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

January 12, 2022

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

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNIT 1 – SAFSTOR INSPECTION REPORT 05000171/2021001

Dear Mr. Hanson:

On December 7, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the Peach Bottom Atomic Power Station Unit 1 (Peach Bottom 1). An on-site inspection was performed December 6-7, 2021. Additional inspection activities (in-office reviews) were conducted remotely as a consequence of the COVID-19 public health emergency (PHE) during this inspection. The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of plant walk-downs by the inspectors, interviews with site personnel, and a review of procedures and records.

The results of the inspection were discussed with Mr. Matt Herr, Site Vice President, and other members of your organization on December 16, 2021, via teleconference, at the conclusion of the inspection and are described in the enclosed report. No violations were identified.

In accordance with 10 Code of Federal Regulations (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Radioactive Waste; Decommissioning of Nuclear Facilities**; then **Regulations**, **Guidance and Communications**. The current Enforcement Policy is included on the NRC's website at www.nrc.gov; select **About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents**; then **Enforcement Policy** (Under 'Related Information'). You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

B. Hanson

No reply to this letter is required. Please contact Orysia Masnyk Bailey at 864-427-1032 if you have any questions regarding this matter.

Sincerely,

Anthony M. Dimitriadis

Digitally signed by Anthony M. Dimitriadis
Date: 2022.01.12 14:25:11 -05'00'

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Docket No: 05000171
License No: DPR-12

Enclosure: Inspection Report No. 0500171/2021001
w/ Attachment

cc w/encl: Distribution via ListServ

B. Hanson

PEACH BOTTOM ATOMIC POWER STATION, UNIT 1 – SAFSTOR INSPECTION REPORT 05000171/2021001 DATED JANUARY 12, 2022

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Docket No.	050-00171
License No.	DPR-12
Inspection No.	05000171/2021001
Licensee:	Exelon Generation Company, LLC (Exelon)
Facility:	Peach Bottom Atomic Power Station, Unit 1
Location:	Delta Pennsylvania
Inspection Dates:	December 6-7, 2021 Exit Meeting December 16, 2021
Inspectors:	Orysia Masnyk Bailey, Health Physicist Decommissioning, ISFSI, and Reactor Health Physics Branch Division of Radiological Safety and Security Shawn Seeley, Health Physicist Medical and Licensing Assistance Branch Division of Radiological Safety and Security
Approved By:	Anthony Dimitriadis, Chief Decommissioning, ISFSI, and Reactor Health Physics Branch Division of Radiological Safety and Security

Enclosure

EXECUTIVE SUMMARY

Exelon Generation Company LLC
Peach Bottom Atomic Power Station, Unit 1
NRC Inspection Report No. 05000171/2021001

An announced routine SAFSTOR inspection was completed on December 7, 2021 at the permanently shut down Peach Bottom Atomic Power Station, Unit 1 (Peach Bottom 1). The inspectors reviewed activities related to the safe storage of radioactive material, including site operations, engineering, maintenance, plant support activities, management oversight, and corrective action program (CAP) implementation. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs. At the time of the inspection, no decommissioning activities were being conducted at Peach Bottom 1. The U.S. Nuclear Regulatory Commission's (NRC's) program for overseeing the safe storage of a shutdown nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

Based on the results of this inspection, no violations were identified.

REPORT DETAILS

1.0 Background

Peach Bottom Unit 1 was a high temperature gas-cooled demonstration power reactor that operated from February 1966 until October 31, 1974. It was permanently shut down and has been in safe storage (SAFSTOR) since that time. Exelon plans to dismantle Unit 1 in parallel with the decommissioning of the operational Units 2 and 3 after they have been permanently shut down. All fuel from Unit 1 has been removed from the reactor and shipped to an offsite facility. The spent fuel pool has been drained, decontaminated, and radioactive liquids have been removed. Intrusion water that occasionally collects in the reactor containment sump is periodically pumped out of the sump and transferred to the common radwaste building used for Peach Bottom Units 2 and 3 for processing.

The NRC's program for overseeing the safe storage and decommissioning of a shut-down nuclear power reactor is described in IMC 2561.

2.0 SAFSTOR Performance and Status Review

a. Inspection Scope (Inspection Procedures 37801, 40801, 60801, 64704, 71801, 83750, 84750, 86750)

A routine announced safety inspection was conducted from December 6-7, 2021. The inspection consisted of plant walkdowns, interviews with Exelon personnel, and a review of procedures and records. The inspectors reviewed the SAFSTOR program as outlined in the Updated Final Safety Analysis Report (UFSAR), technical specifications (TS), and procedure DC-PB-800, “Unit 1 Process Control Program,” to assess the adequacy of management oversight for the Unit 1 facility. Specifically, the inspectors reviewed the decommissioning management and staff organization and Exelon’s implementation of Unit 1 programs for the SAFSTOR phase of decommissioning. The inspectors also conducted plant walk-downs to assess the material condition of the Unit 1 buildings.

The inspectors reviewed the results of the Exelon “Unit 1 Exclusion Area Inspection” semi-annual surveillance tests to ensure exclusion area barriers, radiological conditions, water intrusion, and effluent release limits are as specified in the TS. Additionally, as part of this review, the inspectors reviewed the program for structural monitoring inspections at Unit 1.

The inspectors reviewed activities, components, and documentation associated with the following SAFSTOR programs: decommissioning organization, staffing, and cost controls; safety reviews and modifications; fire protection, maintenance and surveillance, and license compliance.

The inspectors evaluated whether the following programs that remain associated with programs for Units 2 and 3 are being adequately applied and administered for Unit 1:

occupational radiation exposure, radioactive effluent technical specifications (RETS), the site radiological environmental monitoring program (REMP), and the processing and transportation of radioactive waste.

