



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

November 9, 2020

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 –  
INTEGRATED INSPECTION REPORT 05000277/2020003 AND  
05000278/2020003

Dear Mr. Hanson:

On September 30, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Peach Bottom Atomic Power Station, Units 2 and 3. On October 9, 2020, the NRC inspectors discussed the results of this inspection with Mr. Matthew Herr, 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,

X /RA/

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Signed by: Jonathan E. Greives  
Jonathan E. Greives, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

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

Enclosure:  
As stated

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SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 –  
 INTEGRATED INSPECTION REPORT 05000277/2020003 AND  
 05000278/2020003 DATED NOVEMBER 9, 2020

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OFFICE	R1/DRP	R1/DRP	R1/DRP		
NAME	SRutenkroger	LCasey	JGreives		
DATE	11/06/2020	11/05/2020	11/09/2020		

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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: 05000277/2020003 and 05000278/2020003

Enterprise Identifier: I-2020-003-0037

Licensee: Exelon Generation Company, LLC

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

Location: Delta, PA 17314

Inspection Dates: July 1, 2020 to September 30, 2020

Inspectors: S. Rutenkroger, Senior Resident Inspector  
P. Boguszewski, Resident Inspector  
E. Andrews, Health Physicist

Approved By: Jonathan E. Greives, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

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). The unit remained at or near RTP for the remainder of the inspection period, reaching 83 percent of RTP due to end of cycle coastdown.

Unit 3 began the inspection period at RTP. On September 12, 2020, the unit was down powered to 66 percent for a control rod sequence exchange and turbine valve testing. The unit was returned to RTP the following day, and 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 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. Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident and regional inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time the resident inspectors performed periodic site visits each week, increasing the amount of time on site as local COVID-19 conditions permitted. As part of their onsite activities, resident inspectors conducted plant status activities as described in IMC 2515, Appendix D; observed risk significant activities; and completed on site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

## REACTOR SAFETY

### 71111.01 - Adverse Weather Protection

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

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from potential severe weather given a tropical storm warning on August 4, 2020

#### External Flooding Sample (IP Section 03.03) (1 Sample)

- (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 September 22, 2020

#### 71111.04 - Equipment Alignment

##### Partial Walkdown Sample (IP Section 03.01) (2 Samples)

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

- (1) Unit 3 'B' and 'C' drywell chillers during inspection of the 'A' drywell chiller on June 30, 2020
- (2) Emergency cooling system during 'A' emergency cooling tower system outage window (SOW) on July 8, 2020

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

- (1) Hardened containment vent system and severe accident water addition implementation strategy completed in conjunction with TI-193 inspection on August 12, 2020

#### 71111.05 - Fire Protection

##### Fire Area Walkdown and Inspection Sample (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 3 reactor building (RB) 'C' residual heat removal (RHR) pump and heat exchanger room on July 30, 2020
- (2) Unit 3 RB closed loop cooling water room on July 30, 2020
- (3) Unit 2 RB, 195' General Area on July 30, 2020
- (4) Unit 2 RB, 135' General Area on July 30, 2020
- (5) Unit common intake structure on September 24, 2020

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

- (1) The inspectors evaluated the onsite fire brigade performance during an unannounced fire drill on August 13, 2020

#### 71111.07A - Heat Sink Performance

##### Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Unit common 'E-4' emergency diesel generator (EDG) jacket coolant, lube oil, and air coolant heat exchangers on July 13-14, 2020

## 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 downpower to 90 percent to remove 4th stage feedwater heaters from service followed by power ascension on August 12, 2020

### Licensed Operator Regualification Training/Examinations (IP Section 03.02) (3 Samples)

- (1) The inspectors observed and evaluated licensed operator regualification training in the simulator on July 20, 2020
- (2) The inspectors observed and evaluated licensed operator regualification training in the simulator on August 11, 2020
- (3) The inspectors observed and evaluated licensed operator regualification training in the simulator on September 21, 2020

