 Sample)

- (1) Inspected adequacy of severe weather protections in the service and circulating water structures, diesel generator building, and outside building areas prior to the arctic freeze conditions on January 11, 2024.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) standby liquid control train A on January 4, 2024
- (2) service water loop A on January 22, 2024
- (3) stator cooling water system on February 15, 2024
- (4) emergency diesel generator division 1 on March 19, 2024

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) low-pressure core spray system on March 20, 2024

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (7 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) cable spreading room, fire area RC-2, on January 4, 2024
- (2) reactor building 522-foot elevation, fire area R-1-E522, on January 10, 2024
- (3) emergency diesel generator room 1 and 2, fire area DG-2, DG-3, DG-4, DG-5, DG-8, and DG-9, on January 11, 2024
- (4) reactor building 471-foot elevation, fire area R-1-E471, on January 16, 2024
- (5) service water standby pump houses, fire area SW1 and SW2, on February 13, 2024
- (6) makeup water pump house on February 15, 2024
- (7) radioactive waste demin alley unused rooms level 487-foot elevation, fire area RC-1-E487, on March 5, 2024

Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

- (1) evaluated on-site fire brigade response and de-brief to an announced fire drill at reactor feed pump 1 on January 25, 2024

71111.11Q - Licensed Operator Qualification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during a reactor down power to 62 percent, rod sequence exchange, and loss of a reactor recirculation pump leading to single loop operations on March 10, 2024.

Licensed Operator Qualification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated the loss of the electrical switchgear medium voltage bus on January 24, 2024.

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) elevated risk due to low-pressure core spray surveillance on January 2, 2024
- (2) elevated risk to work on emergency control room chilled water on January 23, 2024
- (3) risk-informed completion times and risk mitigation actions due to diesel generator 2 and service water B pump inoperable on January 24, 2024
- (4) elevated Yellow risk due to stator cooling water heat exchanger cleaning on February 15, 2024

- (5) elevated Yellow risk due to failure of the reactor core isolation cooling quarterly surveillance on March 29, 2024

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (2 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) emergency diesel generator 2 following AHU-21 coil failure on January 24, 2024
- (2) emergency diesel generator 2 bearing sump low level, condition report (CR) 00456622, on March 25, 2024

71111.24 - Testing and Maintenance of Equipment Important to Risk

The inspectors evaluated the following testing and maintenance activities to verify system operability and/or functionality:

Post-Maintenance Testing (PMT) (IP Section 03.01) (4 Samples)

- (1) OSP-SLC/IST-Q701 standby liquid control pumps operability test following relief valve replacement on January 3, 2024
- (2) OSP-CCH/IST-M702 control room heating, ventilation, and air conditioning operability test following work on January 25, 2024
- (3) reactor core isolation cooling valve 90 flush of the seat on March 14, 2024
- (4) emergency diesel generator 2 air handling unit DMA-AH-21 following replacement of damaged cooling coil on March 30, 2024

Surveillance Testing (IP Section 03.01) (4 Samples)

- (1) ISP-RCIC-Q903 RCIC isolation on RCIC steam supply flow high division 2 on January 9, 2024
- (2) OSP-ELEC-B202 emergency diesel generator 2 monthly operability test on January 18, 2024
- (3) OSP-RCIC/IST-Q701 RCIC operability test on March 11, 2024
- (4) OSP-LPCS/IST-Q702 low-pressure core spray system operability test on March 29, 2024

Inservice Testing (IST) (IP Section 03.01) (1 Sample)

- (1) ISP-LPCS/RHR-X301 emergency core cooling system low-pressure coolant injection (LPCI) A and low-pressure core spray pump discharge flow on January 2, 2024

Reactor Coolant System Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) OSP-INST-H101 shift and daily instrument checks (Mode 1, 2, 3) section 9.3 on March 5, 2024

71114.01 - Exercise Evaluation

Inspection Review (IP Section 02.01-02.11) (1 Partial)

- (1) (Partial)
The inspectors evaluated the biennial emergency plan exercise conducted on March 26, 2024. However, at the end of the first quarter 2024, the licensee had not completed its critique process for the exercise. As such, the inspectors had not completed the full evaluation of the exercise and the critique process. The inspectors plan to complete the inspection in the second quarter, and the results of the inspection will be documented in NRC Inspection Report 05000397/2024002.

