



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION I  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PA 19406-2713

December 20, 2018

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

**SUBJECT: PEACH BOTTOM ATOMIC POWER STATION – POST-APPROVAL SITE  
INSPECTION FOR LICENSE RENEWAL - PHASE 4 INSPECTION REPORT  
05000277/2018011 AND 05000278/2018011**

Dear Mr. Hanson:

On November 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Peach Bottom Atomic Power Station, Units 2 and 3 and discussed the results of this inspection with Mr. Matthew Herr, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. In conducting the inspection, the team examined a sample of your Aging Management Programs to verify the effects of aging were being managed to ensure structures, systems, and components in the scope of these programs maintained the ability to perform their intended functions. The inspection involved review of your implementing procedures, evaluations, and corrective actions associated with your monitoring activities. The inspection also involved plant equipment walkdowns and interviews with station personnel.

The NRC inspectors did not identify any finding or violation of more than minor significance.

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 the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

***/RA/***

Mel Gray, Chief  
Engineering Branch 1  
Division of Reactor Safety

Docket Nos. 50-277 and 50-278  
License Nos. DPR-44 and DPR-56

Enclosure:  
Inspection Report 05000277/2018011  
and 05000278/2018011

cc w/encl: Distribution via ListServ

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION – POST-APPROVAL SITE  
INSPECTION FOR LICENSE RENEWAL - PHASE 4 INSPECTION REPORT  
05000277/2018011 AND 05000278/2018011 DATED DECEMBER 20, 2018

DISTRIBUTION: (via email)

DLew, RA (R1ORAMAIL Resource)  
 RLorson, DRA (R1ORAMAIL Resource)  
 DPelton, DRP (R1DRPMAIL Resource)  
 PKrohn, DRP (R1DRPMAIL Resource)  
 JYerokun, DRS (R1DRSMAIL Resource)  
 BWellington, DRS (R1DRSMAIL Resource)  
 JGreives, DRP  
 SBarber, DRP  
 JHeinly, DRP, SRI  
 DBeacon, DRP, RI  
 SSchmitt, DRP, AA  
 CCook, RI, OEDO  
 RidsNrrPMPeachBottom Resource  
 RidsNrrDorlLp1 Resource  
 ROPreports Resource

DOCUMENT NAME: \\Nrc.gov\nrc\R1\Office\DRS\Engineering Branch 1\-- Mangan\PB LR phase 4 Inspection report 2018011 Final.docx  
 ADAMS ACCESSION NUMBER: **ML18355A401**

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RI/DRS	RI/DRP	RI/DRS		
NAME	KMangan via email	JGreives	MGray		
DATE	12/19/18	12/20/18	12/20/18		

OFFICIAL RECORD COPY

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

Docket Numbers: 50-277 and 50-278

License Numbers: DPR-44 and DPR-56

Report Numbers: 05000277/2018011 and 05000278/2018011

Enterprise Identifier: I-2018-011-0052

Licensee: Exelon Generation Company, LLC (Exelon)

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

Location: Delta, Pennsylvania

Inspection Period: November 26 – 30, 2018

Inspectors: K. Mangan, Senior Reactor Inspector, Division of Reactor Safety (DRS),  
Team Leader  
M. Modes, Senior Reactor Inspector, DRS  
N. Floyd, Senior Reactor Inspector, DRS

Approved By: Mel Gray, Chief  
Engineering Branch 1  
Division of Reactor Safety

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring Exelon's performance at Peach Bottom Atomic Power Station, Units 2 and 3 by conducting a Post-Approval Site Inspection for License Renewal - Phase 4 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.

No findings or more-than-minor violations were identified.

## INSPECTION SCOPES

This inspection was conducted using the appropriate portions of the inspection procedure in effect at the beginning of the inspection unless otherwise noted. Currently approved inspection procedures 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 inspection procedure requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter 2515, "Light-Water Reactor Inspection Program - Operations Phase." The team 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

### 71003 - Post-Approval Site Inspection for License Renewal - Phase 4 (6 samples)

The team selected for evaluation six aging management programs considering risk insights and programs that were enhanced or new under the renewed operating license. The team also considered for selection those programs with monitoring results that were performed for the first time or identified examination or test results not experienced in the past. The inspection performed by the team was conducted as outlined in NRC Inspection Procedure 71003. For the age management programs selected, the team reviewed records, interviewed plant staff, and conducted plant walk downs to evaluate whether age management program elements were being implemented Involving program scope, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience.