The inspectors reviewed Exelon fleet audit reports, corrective action program (CAP) documents, and the onsite and offsite safety review committee activities associated with Unit 1 to determine if issues were being appropriately identified, assessed, and reviewed and that corrective actions had been appropriately implemented.

The inspectors also reviewed radiological survey reports and condition reports.

b. Observations and Findings

The inspectors confirmed that the SAFSTOR program was being effectively implemented. The inspectors verified that the maintenance and surveillance program for systems and components had been conducted in accordance with the technical specification requirements and established procedures. The inspectors also confirmed that no dismantlement or decommissioning activities were performed since the previous inspection.

The inspectors reviewed information relevant to the status of the decommissioning trust fund and its expenditures, as provided by Exelon during the inspection period, with no concerns identified.

During the previous NRC inspection in 2020, the NRC identified a non-cited violation of Section 2.3 of Amendment 10, Appendix A, Technical Specifications, which requires that a semi-annual inspection, including a radiological survey, of the accessible portions of the exclusion area and inspection of the accessible areas below ground level in the containment vessel. Specifically, from July 1978 until October 2020, these inspections did not include areas of containment that could be accessed by unlocking barrier B-14 on the Refueling Floor to access the intermediate and ground-level floors.

The licensee addressed this violation by revising ST-H-099-960-2, Unit 1 Exclusion Area Inspection on March 25, 2021 (Rev. 27) to allow access to the areas in question by granting entry to the southwest stairway leading from the refueling floor to the lower levels. This was done by providing the key to unlock barrier B-14. This required a revision to the Unit 1 UFSAR which clarified some ambiguity between periodic and special inspections of containment.

The boundary of the controlled area and the barriers in place to limit access to the controlled area had not been altered. Areas of containment which are sealed due to radiological concerns or other safety hazards will remain inaccessible.

The inspectors entered the Unit 1 containment with members of the Peach Bottom staff for a plant walkdown. The entrances to containment were barricaded (as required by TS) with a locked fence and posted as a “radiologically controlled area” (RCA). All entrants were briefed on radiological conditions, signed-onto a radiological work permit, and escorted by a radiological protection technician.

The annual radiological effluent and the annual REMP reports demonstrated that all calculated doses were below regulatory dose criteria of 10 CFR 50, Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low as is Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents." The inspectors discussed shipping requirements and processes with site staff to gain an understanding of the site's experience and expertise on shipping radwaste.

Findings or issues identified in audits, plant equipment operator rounds, and staff observations were entered into the CAP. Site staff effectively addressed the issues identified, implemented corrective actions, and tracked them to closure. Condition reports and corrective actions appeared to be prioritized and evaluated commensurate with their safety significance.

c. Conclusions

Based on the results of this inspection, no violations were identified.

3.0 Exit Meeting Summary

On December 16, 2021, the inspectors presented the inspection results to Mr. Matt Herr, Site Vice President, and other members of Exelon's organization via teleconference. No proprietary information was retained by the inspectors or documented in this report.

KEY POINTS OF CONTACT

Licensee

M. Herr, Site Vice President
S. O'Dwyer, Manager of Regulatory Assurance
D. Turek, Director of Organizational Performanc
e and Regulatory Assurance
T. Angelbert, Senior Engineer
R. Disabatino, Operations Director
B. Dizebba, Manager of Radiation Protection Programs
A. Frain, Senior Manager Maintenance Execution
D. Williams, Unit 1 Project Manager

ITEMS OPEN, CLOSED, AND DISCUSSED

The inspectors reviewed the corrective measures implemented for the non-cited violation (NCV) associated with TS Section 2.3 identified during the previous NRC inspection.

LIST OF DOCUMENTS REVIEWED

Annual Radiological Environmental Operating Report 76, January 1, 2020 through December 31, 2020, Peach Bottom Atomic Power Station Units 2 and 3
Annual Radiological Groundwater Protection Program Report (ARGPPR)
January 1 through December 31, 2020, Peach Bottom Atomic Power Station Units 2 and 3
Annual Radioactive Effluent Release Report 63, January 1, 2020 through December 31, 2020, Peach Bottom Atomic Power Station Units 2 and 3 containing Appendix A Radiological Dose Calculations Manual Specifications (ODCMS) and Bases, Rev. 16
Incident Reports 04448852, 04448849, 04425572, 04418564, 04408190, 04367008, 04367005, and 04367002
LS-AA-104-1001, Rev. 4, UFSAR Change 2021-002
"Entry Into Unit 1 During SAFSTOR Decommissioning Status," DC-PB-800-1000, Revision 2
"Quality Assurance Topical Report (QATR)," NO-AA-10, Revision 97
Radiation Work Permit PB-C-21-00121, Revision 0
Radiological surveys, Unit 1, dated May 7, 2021
"Report on Status of Decommissioning Funding for Shutdown Reactors," RS-20-030, February 24, 2021
Spreadsheet, Peach Bottom Expenses for 2020
Technical Specifications for Peach Bottom Atomic Power Station Unit No. 1, Appendix A to License No. DPR-12, Amendment 11

LIST OF ACRONYMS USED

CAP	Corrective Action Program
Exelon	Exelon Generation Company, LLC
IMC	Inspection Manual Chapter
IP	Inspection Procedure
NCV	Non- Cited Violation
NRC	Nuclear Regulatory Commission
PBAPS	Peach Bottom Atomic Power Station
RCA	Radiologically Controlled Area
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Environmental Technical Specifications
SAFSTOR	safe storage
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
Unit 1	Peach Bottom Atomic Power Station Unit 1