71114.08 - Exercise Evaluation - Scenario Review

Inspection Review (IP Section 02.01 - 02.04) (1 Sample)

- (1) The inspectors reviewed the licensee's preliminary exercise scenario that was submitted to the NRC on January 18, 2024 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML24018A078), for the exercise scheduled on March 26, 2024. The inspectors discussed the preliminary scenario comments with Jennifer Kuklinski, Manager, Emergency Preparedness, and other members of the emergency preparedness staff on February 20, 2024. The inspectors' review does not constitute NRC approval of the scenario.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (1 Sample)

- (1) January 1, 2023, through December 31, 2023

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (1 Sample)

- (1) January 1, 2023, through December 31, 2023

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (1 Sample)

- (1) January 1, 2023, through December 31, 2023

EP01: Drill/Exercise Performance (DEP) Sample (IP Section 02.12) (1 Sample)

- (1) January 1, 2023, through December 31, 2023

EP02: Emergency Response Organization (ERO) Drill Participation (IP Section 02.13) (1 Sample)

- (1) January 1, 2023, through December 31, 2023

EP03: Alert And Notification System (ANS) Reliability Sample (IP Section 02.14) (1 Sample)

(1) January 1, 2023, through December 31, 2023

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in emergency diesel generator subsystems performance that might be indicative of a more significant safety issue. The inspectors observed a negative trend in performance. This observation is further detailed in the results section of this report.

INSPECTION RESULTS

Observation: Semiannual Trend Review of Issues Associated with Emergency Diesel Generator Subsystems	71152S
<p>The inspectors reviewed the licensee's corrective action program for potential adverse trends in emergency diesel generator subsystem performance that might be indicative of a more significant safety issue. The inspectors observed a negative trend in performance of emergency diesel generator subsystems, including one fuel oil and six ventilation system problems in a 3-month period:</p> <ul style="list-style-type: none">• CR-452870: On November 22, 2023, during a monthly surveillance of DG-2, a fuel oil pipe crack failure and fuel oil leak required the engine to be shut down.• CR-453346: On December 7, 2023, DG-3, mixed air damper 32/2, was found partially open due to a failed motor, which provided a flow path for additional outside air into the DG-3 room. The licensee determined DG-3 was operable in the as-found condition.• CR-454585: On January 18, 2024, during a monthly surveillance of DG-2, a significant leak of service water occurred due to ruptured piping on cooling coil DMA-CC-21. The licensee determined that the cooling coil had been exposed to cold outside air because the outside air/recirculation dampers DMA-AD-21/2 were operating backwards.• CR-454897: On January 29, 2024, during an extent of condition investigation for CR-454585, the licensee found DG-3 face/bypass dampers DMA-AD-31/1 did not spring-return properly on a third attempt after two successful functional checks. One of the DMA-AD-31/1 damper motors had failed. The licensee determined DG-3 was operable prior to the failure.• CR-455030: On February 1, 2024, the NRC identified that two door hinges on DG-2 air handling unit DMA-AH-21 had cotter pins that were not fully engaged in the hinges. The licensee determined the air handling unit was functional in the as-found condition.• CR-455075: On February 3, 2024, during an extent of condition investigation for CR-454585, the licensee found DG-1 air handling unit DMA-AH-11 outside/recirculation dampers would not close completely. Also, the licensee found the DG-1 air handling unit DMA-AH-12 outside/recirculation dampers and face/bypass dampers would not close completely. The condition resulted in approximately six times the evaluated bypass flow evaluated by the room temperature design calculation. The licensee determined DG-1 was operable in the as-found condition.	

- CR-455140: On February 6, 2024, the licensee identified a large temperature difference between the DG-1 and DG-2 rooms. The licensee found that DG-1 temperature controller DMA-TIC-11/2 had a setpoint drift of 24 degrees Fahrenheit and was not controlling temperature properly. The licensee determined DG-1 was operable in the as-found condition.

The inspectors concluded the above examples illustrated a negative trend in performance of emergency diesel generator subsystems. The station has initiated a system vulnerability evaluation for the diesel HVAC system (CR 455790).

