



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

April 27, 2022

Mr. 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 05000277/2022001 AND
05000278/2022001

Dear Mr. Rhoades:

On March 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Peach Bottom Atomic Power Station, Units 2 and 3. On April 22, 2022, the NRC inspectors discussed the results of this inspection with Mr. 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 05000277/2022001 AND
 05000278/2022001 DATED APRIL 27, 2022

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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: 05000277/2022001 and 05000278/2022001

Enterprise Identifier: I-2022-001-0050

Licensee: Constellation Energy Generation, LLC

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

Location: Delta, PA 17314

Inspection Dates: January 1, 2022 to March 31, 2022

Inspectors: S. Rutenkroger, Senior Resident Inspector
P. Boguszewski, 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

None.

PLANT STATUS

Unit 2 began the inspection period at rated thermal power (RTP). On March 8, 2022, operators reduced power to approximately 35 percent RTP in order to enter the drywell to repair a nitrogen leak on a main steam isolation valve. Following repairs, the unit was returned to RTP on March 9, 2022. The unit remained at or near RTP for the remainder of the inspection period.

Unit 3 began the inspection period at rated thermal power (RTP). On March 4, 2022, operators reduced power to approximately 73 percent RTP for a rod pattern adjustment 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," conducted routine reviews using IP 71152, "Problem Identification and Resolution," 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 Sample (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures for the following systems:

- (1) Emergency diesel generators (EDGs), emergency service water (ESW), motor and diesel driven fire pumps, and the diverse and flexible coping strategies (FLEX) portable pumps during the week of January 10, 2022

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) Unit 2 'A' and 'C' core spray (CS) during 'B' CS logic system functional testing on January 12, 2022
- (2) Unit common, 'E-3' EDG during 'E-1' EDG maintenance on January 31 and February 1, 2022

- (3) Unit 2 'B' CS during 'E-1' EDG maintenance on February 2, 2022
- (4) Unit common, 'E-3' EDG with degraded alarm cable on March 20, 2022

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (6 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 common, cable spreading and computer rooms, PF-78H, on February 24, 2022
- (2) Unit 2 emergency battery and switchgear rooms, PF-127, on February 24, 2022
- (3) Unit 3 emergency battery and switchgear rooms, PF-117, on February 24, 2022
- (4) Unit 3 'B' CS, PF-13A, on March 28, 2022
- (5) Unit common, hydrogen cylinder storage and radwaste enclosure, PF-150, on March 20, 2022
- (6) Unit 2 high-pressure coolant injection pump (HPCI) room, PF-59, on March 29, 2022

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Unit common, administration building pipe tunnel leak on February 18, 2022

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-1' EDG lube oil cooler and air coolant cooler two-year cleaning and inspection and eddy current testing on January 31 and February 1, 2022

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 main control room during quarterly Unit 3 control rod testing on February 20, 2022

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 February 7, 2022

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 2 standby liquid control system on February 18, 2022

Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following SSC remains capable of performing its intended function:

- (1) Unit common, 'E-3' EDG cable replacements from March 20, 2022, through March 25, 2022

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (8 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 'C' residual heat removal planned maintenance on January 3, 2022
- (2) Unit common, EDG planned cardox system testing on January 5, 2022
- (3) Unit common, 'E-1' EDG planned maintenance on January 31, 2022
- (4) Unit common, 'E-3' EDG ventilation logic test on February 9, 2022
- (5) Unit common, 'E-3' EDG tagged out of service for anticipated maintenance on March 7, 2022
- (6) Unit common, 'E-3' EDG unavailability on March 7, 2022
- (7) Unit common, 'E-3' EDG and 'B' ESW pump unavailable for cable replacements on March 14, 2022
- (8) Unit common, 'E-3' EDG and 'B' ESW risk informed completion time implementation on March 18, 2022

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (6 Samples)

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

- (1) Unit common, 'E-1' EDG air coolant pump backlash readings out of tolerance on January 31, 2022
- (2) Unit common, 'E-1' EDG stator air gap measurements exceeded allowable tolerance on February 1, 2022
- (3) Unit common, 'E-3' EDG low tube oil temperature on February 1, 2022

- (4) Unit common, 'E-3' EDG trip on high crankcase pressure during slow start surveillance testing on February 15, 2022
- (5) Unit common, 'E-4' EDG ventilation damper fresh air configuration on February 25, 2022
- (6) Unit common, 'E-3' EDG conduit and cable conditions, including water intrusion and over-tensioning on March 15 through March 19, 2022

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Unit common, 'E-3' EDG cable replacement from March 20, 2022, through March 25, 2022

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (6 Samples)

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

- (1) Unit common, 'E-1' EDG replacement of contacts supporting jacket coolant and lube oil heaters on February 1, 2022
- (2) Unit common, 'E-1' EDG following planned maintenance on February 4 and February 5, 2022
- (3) Unit 2 local leak rate testing of personnel hatch following containment entry on March 9, 2022
- (4) Unit common, 'E-3' EDG control cable replacements following completion of cable pulls and cable terminations on March 19, 2022
- (5) Unit common, 'E-3' EDG penetration seal replacements on March 14 through March 20, 2022
- (6) Unit common, 'E-3' EDG maintenance window final testing following control cable replacements and crankcase vacuum orifice replacement on March 21, 2022

