

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 05000171/2008009
Docket No. 05000171
License No. DPR-12
Licensee: Exelon Generation Company, LLC
Facility: Peach Bottom Atomic Power Station, Unit 1
Location: Delta, Pennsylvania
Inspection Dates: July 1-2, 2008 and August 14, 2008
Dates Follow-up Information Received: July 28-31, 2008; August 4-8, 2008; and August 28, 2008
Inspectors: Laurie Kauffman, Health Physicist
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ADAMS ACCESSION: Letter ML082880597; IR ML082880609

Enclosure

EXECUTIVE SUMMARY

Exelon Generation Company, LLC
Peach Bottom Atomic Power Station (PBAPS), Unit 1 (U1)
NRC Inspection Report No. 05000171/2008009

This routine inspection included a review of SAFSTOR¹ activities related to the safe storage of radioactive material and implementation of the U1 Technical Specification requirements (TS). The inspection was conducted by a regional health inspector and a FSME project manager. The NRC inspection focused on Exelon's ability to implement the TS requirements to control access to the exclusion areas; perform periodic inspections and maintain records, including records required by 10 CFR 50.75(g); and, reportable events. In addition, the inspectors reviewed Exelon's programs for quality assurance, corrective actions, maintenance and surveillance, radiation controls, radioactive effluents, and environmental monitoring.

Summary of Findings:**A. NRC-Identified Findings and Self-Revealing Findings**

- The inspectors identified a non-cited violation of TS 2.3(b)(4), "Periodic Inspections, Semi-Annual Inspections," for the failure to perform a radiological analysis of water in the containment vessel. Specifically, Exelon did not perform a radiological analysis of the water that had accumulated in the containment vessel on the 87-foot, 9-inch (87'9") elevation under a removable floor plate (diamond-plate). This finding was determined to be a Severity Level IV violation consistent with Supplement IV.D.9 of the NRC's Enforcement Policy. However, the finding was dispositioned as a non-cited violation, consistent with Section VI.A.1 of the NRC's Enforcement Policy. (Section 2.1)
- The inspectors identified a non-cited violation of 10 CFR 50.75(g), "Reporting and Recordkeeping for Decommissioning Planning," for the failure to properly maintain decommissioning records. Specifically, Exelon did not maintain (or reference the location of) all of the required records, important to the safe and effective decommissioning of the facility, in an identified location, as specified in 50.75(g). This finding is a Severity Level IV violation consistent with Supplement IV.D.9 of the NRC's Enforcement Policy. However, the finding was determined to be a non-cited violation, consistent with Section VI.A.1 of the NRC's Enforcement Policy. (Section 3.1)

B. Licensee-Identified Violations

- None

¹ SAFSTOR, according to NRC Inspection Manual Chapter 2561, is the decommissioning method of placing and maintaining the nuclear facility in a condition that allows the radioactive material to be safely stored and the facility to be subsequently decontaminated to permit the release of the property and termination of the license.

REPORT DETAILS

The Peach Bottom Atomic Power Station, (PBAPS) Unit 1 (U1) was a high temperature gas-cooled demonstration power reactor that operated from February 1966 until October 31, 1974, and had been permanently shutdown and in safe storage (SAFSTOR) since that time. All fuel had been removed from the reactor and shipped to an offsite facility. The spent fuel pool had been drained and decontaminated, and all radioactive liquids had been removed.

1.0 Management Oversight

1.1 Corrective Action Program

a. Inspection Scope (Inspection Procedure (IP) 40801)

The inspectors reviewed Exelon's corrective action program (CAP) for the identification, evaluation, and resolution of problems. The inspectors reviewed selected assignment reports (ARs) and issue reports (IRs) from 2006 through 2008. The inspectors focused on reports related to water intrusion into the U1 containment vessel and the radioactive waste building. The inspectors also focused on reports related to the identification of tritium contamination in water located internal to the U1 containment vessel. The inspectors reviewed the reports to determine if Exelon evaluated the source of the water intrusion and tritium contamination, and resolved the issues in a timely manner.

b. Observations and Findings

A non-cited violation (NCV) related to the adequacy of Exelon's actions in response to the water intrusion into the U1 containment vessel and the radioactive waste building was identified. This finding is discussed in detail in Section 2.1 of this inspection report.

c. Conclusions

Exelon used the CAP to identify and resolve issues. However, a finding relative to the adequacy of Exelon's actions in response to the water intrusion into the U1 containment vessel and the radioactive waste building was identified and is discussed in detail in Section 2.1 of this inspection report.