EXIT MEETINGS AND DEBRIEFS

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

- On February 20, 2024, the inspectors presented the emergency preparedness exercise scenario inspection results to Jennifer Kuklinski, Manager Emergency Preparedness, and other members of the licensee staff.
- On April 18, 2024, the inspectors presented the emergency preparedness performance indicator verification results to Robert Schuetz, Chief Executive Officer, and other members of the licensee staff.
- On April 18, 2024, the inspectors presented the integrated inspection results to Robert Schuetz, Chief Executive Officer, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Procedures	SOP-COLDWEATHER-OPS	Cold Weather Operations	044
71111.04	Corrective Action Documents	Action Requests	453426, 453635, 454088, 454160, 454270, 454441, 456282, 456283, 456286, 456317, 456381	
	Drawings	M-520	Reactor Building HPSC and LPCS Flow Diagram	105
		M512-2	Flow Diagram - Diesel Oil & Miscellaneous Systems Diesel Generator Building	041
		M512-3	Flow Diagram Diesel Oil & Miscellaneous Systems Diesel Generator Building	042
	Procedures	1.3.76	Integrated Risk Management	068
		1.3.83	Protected Equipment Program	039
		18.1.40	Chemical Cleaning of Generator Stator Cooling Water	000
		OSP-SW-M101	Standby Service Water Loop A Valve Position Verification	054
		SOP-DG1-LU	Emergency Diesel Generator (DIV 1) Valve and Power Supply Lineup	009
		SOP-DG1-STBY	Emergency Diesel Generator (DIV 1) Standby Lineup	024
		SOP-LPCS-STBY	Placing LPCS in Standby Status	002
		SOP-SLC-LU	SLC System Valve and Breaker Lineup	000
	Work Orders		02204557, WR-29176217	
71111.05	Corrective Action Documents Resulting from Inspection		454332	
	Drawings	A-581	Makeup Water Pump House Elevations, Details and Schedules	004
		A-582	Makeup Water Pump House Building Sections	003
		A-583	Makeup Water Pump House Miscellaneous Details	002
	Fire Plans	PFP-DG-BUILDING	Diesel Generator Building	006
		PFP-RB-471	Reactor 471	008
		PFP-RB-522	Reactor 522	008

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		PFP-RW-484-487	Radwaste 484-487	007
71111.11Q	Miscellaneous Procedures	LR002602	Columbia Simulator Scenario Respond to Loss of E-SM-1	000
		ABN-ELEC-SM1/SM7	SM-1, SM-7, SM-75, SM-72, SL-71, SL-73, and SL-11 Distribution System Failures	024
		ABN-POWER	Unplanned Reactor Power Change	020
		ABN-RPS	Loss of RPS	017
71111.13	Calculations	DMA-CC-21 RICT RMTS Report R1	DMA-CC-21 RICT	01/18/2024
	Corrective Action Documents	Action Requests	454601	
	Procedures	1.3.76	Integrated Risk Management	067
		1.3.83	Protected Equipment Program	038
	Work Orders		02192869, 02207944, 02211744, 02212666,	
71111.15	Procedures	OSP-ELEC-M702	Diesel Generator 2- Monthly Operability Test	071
	Work Orders		02217212	
71111.24	Miscellaneous	AR CR 443704	CCH-CR-1B Low Oil Level - Adverse Condition Monitoring Plan	04/26/2023
	Procedures	ISP-LPCS/RHR-X301	ECCS-LPCI(A) and LPCS Pump Discharge Flow (Min. Flow)-CC	007
		ISP-RCIC-Q903	RCIC Isolation on RCIC Steam Supply Flow High Div 2-CFT/CC	019
		OSP-SLC-M101	Standby Liquid Control Valve Alignment	003
		OSP-SLC/IST-Q701	Standby Liquid Control Pumps Operability Test	031
	Work Orders		02114148, 02178048, 02197798, 02205848, 02207944, 02207952, 02211565, 022117441	
71114.01	Corrective Action Documents	Action Requests	428926, 432074, 432408, 432500, 434040, 435460, 436639, 436644, 436878, 438355, 441301, 441611, 443431, 446279, 449562, 451402, 451883, 451890, 452196, 452279, 452306, 453359, 453917, 455316	
	Corrective Action Documents Resulting from Inspection	Action Requests	456734	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous		Columbia Generating Station ERO Team "D" Exercise Report, After Action Report/Improvement Plan	10/26/2021
			Columbia Generating Station ERO EDMG Demonstration Exercise Report, After Action Report/Improvement Plan	11/30/2021
			Columbia Generating Station ERO Team "A" ERO Drill, After Action Report/Improvement Plan	02/22/2022
			Columbia Generating Station ERO Team "B" ERO Drill, After Action Report/Improvement Plan	04/26/2022
			Columbia Generating Station ERO Team "C" ERO Drill, After Action Report/Improvement Plan	06/21/2022
			Columbia Generating Station ERO Team "A" ERO Dress Rehearsal, After Action Report/Improvement Plan	09/13/2022
			Columbia Generating Station ERO Team "A" ERO Exercise, After Action Report/Improvement Plan	10/25/2022
			Columbia Generating Station ERO Team "B" ERO Dress Rehearsal, After Action Report/Improvement Plan	02/06/2024
	Procedures	EPI-21	Drill and Exercise Development and Implementation	19
		1.3.1	Operating Policies, Programs, and Practices	141
		13.1.1	Classifying the Emergency	49 (Minor 002)
		13.1.1A	Classifying the Emergency - Technical Bases	34
		13.10.1	Control Room Operation and Shift Manager Duties	35
		13.10.9	Operations Support Center Manager and Staff Duties	50
		13.11.1	EOF Manager Duties	44 (Minor 005)
		13.11.10	Security Manager Duties	22 (Minor 002)
		13.11.2	Assistant EOF Manager Duties	10 (Minor 001)
		13.11.7	Radiological Emergency Manager Duties	37 (Minor 004)
		13.12.19	JIC Management	25
		13.14.8	Drill and Exercise Program	18
		13.2.1	Emergency Exposure Levels/Protective Action Guides	22

