



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
475 ALLENDALE RD, STE 102
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

May 13, 2024

David P. Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer (CNO)
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 –
INTEGRATED INSPECTION REPORT 05000277/2024001 AND
05000278/2024001

Dear David Rhoades:

On March 31, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Peach Bottom Atomic Power Station, Units 2 and 3. On April 18, 2024, the NRC inspectors discussed the results of this inspection with David Henry, Site Vice President, 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,

Jonathan E. Greives, Chief
Projects Branch 4
Division of Operating Reactor Safety

Docket Nos. 05000277 and 05000278
License Nos. DPR-44 and DPR-56

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 –
 INTEGRATED INSPECTION REPORT 05000277/2024001 AND
 05000278/2024001 DATED MAY 13, 2024

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000277 and 05000278

License Numbers: DPR-44 and DPR-56

Report Numbers: 05000277/2024001 and 05000278/2024001

Enterprise Identifier: I-2024-001-0054

Licensee: Constellation Energy Generation, LLC

Facility: Peach Bottom Atomic Power Station, Units 2 and 3

Location: Delta, PA 17314

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

Inspectors: S. Rutenkroger, Senior Resident Inspector
C. Dukehart, Resident Inspector
P. Cataldo, Senior Reactor Inspector
S. Flanagan, Reactor Engineer
L. Grimes, Senior Resident Inspector
S. Haney, Senior Project Engineer
J. Kepley, Operations Engineer
J. Tiff, Reactor Inspector
A. Ziedonis, Senior Resident Inspector

Approved By: Jonathan E. Greives, Chief
Projects Branch 4
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 Peach Bottom Atomic Power Station, Units 2 and 3, 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

Type	Issue Number	Title	Report Section	Status
NOV	05000277,05000278/ 2023010-01	Failure to Establish Corrective Action for Erosion of Structural Backfill Material in the Pipe Trench	71111.06	Closed

PLANT STATUS

Unit 2 began the inspection period at rated thermal power (RTP). On January 27, 2024, the unit was down powered to 68 percent for main condenser waterbox cleaning. The unit was returned to RTP the following day. On January 29, 2024, the unit automatically shutdown due to a main generator lockout caused by a failure of the Audio Tone trip system. The unit was restarted on January 30, 2024, synchronized to the grid on January 31, 2024, and returned to RTP on February 1, 2024. On March 8, 2024, the unit was down powered to 63 percent for a control rod pattern adjustment and returned to RTP the following day. The unit remained at or near RTP for the remainder of the inspection period.

Unit 3 began the inspection period at RTP. On March 1, 2024, the unit was down powered to 65 percent for a control rod pattern adjustment and main turbine valve testing and returned to RTP the following day. The unit remained at or near RTP for the remainder of the inspection period.

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

Seasonal Extreme Weather (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions in the inner greenhouse, circulating water pump structure, emergency diesel generator (EDG) building, and outside areas on January 16, 2024

71111.04 - Equipment Alignment

Partial Walkdown (IP Section 03.01) (4 Samples)

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

- (1) Unit 2, '2A' core spray loop, on January 17 and 18, 2024
- (2) Unit 3, high-pressure coolant injection (HPCI) during reactor core isolation cooling (RCIC) maintenance, on February 7, 2024
- (3) Unit 2, residual heat removal (RHR) 'A' loop, on February 22, 2024

- (4) Unit 3, RCIC system, with the HPCI system out of service for planned maintenance, on March 4 and 5, 2024

71111.05 - Fire Protection

Fire Area Walkdown and Inspection (IP Section 03.01) (5 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) Unit 2, fire area PF-5H, reactor building general area focused on a fire breach permit associated with door 184, on February 5, 2024
- (2) Unit 2, multiple fire areas for degraded electrical cable, on February 12, 2024
- (3) Unit 3, fire area PF-117, emergency battery and switchgear rooms, on February 21, 2024
- (4) Unit 3, fire area PF-5J, reactor building general area, on February 29, 2024
- (5) Unit common, fire area PF-78H, cable spreading room, on March 6, 2024

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

- (1) The inspectors evaluated the onsite fire brigade training and performance during an unannounced fire drill on February 21, 2024