2.0 Decommissioning Performance and Status at Permanently Shutdown Reactors

2.1 Maintenance and Surveillance Program and Decommissioning Status

a. Inspection Scope (IPs 62801 and 71801)

The inspectors evaluated Exelon's maintenance and surveillance program related to the implementation of the semi-annual surveillance test (ST), ST-H-099-960-2, "Unit 1 Exclusion Area Semi-Annual Inspection." The inspectors reviewed and assessed the STs from January 2005 through July 2008, and evaluated implementation of the TS requirements. The inspectors observed Exelon conduct visual inspections of the U1 exclusion area security barriers, verify the anode current meter and the voltage meter readings located on the cathodic protection system panel, survey the outside of the equalization line high efficiency particulate air (HEPA) filter on the containment equalizing line (containment breather), perform an operability check of the four containment vacuum breaker valves, and monitor for water intrusion. The inspectors also observed Exelon conduct visual inspections to assess the material condition of the containment vessel, radioactive waste building, and spent fuel building, including checking for water intrusion and verifying the accumulation of water in the containment sump was less than the TS water limit of 500 gallons. On August 14, 2008, the inspectors conducted a follow-up inspection to evaluate Exelon's performance related to the processing of water from the lower level of the containment vessel, and the investigation to determine the source of the water.

b. Observations and Findings

Technical Specification 2.3(b)(4), requires, in part, to inspect the accessible areas below ground level in the containment vessel for water accumulation and perform a radiological analysis if there is sufficient water accumulation to obtain a sample. Contrary to the above, Exelon failed to perform a radiological analysis on the water that had accumulated in the containment vessel. Specifically, water had accumulated in the containment vessel on the 87-foot, 9-inch (87'9") elevation under a removable floor plate (diamond-plate) in the hallway that leads to the sub-pile room. The water has been under the diamond-plate since at least January 2005.

Based on a review of the STs and the associated chemistry analyses performed on January 5, 2005, and January 7, 2007, the inspectors noted that the water under the diamond-plate had not been collected and analyzed, as required by TS 2.3(b)(4). The inspectors determined that this was a violation of TS 2.3(b)(4). The inspectors determined that this was a Severity Level IV violation consistent with Supplement IV.D.9 of the NRC's Enforcement Policy. However, because Exelon initiated a plan to restore compliance within a reasonable time after the violation was identified, entered the issue into the corrective action program (AR-00792182) to prevent recurrence, and because the issue was neither repetitive nor willful, this violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy:

NCV 05000171/2008009-01, Failure to perform a radiological analysis according to TS 2.3(b)(4).

c. Conclusions

Exelon's program for conducting the maintenance and surveillance was generally adequate, with one exception. Exelon failed to perform a radiological analysis of the water in the containment vessel as required by TS 2.3(b)(4). This violation is being treated as a NCV.

3.0 Plant Support

3.1 Occupational Radiation Exposure Program and Effluent and Environmental Monitoring Program

a. Inspection Scope (IPs 83750 and 84750)

The inspectors evaluated aspects of Exelon's radiation protection program, radioactive effluent monitoring program, and radiological environmental monitoring program. The inspectors assessed the licensee's ability to implement the TS requirements to: (1) control access to the exclusion areas; (2) perform periodic inspections; and, (3) maintain records in sufficient scope regarding the results of the inspections, including records required by 10 CFR 50.75(g) and reportable events. The inspectors observed Exelon conduct radiation level measurements, surface contamination surveys, and air particulate samples. The inspectors assessed radiation worker practices, radiological postings and barriers, and access controls to radiological areas. The inspectors reviewed the STs from January 2005 through July 2008. The inspectors also reviewed selected analysis results to verify that the licensee was monitoring for liquid and gaseous effluent releases, as required by TS.

b. Observations and Findings

10 CFR 50.75(g), requires, in part, that, "Each licensee shall keep records of information important to the safe and effective decommissioning of the facility in an identified location until the license is terminated by the Commission. If records of relevant information are kept for other purposes, reference to these records and their locations may be used." Contrary to the above, on August 14, 2008, the inspectors determined that Exelon did not maintain (or reference) all of the required records important to the decommissioning of the facility in an identified location, as specified in 10 CFR 50.75(g). Specifically, the site 10 CFR 50.75(g) file contained a list of spills and releases from 1976 to 2004, but did not contain a reference to all the other required records and their locations, as specified in 10 CFR 50.75(g).

Based on the above, the inspectors determined that the failure to properly maintain the required decommissioning records was a violation of 10 CFR 50.75(g). This finding was determined to be a Severity Level IV violation consistent with Supplement IV.D.9 of the NRC's Enforcement Policy. However, because Exelon initiated a plan to restore compliance within a reasonable time after the violation was identified, entered the issue into the corrective action program (AR-00811501) to prevent recurrence, and because the issue was neither repetitive nor willful, this violation is being treated as a NCV,

consistent with Section VI.A.1 of the NRC Enforcement Policy:
NCV 05000171/2008009-02, Failure to properly maintain decommissioning records according to 10 CFR 50.75(g).

c. Conclusions

Exelon's programs for conducting the radiation protection, effluent, and environmental monitoring were conducted according to the regulatory requirements, TS, and implementing procedures, with one exception. Exelon did not maintain records important to the decommissioning of the facility as required by 10 CFR 50.75(g). This violation is being treated as a NCV.