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
				(Minor 002)
		13.2.2	Determining Protective Action Recommendations	20 (Minor 002)
		13.4.1	Emergency Notifications	44 (Minor 002)
		13.5.1	Local, Protected Area or Site Evacuation	31 (Minor 001)
		13.8.1	Emergency Dose Projection System Operations	41
		26525	OSC Health Physics Lead Checklist	8
		SWP-CAP-6	Condition Report Review	30
71114.08	Miscellaneous		Energy Northwest, Columbia Generating Station, ERO Team "B" Exercise, March 26, 2024	01/18/2024
			Energy Northwest, Columbia Generating Station, Plume Phase Exercise, October 25, 2022	08/17/2022
			Energy Northwest, Columbia Generating Station, Plume Phase Exercise, March 24, 2020	01/21/2020
	Procedures	13.1.1A	Classifying The Emergency - Technical Bases	34 (Minor 02)
		13.2.2	Determining Protective Action Recommendations	20 (Minor 02)
		13.4.1	Emergency Notifications	44 (Minor 01)
		13.8.1	Emergency Dose Projection System Operation	40
71151	Corrective Action Documents	Action Requests	440338, 444047, 451768, 452196	
	Miscellaneous		Columbia Generating Station, Alert and Notification System (ANS) Design Report, Revision 2	11/14/2016
			Drill, Exercise, and Actual Events Opportunity Evaluation - PQD Code LR002579, Event #2023-01	01/30/2023
			Drill, Exercise, and Actual Events Opportunity Evaluation - PQD Code LR002537, Event #2023-11	04/04/2023
			Drill, Exercise, and Actual Events Opportunity Evaluation - PQD Code LR002597, Event #2023-24	09/06/2023
			Drill, Exercise, and Actual Events Opportunity Evaluation -	11/20/2023

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			PQD Code L#E000050, Event #2023-27	
	Procedures	13.1.1A	Classifying the Emergency - Technical Bases	34 (Minor 002)
		EPI-18	Emergency Preparedness Performance Indicators	27
		TSI-6.2.22	EP Annual Emergency Response Siren System Activation Test	4 (Minor 002)
		TSI-6.2.32	EP Siren Polling Test	3 (Minor 002)
71152S	Corrective Action Documents	Action Requests	452870, 453346, 454585, 454897, 455030, 455075, 455140	