The following age management programs were evaluated by the team:

- Q 1.1, Flow Accelerated Corrosion Program
- Q 1.16, Maintenance Rule Structural Monitoring Program
- Q 2.3, Ventilation System Inspection and Testing Activities
- Q 2.5, Outdoor, Buried and Submerged Component Inspection Activities
- Q 2.9, Fire Protection Activities
- Q 3.5, In-accessible Medium Voltage Cables not subject to 10 CFR 50.49 Environmental Qualification Requirements

## EXIT MEETINGS AND DEBRIEFS

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

- On November 30, 2018, the inspectors presented the team's inspection results to Mr. Matthew Herr, Plant Manager, and other members of the licensee staff.

**DOCUMENTS REVIEWED**Corrective Action Condition Reports

01257959	02741249	04106712	04166806
01381435	01656419	04115606	04198726
01445365	03965606	04133867	04198906
01509144	04022739	04150564	04198912
01509209	04024134	04163257	04198906
01656419	04087238	04166806	
02701330	04090201	04190107	

Design and Licensing Basis Documents

PBAPS Updated Final Safety Analysis Report, Appendix Q – License Renewal Aging Management UFSAR Supplement, Revision 26  
 UFSAR Change 2018-0013, Removing CST Statement from Q.2.5, dated 4/12/18

Drawings

6280-E-1, Sh. 1, Single Line Diagram Station, Revision 58  
 LR-M-384, Shts. 2 and 3, License Renewal Drawing Control Room HVAC, Revision 0  
 LR-M-309, Sh. 1, License Renewal Drawing Condensate & Refueling Water Storage and Transfer Systems, Revision 0  
 LR-M-309, Sh. 2, License Renewal Drawing Condensate & Refueling Water Storage and Transfer Systems, Revision 0  
 LR-M-318, Sh. 1, License Renewal Drawing Fire Protection System, Revision 0  
 LR-M-318, Sh. 2, License Renewal Drawing Fire Protection System, Revision 0

Engineering Calculations and Evaluations

6200.00-02, Peach Bottom Atomic Power Station Unit 2 FAC Susceptibility Non-Modeled Evaluation (SNM), 2/3/2012  
 6200.100-04, Peach Bottom Power Station Unit 3 FAC Susceptibility Non-Modeled Evaluation (SNM), 2/3/2012  
 EP-2016-0079-01-TR, Exelon – Peach Bottom Atomic Power Station Unit 2 Erosion Susceptibility Evaluation (ESE) Technical Report Revision 0  
 EP-2016-0079-02-TR, Exelon – Peach Bottom Atomic Power Station Unit 3 Erosion Susceptibility Evaluation (ESE) Technical Report, Revision 0  
 PEA-05738, Failure Analysis of Fire Protection Piping, dated 11/1/18  
 PEA-71643, Selective Leaching Evaluation of One Fire Valve and One Piping Tee, dated 5/26/17  
 PEA-71646, Selective Leaching Evaluation of Fire Valves, dated 5/26/17

Miscellaneous

AMP Effectiveness Review for Fire Protection Activities, dated 6/25/18  
 AMP Effectiveness Review for Outdoor, Buried, and Submerged Component Inspection Activities  
 Book 3.5, Peach Bottom Atomic Power Station Inaccessible Medium-Voltage Cables not subject to 10 CFR 50.49 Environmental Qualification Requirements Aging Management Program Result Binder, Revision 0  
 BOP-UT-18-032, UT Data Report for Unit 2 Refueling Water Storage Tank, dated 6/28/18  
 MFL Inspection Report for Unit 2 Condensate Storage Tank, dated 10/29/16  
 MM-AA-723-500, Inspection of Non EQ Cables and Connections for Managing Averse Localized Environments, Revision 11