71111.06 - Flood Protection Measures

Flooding (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated that flood protection barriers, mitigation plans, procedures, and equipment are consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding on January 23, 2024. In addition, the inspectors reviewed Constellation's response to Notice of Violation (NOV) 05000277,05000278/2023010-01, "Failure to Establish Corrective Action for Erosion of Structural Backfill Material in the Pipe Trench," (ADAMS Accession No. ML23286A001) and determined that the reason, corrective actions taken and planned to address recurrence, and the date when full compliance will be achieved for this violation is adequately addressed and captured on the docket.
- (2) The inspectors evaluated internal flooding mitigation protections in the high-pressure service water (HPSW) and emergency service water (ESW) pump rooms on January 24, 2024

71111.07A - Heat Exchanger/Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Unit common, 'E-4' EDG lubricating oil cooler (0DE377) and jacket water cooler (0DE376) heat exchangers inspection and cleaning on January 23, 2024

71111.11Q - Licensed Operator Regualification 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 the Unit 2 restart preparation, startup operations, and synchronization to the grid on January 30 and 31, 2024

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

- (1) The inspectors observed and evaluated licensed operator regualification training in the simulator on January 29, 2024

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) Unit 3, static inverter maintenance effectiveness following swap to alternate power supply during the week of February 26, 2024

Aging Management (IP Section 03.03) (1 Sample)

The inspectors evaluated the effectiveness of the aging management program for the following SSCs that did not meet their inspection or test acceptance criteria:

- (1) Unit 2, unsatisfactory VT-3 exam of HPSW system pipe hanger on July 5, 2023

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management (IP Section 03.01) (4 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) Unit 2, HPCI system planned maintenance on January 11, 2024
- (2) Unit 2, '2A' RHR loop planned maintenance on January 17 and 18, 2024
- (3) Unit 3, HPCI system unavailable for planned maintenance on March 4 and 5, 2024
- (4) Unit 2, '2B' HPSW and '2B' RHR planned maintenance the week of March 18, 2024

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

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

- (1) Unit common, 'E-4' EDG lube oil cooler gasket was not seated properly with some tearing on January 23, 2024
- (2) Unit 2, RCIC local lube oil pressure gauge internal gasket separated on January 30, 2024
- (3) Unit 3, HPCI system electro-hydraulic governor module and ramp generator signal converter calibration on March 5 and 6, 2024
- (4) Unit 2, degraded weld on '2B' RHR heat exchanger partition plate on March 18, 2024

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated activities associated with an unplanned Unit 2 outage, including Mode 2 through reactor criticality on January 30, 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) (5 Samples)

- (1) Unit common, 'E-4' EDG planned maintenance, on January 22 through 26, 2024
- (2) Unit 2, 'G' wide range neutron monitor following maintenance to restore display operation, on January 30, 2024
- (3) Unit 3, RCIC system planned maintenance, on February 7, 2024
- (4) Unit common, 'E-2' EDG jacket cooler temperature switch replacement, on February 9, 2024
- (5) Unit 2, '2C' core spray pump electrical testing, on February 12, 2024

Surveillance Testing (IP Section 03.01) (1 Sample)

- (1) Unit 2, 'E-3' EDG simulated Unit 2 emergency core cooling system signal auto start testing performed, on February 14, 2024

Inservice Testing (IST) (IP Section 03.01) (2 Samples)

- (1) Unit 3, HPCI pump, valve and flow and inservice comprehensive test, on March 6 and 7, 2024
- (2) Unit 2, '2A' loop RHR pump, valve and flow and inservice test, on March 26, 2024

71114.06 - Drill Evaluation

Required Emergency Preparedness Drill (1 Sample)

- (1) The inspectors observed a full scope hostile action-based scenario training activity on February 6, 2024

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours (IP Section 02.01) (2 Samples)

The inspectors verified licensee performance indicators submittals listed below:

- (1) Unit 2 for the period January 1, 2023, through December 31, 2023
- (2) Unit 3 for the period January 1, 2023, through December 31, 2023

IE03: Unplanned Power Changes per 7000 Critical Hours (IP Section 02.02) (2 Samples)