## 71111.12 - Maintenance Effectiveness

### Maintenance Effectiveness (IP Section 03.01) (3 Samples)

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 RHR system during the week of August 6, 2020
- (2) Unit common 'E-1' EDG with review of A(1) Maintenance Review Action Plan on September 14, 2020
- (3) Unit 3 reactor core isolation cooling (RCIC) as of September 25, 2020

### 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-4' EDG overhaul on July 13 to July 16, 2020

## 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) Unit common 'E-4' EDG planned maintenance on July 14 to July 16, 2020
- (2) Unit 3 'A' high-pressure service water (HPSW) planned maintenance on July 28, 2020
- (3) Unit common 'E-3' EDG planned maintenance on August 10 to August 12, 2020
- (4) Unit 3 'B' HPSW system planned maintenance on August 21, 2020
- (5) Unit common 'E-4' EDG 24-hour endurance run on September 17, 2020

### 71111.15 - Operability Determinations and Functionality Assessments

#### Operability Determination or Functionality Assessment (IP Section 03.01) (8 Samples)

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

- (1) Unit common 'E-3' failure to shutdown using normal means requiring tripping of the fuel racks on June 30, 2020
- (2) Unit 3 high-pressure coolant injection (HPCI) lube oil mechanical trip valve on July 20, 2020
- (3) Unit 2 RCIC lube oil cooling water pressure was low on August 13, 2020
- (4) Unit common 'E-2' EDG excessive lube oil usage during 24-hour endurance run completed on August 24, 2020
- (5) Unit 2 standby liquid coolant (SBLC) degraded heater level switch on August 27, 2020
- (6) Unit common '2SU' startup transformer 'A' phase high voltage bushing oil level high on August 27, 2020
- (7) Unit 2 'D' RHR room safety structural supports degraded from groundwater intrusion on September 9, 2020
- (8) Unit 3 'C' RHR flow control valve limit switch indicated closed and the lock nut and stem nut were later identified to be loose on September 15, 2020

### 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 modification:

- (1) Unit 2 RCIC staged testing equipment on August 13, 2020

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test Sample (IP Section 03.01) (3 Samples)

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

- (1) Unit common 'E-4' EDG maintenance overhaul on July 18, 2020
- (2) Unit 3 'B' RHR room flood switch replacement on July 21, 2020
- (3) Unit 2 SBLC level switch post-maintenance testing on August 26, 2020

### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

#### Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) Unit common 'E-2' EDG cardox system surveillance test on July 6, 2020
- (2) Unit common 'E-3' EDG run with governor troubleshooting on July 22, 2020



Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Unit 3 'A' core spray pump, valve, and flow test on August 13, 2020

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 September 9, 2020

Drill/Training Evolution Observation (IP Section 03.02) (2 Samples)

The inspectors evaluated:

- (1) The inspectors observed a focused area emergency preparedness drill conducted on July 29, 2020
- (2) The inspectors observed a focused area emergency preparedness drill conducted on August 19, 2020

**RADIATION SAFETY**

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Permanent Ventilation Systems (IP Section 03.01) (1 Sample)

The inspectors evaluated the configuration of the following permanently installed ventilation systems:

- (1) Main control room emergency ventilation system and standby gas treatment system

Temporary Ventilation Systems (IP Section 03.02) (1 Sample)

The inspectors evaluated the configuration of the following temporary ventilation system:

- (1) Temporary ventilation for continuing independent spent fuel storage installation work

Use of Respiratory Protection Devices (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the licensee's use of respiratory protection devices

Self-Contained Breathing Apparatus for Emergency Use (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated the licensee's use and maintenance of self-contained breathing apparatuses

#### 71124.04 - Occupational Dose Assessment

##### Source Term Characterization (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated licensee performance as it pertains to radioactive source term characterization

##### External Dosimetry (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated licensee performance as it pertains to external dosimetry that is used to assign occupational dose

##### Internal Dosimetry (IP Section 03.03) (2 Samples)

The inspectors evaluated the following internal dose assessments for actual internal exposures:

- (1) There were no actual internal dose assessments during the inspection period
- (2) The inspectors reviewed one investigational whole body count for an individual. No dose assignment was required.