71111.22 - Surveillance Testing

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

Surveillance Tests (other) (IP Section 03.01) (1 Sample)

- (1) Unit common, 'E-3' EDG run on February 15, 2022

Inservice Testing (IP Section 03.01) (2 Samples)

- (1) Unit 3 HPCI and unit cooler functional in-service test on March 1, 2022
- (2) Unit common, 'E-4' EDG slow start full load and in-service test on February 25, 2022

RCS Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) Unit 3 monitored for increased drywell unidentified leakage as of January 31, 2022

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

- (1) The inspectors observed a full scope emergency preparedness drill conducted on February 14, 2022

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) (2 Samples)

- (1) Unit 2 for the period January 1, 2021, to December 31, 2021
- (2) Unit 3 for the period January 1, 2021, to December 31, 2021

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

- (1) Unit 2 for the period January 1, 2021, to December 31, 2021
- (2) Unit 3 for the period January 1, 2021, to December 31, 2021

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

- (1) Unit 2 for the period January 1, 2021, to December 31, 2021
- (2) Unit 3 for the period January 1, 2021, to December 31, 2021

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 22, 2022, the inspectors presented the integrated inspection results to Mr. David Henry, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	4471280 4401855		
	Procedures	AO 29.2	Discharge Canal to Intake Pond Cross-Tie Gate Operation, Frazil Ice Mitigation, and Icing Condition Operations	Revision 34
		CC-PB-118	Peach Bottom Implementation of Diverse and Flexible Coping Strategies (FLEX) and Spent Fuel Pool Instrumentation Program	Revision 14
		FSG-003	Pre-Staging FLEX Equipment	Revision 2
71111.04	Corrective Action Documents	4442542 4445073 4464924 4468814		
71111.05	Miscellaneous	Barrier Breach Permit No. 22-029		
		Barrier Breach Permit No. 22-053		
		FSI #00015076		
		FSI #00015285		
	Procedures	PF-117	Unit 3 Turbine Building, Emergency Battery Switchgear Rooms, Elevation 135'-0"	Revision 11
		PF-127	Unit 2 Turbine Building, Emergency Battery Switchgear Rooms, Elevation 135'-0"	Revision 11
		PF-150	Hydrogen Cylinder Storage & Radwaste Enclosure	Revision 7
		PF-78H	Turbine Building Common, Cable Spreading and Computer Rooms, Elevation 150'-0"	Revision 9
71111.07A	Miscellaneous	0AE377	Lube Oil Cooler Final Report	02/2022
		0AE378	Air Coolant Cooler Final Report	02/2022
71111.12	Corrective Action Documents	AR 4485805		
	Corrective Action	AR 4486635		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents Resulting from Inspection	4486620		
	Miscellaneous	Engineering Change Request 635851		
71111.13	Corrective Action Documents	4486302		
		AR 04477072		
	Corrective Action Documents Resulting from Inspection	4475037		
		4475047		
	Miscellaneous	RICT Record, WW-2211	'E-3' EDG and 'B' ESW RICT for 'E-3' EDG Cable Replacement	
	Procedures	ER-AA-600-1052	Risk Management Support of RICT	Revision 001
		OP-AA-108-118	Risk Informed Completion Time	Revision 2
WC-AA-101		On-Line Work Control Process	Revision 32	
WC-AA-101-1006		On-Line Risk Management and Assessment	Revision 4	
71111.15	Corrective Action Documents	IR 4474937		
		IR 4475171		
		IR 4475245		
		IR 4478230		
		IR 4480707		
		IR 4484847		
	Miscellaneous	4486620		
		4486635		
	Procedures	Technical Evaluation 636000		
		M-052-001	Diesel Generator Maintenance	Revision 11
Work Orders	SO52A.8.A	Diesel Generator Daily Shutdown Inspection	Revision 66	
	05067200			
71111.19	Corrective Action Documents	4475362		
		IR 4486620		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		IRs 4475899 4476115 4476116 4475914 4476053		
	Operability Evaluations	RT-O-052-251-2	'E-1' Diesel Generator Inspection Post-Maintenance Functional Test	Revision 38A
	Procedures	M-056-001	480 Volt Motor Control Center Circuit Breaker Assembly and Cubicle Terminal Maintenance	Revision 36
		ST-I-052-251-2	'E-1' Diesel Generator Inspection Post-Maintenance Instrumentation and Logic Test	Revision 9
		ST-O-052-411-2	'E-1' Diesel Generator Fast Start and Full Load	Revision 24
	Work Orders	05227164 05228431 05228481 05228708		
		4688253 5019993 5019994 5057721 5176138		
71111.22	Corrective Action Documents	04478230		
		IR 4481499		
	Procedures	ST-O-023-300-3	HPCI Pump, Valve, and Flow and Unit Cooler Functional and In-Service Test Without Vibration Data Collection	Revision 21
		ST-O-052-314-2	'E-4' Diesel Generator Slow Start Full Load and IST Test	Revision 23
	Work Orders	05205860 05228030		
WR 01511354 WO 04250947				
71114.06	Corrective Action Documents	IRs 4478221 4478227		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		4479208		
	Corrective Action Documents Resulting from Inspection	IR 4479134		