MO2, Aging Management Review Technical Report – Ventilation, Revision 3  
 NSAC-202L-R4, Recommendations for an Effective Flow-Accelerated Corrosion Program,  
 Revision 4  
 Vendor Field Service Report for Diesel Driven Fire Pump, dated 9/28/18

#### Procedures

ER-AA-300-150, Cable Condition Monitoring Program, Revision 5  
 ER-AA-3003, Cable Condition Monitoring Program, Revision 2  
 ER-AA-430, Conduct of Flow Accelerated Corrosion Activities, Revision 7  
 ER-AA-430-1001, Guidelines for Flow Accelerated Corrosion Activities, Revision 11  
 ER-AA-430-1002, Feedwater Heater Shell Inspection for Detection of Flow Accelerated  
 Corrosion, Revision 6  
 ER-AA-430-1003, Flow Accelerated Corrosion Program Performance Indicators, Revision 4  
 ER-AA-430-1004, Erosion in Piping and Components, Revision 1  
 ER-AA-5400, Underground (Buried) Piping and Raw Water Integrity Management Programs  
 Guide, Revision 10  
 ER-AA-5400-1002, Underground Piping and Tanks Examination Guide, Revision 9  
 ER-AA-700, License Renewal Implementation Program, Revision 7  
 ER-AA-700-1003, Screening and Evaluation of Potential Aging Issues, Revision 4  
 ER-AA-700-401, Selective Leaching Aging Management, Revision 1  
 ER-AA-700-403, Inspection of Internal Surfaces in Miscellaneous Piping and Duct Components  
 Aging Management Program, Revision 1  
 ER-AA-450, Structures Monitoring, Revision 7  
 ER-PB-450-1006, Peach Bottom Structures Monitoring Instructions, Revision 5  
 RT-O-100-911-2, Inspection of Aboveground Storage Tanks, Revision 12  
 SA-AA-117, Excavation, Trenching, and Shoring, Revision 21  
 ST-M-37D-380-2, Diesel Driven Fire Pump Inspection, Revision 3

#### Surveillance Tests

2-PEB-ISO-2-12-2-V01 D/S, Engineering Evaluation of UT Inspected Component, performed  
 10/28/2018  
 2-PEB-ISO-2-14-6-F01, Engineering Evaluation of UT Inspected Component, performed  
 10/23/2018  
 2-PEB-M-295-S77-E05, Engineering Evaluation of UT Inspected Component, performed  
 11/2/2016  
 3-PEB-FSK-M-3013-S13-E03, Engineering Evaluation of UT Inspected Component, performed  
 10/26/2017  
 3-PEB-FSK-M-3013-S13-E04, Engineering Evaluation of UT Inspected Component, performed  
 10/26/2017  
 3-PEB-HISO-656-R04, Engineering Evaluation of UT Inspected Component, performed  
 11/1/2017  
 3-PEB-ISO-3-02-15-V03 U/S, Engineering Evaluation of UT Inspected Component, performed  
 10/2/2015  
 3-PEB-iso-3-12-101-V01 D/S, Engineering Evaluation of UT Inspected Component, performed  
 10/2/2015  
 3-PEB-ISO-3-12-15-R02, Engineering Evaluation of UT Inspected Component, performed  
 10/7/2015  
 3-PEB-ISO3-12-15-R02, Engineering Evaluation of UT Inspected Component, performed  
 10/7/2015  
 ST-M-40D-601-2, Control Room Emergency Ventilation Filter Train B Test, performed 1/13/16  
 ST-M-40D-905-2, Control Room Emergency Ventilation Filter Train A Test, performed 6/6/16

Maintenance Rule Walkdown Datasheet, Room 414, Completed 12/16/1997, 1/29/2002,  
2/8/2007, 12/4/2012, and 11/1/2016

Maintenance Rule Walkdown Datasheet, Room 457, Completed 6/17/1998, 4/2/2002,  
6/22/2007, 12/26/2012, 8/14/2017

Work Orders

R1265418

C0234463

C0243177

04261297

04262165

04275013

04587766

04625728

04718861