4.0 Exit Meeting

On July 2, 2008, the inspector presented the preliminary inspection results to Mr. Maguire, and members of the Exelon staff. The inspector confirmed that proprietary information was not provided or examined during the inspection. In addition, on September 10, 2008, the licensee was contacted via telephone and a final summary exit was conducted.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Armstrong, Regulatory Affairs Manager
T. Basso, Maintenance Director
C. Behrend, Site Engineering Director
J. Chizever, Mechanical Design Engineering Manager
R. Franssen, Operations Director
D. Foss, Senior Regulatory Affairs Engineer
C. Hewell, Mechanical Design Engineer
D. Hines, Radiation Protection Supervisor
R. Holmes, Applied Radiation Protection Manager
L. Lucas, Chemistry Manager
W. Maguire, Site Vice President
H. McCrory, Technical Support Radiation Protection Manager
W. Nelle, Regulatory Assurance
M. Ross, Radwaste and Environmental Supervisor
G. Stathes, Acting Plant Manager
J. Stenclik, Senior Chemistry Engineer
R. Smith, Regulatory Affairs Engineer
M. Taltoan, Chemistry Engineer
S. Taylor, Radiation Protection Manager

INSPECTION PROCEDURES USED

40801 Self Assessment, Auditing, and Corrective Action
62801 Maintenance and Surveillance at Permanently Shutdown Reactors (PSRs)
71801 Decommissioning Performance and Status Review at PSRs
83750 Occupational Radiation Exposure
84750 RadWaste Treatment, and Effluent and Environmental Monitoring

LIST OF DOCUMENTS USED

Condition Reports

AR-00811501, Unit 1 Decommissioning Records Organization Needs Improving
AR-00504598, Historical 10 CFR 50.75(g) documentation
AR-00792182, Water Found in Sump Located in Unit 1 Containment Basement
AR-00771050, Processing Water from Unit 1 Radwaste and Containment Sumps
AR-00665835, Determine if Concrete in Unit 1 is a Source of Contamination
AR-00686183, Determine if Concrete in Unit 1 is a Source of Contamination
AR-00718280, Pump All Water Out of Unit 1 Containment Sump
AR-00647463, Water in Unit 1
AR-00665827, Pump out U1 Containment of All Accumulated Condensation
AR-00704401, Unit 1 Radwaste Sump Monitoring Results
AR-00705580, Multiple Lighting Deficiencies in Unit 1
AR-00745557, Unit 1 Sump Water Sample not Analyzed for All Radioisotopes

Procedures

HU-AA-1211, Briefings – Pre-Job, Heightened Level of Awareness, Infrequent Plant Activity and Post-Job Briefings, Revision 3
LS-AA-125, Corrective Action Program (CAP) Procedure, Revision 12
LS-AA-126-1005, Check-In Self-Assessment Report Template, Attachment 2, Revision 4
LS-PB-800, Unit 1 Process Control Program, Revision 0
RP-AA-300, Radiological Survey Program, Revision 4
RP-AA-301, Radiological Air Sampling Program, Revision 2
RW-AA-109, Process Control Program for Radioactive Wastes, Revision 6
ST-H-099-960-2, Unit 1 Exclusion Area Semi-Annual Inspection, Revisions 10, 11, 12, and 13

Results of Completed Surveillance Tests and Associated Chemistry Analyses

January 5, 2005; July 7, 2005; January 4, 2006; July 6, 2006; January 3, 2007; July 7, 2007;
January 7, 2008; July 2, 2008;

Unit 1 Well Data from March 2006 – June 2008

Reports

Annual Unit 1 Decommissioning Reports for 2005, 2006, and 2007

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000171/2008009-01	NCV	Failure to perform a radiological analysis, as required by TS 2.3(b)(4). (Section 2.1)
05000171/2008009-02	NCV	Failure to maintain decommissioning records, as required by 10 CFR 50.75(g). (Section 3.1)

Discussed

None.

LIST OF ACRONYMS USED

AR	Action Reports
CAP	Corrective Action Program
HEPA	High Efficiency Particulate Air
IR	Issue Reports
NCV	Non-Cited Violation
PBAPS	Peach Bottom Atomic Power Station
ST	Surveillance test
TS	Technical Specifications
U1	Unit 1