The inspectors verified licensee performance indicators submittals listed below:

- (1) Unit 2 for the period January 1, 2023, through December 31, 2023
- (2) Unit 3 for the period January 1, 2023, through December 31, 2023

IE04: Unplanned Scrams with Complications (USwC) (IP Section 02.03) (2 Samples)

The inspectors verified licensee performance indicators submittals listed below:

- (1) Unit 2 for the period January 1, 2023, through December 31, 2023
- (2) Unit 3 for the period January 1, 2023, through December 31, 2023

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Unit 3 HPSW recurrent leaks, associated operability assessments, and alternative treatment evaluations

71153 - Follow-up of Events and Notices of Enforcement Discretion

Personnel Performance (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the Unit 2, unplanned scram on January 29, 2024

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On April 18, 2024, the inspectors presented the integrated inspection results to David Henry, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Corrective Action Documents	Condition Reports Issue Reports 04748058 04747941 04740624		
71111.04	Drawings	6280-M-361		Revision 88
71111.05	Miscellaneous	PIMS AR1452560		
71111.05	Procedures	CC-PB-201		
71111.05	Procedures	Impairment 19442		
71111.05	Procedures	PF-117	Unit 3 Turbine Building, Emergency Battery Switchgear Rooms- Elevation 135'-0"	Revision 11
71111.05	Procedures	PF-93	Pre-Fire Plan Fire Area/Zone 50/93, 94, 95	Revision 4
71111.06	Calculations	PM-1048	Design Basis for Internal Flood Protection for the HPSW/ESW Pump Structure	Revision 2
71111.06	Corrective Action Documents	AR 04696285		
71111.06	Corrective Action Documents Resulting from Inspection	AR 04736649		
71111.06	Procedures	ARC-004 00C226C A-3	'A' ESW Pump Room Flooded	Revision 9
71111.06	Procedures	ARC-004 00C226C A-4	'B' ESW Pump Room Flooded	Revision 9
71111.06	Procedures	CC-PB-201	Hazard Barrier Control Program	Revision 14
71111.06	Procedures	OP-PB-102-106	Operator Response Time Program at Peach Bottom	Revision 11
71111.06	Procedures	P-T-09	Internal Hazards	Revision 11
71111.07A	Work Orders	05323572		
71111.07A	Work Orders	05323575		
71111.12	Corrective Action Documents	04688775		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.12	Work Orders	05355581		
71111.15	Corrective Action Documents	IR 04734840		
71111.15	Corrective Action Documents	IR 04739399		
71111.20	Miscellaneous	Just in Time Training Rapid Deployment – tq-aa-224-f310 for Peach Bottom P2F11 eSOMS Clearance – 22-2-07-0003		
71111.24	Drawings	6280-M-361, Sheet 1	P&I Diagram Residual Heat Removal System	Revision 88
71111.24	Procedures	ST-O-010-301-2	'A' RHR Loop Pump, Valve Flow and Unit Cooler Functional and Inservice Test	Revision 55
71111.24	Procedures	ST-O-052-153-2	E3 D/G Simulated Unit 2 ECCS Signal Auto Start With Off-Site Power Available And Full Load Test	Revision 20
71111.24	Work Orders	04675063		
71111.24	Work Orders	04909229 04909225	Replace RMS-3-13A-S024- EQ PM Replace RMS-3-13A-S017- EQ PM	
71111.24	Work Orders	5280102		
71152A	Corrective Action Documents	IR 04699907		
71152A	Corrective Action Documents	IR 04711158		
71152A	Corrective Action Documents	IR 04714455		
71152A	Corrective Action Documents	IR 04718294		
71152A	Engineering Changes	640060	Min Wall Repair of 18" HPSW Pipe in Off Gas Pipe Tunnel U3 A/C Supply to RHR Heat Exchanger	Revision 1
71152A	Engineering	640091	RISC-3 50.69 Evaluation - HPSW Pinhole Leak in Off-Gas	Revision 1

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Changes		Pipe Tunnel	
71152A	Work Orders	05410266		
71153	Corrective Action Documents	IR 04738575		