##### Special Dosimetric Situations (IP Section 03.04) (2 Samples)

The inspectors evaluated the following special dosimetric situations:

- (1) The dose assessment for one declared pregnant worker in 2019
- (2) The dose assessment for two declared pregnant workers in 2020

#### 71124.07 - Radiological Environmental Monitoring Program

##### Environmental Monitoring Equipment and Sampling (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated environmental monitoring equipment and observed collection of environmental samples

##### Radiological Environmental Monitoring Program (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the implementation of the licensee's radiological environmental monitoring program

##### GPI Implementation (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the licensee's implementation of the Groundwater Protection Initiative program to identify incomplete or discontinued program elements

#### **OTHER ACTIVITIES – BASELINE**

##### 71151 - Performance Indicator Verification

The inspectors verified Exelon's performance indicator submittals listed below for the period October 1, 2019 through September 30, 2020 (8 samples):

MS07: High Pressure Injection Systems (IP Section 02.06) (2 Samples)

- (1) Unit 2 high pressure injection systems
- (2) Unit 3 high pressure injection systems

MS08: Heat Removal Systems (IP Section 02.07) (2 Samples)

- (1) Unit 2 heat removal systems
- (2) Unit 3 heat removal systems

MS09: Residual Heat Removal Systems (IP Section 02.08) (2 Samples)

- (1) Unit 2 RHR systems
- (2) Unit 3 RHR systems

MS10: Cooling Water Support Systems (IP Section 02.09) (2 Samples)

- (1) Unit 2 cooling water support systems
- (2) Unit 3 cooling water support systems

**INSPECTION RESULTS**

No findings were identified.

**EXIT MEETINGS AND DEBRIEFS**

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

- On August 28, 2020, the inspectors presented the Respiratory Protection and Dose Assessment inspection results to Mr. Matthew Herr, Site Vice President, and other members of the licensee staff.
- On September 25, 2020, the inspectors presented the Radiological Environmental Monitoring Program inspection results to Mr. David Henry, Plant Manager, and other members of the licensee staff.
- On October 9, 2020, the inspectors presented the integrated inspection results to Mr. Matthew Herr, Site Vice President, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.05	Miscellaneous	FSI 00010091	Bypass A-156 during Hot Work 3 'C' RHR	
71111.07A	Miscellaneous	PM-1042	Determination of Diesel Operability with Cross-flow	Revision 6
	Work Orders	WO 04329764, WO 04329765, WO 04329766		
71111.11Q	Corrective Action Documents Resulting from Inspection	IR 4362435		
71111.15	Corrective Action Documents	IR 4343617		
		IR 4363306		
		IR 4366086		
		IR 4368194		
		IR 4369617 IR 4371233 IR 4371491		
	Corrective Action Documents Resulting from Inspection	IR 4355988		
71111.18	Corrective Action Documents	IR 4364444		
	Procedures	ST-O-13-300-2	RCIC Pump, Valve, Flow & Unit Cooler Functional and In-service Test without Vibration Data Collection	Revision 13
71111.19	Procedures	RT-O-052-254-2	E-4 Diesel Generator Inspection Post-Maintenance Functional Test	Revision 40
	Work Orders	WO 04857656		
71111.22	Corrective Action Documents Resulting from Inspection	IR 4366855		
	Procedures	ST-O-014-301-3	Core Spray LOOP 'A' Pump, Valve, Flow, and Cooler	Revision 37

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Functional and Inservice Test	
	Work Orders	WO 05054567		
71124.03	Procedures	RP-AA-440	Respiratory Protection Program	15
		RP-AA-825	Maintenance, Care and Inspection of Respiratory Protective Equipment	8
71124.04	Procedures	RP-AA-210	Dosimetry Issue, Usage, and Control	30
71124.07	Miscellaneous		Offsite Dose Calculation Manual	17
		Report No. 76	2018 Annual Radiological Environmental Operating Report	
		Report No. 77	2019 Annual Radiological Environmental Operating Report	