

Technical Specification 2.4(a)

May 08, 2009

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Peach Bottom Atomic Power Station (PBAPS) Unit 1
Facility Operating License No. DPR-12
NRC Docket No. 50-171

Reference: 2008 PBAPS Radioactive Effluent Release Report No. 50 for Units 1, 2, 3 and
Independent Spent Fuel Storage Installation

Subject: PBAPS Unit 1 Decommissioning Status Report

In accordance with Peach Bottom Atomic Power Station, Unit 1 Technical Specifications, an annual report is required to:

- Describe the results of facility radiation surveys,
- Report the quantities of radioactive effluents released,
- Report the status of the facility and evaluate the performance of security and surveillance measures, and
- Provide containment vessel accumulated water analyses, as applicable.

Radiation Surveys:

Radiological surveys are performed at least semi-annually in the accessible areas of the exclusion area. In 2008, radiation levels did not exceed 0.2 mrem/hour and all smearable contamination levels were less than 1000 dpm/100cm² beta-gamma.

Quantities of Radioactive Effluents Released:

There were no releases from Unit 1 to the environment in 2008.

Status of Facility and an Evaluation of the Performance of Security and Surveillance Measures:

There were no significant events involving Unit 1 during 2008. The unit remains in the SAFSTOR status of decommissioning. In 2008, all exclusion area barriers as described in the Technical Specifications were maintained locked except when opened to provide access and egress for inspections, surveys, or repairs. Exclusion area barriers have not visually degraded from previous reports. Semi-annual inspections (surveillances) are performed.

Based on routine NRC inspections in 2008, two Non-Cited Violations (NCVs) were issued to the station. Both NCVs are related to the adequacy of Exelon's actions in response to the water intrusion into the Unit 1 containment structure and the radioactive waste building. NRC-NCV-2008009-01 is due to a failure to perform a required Unit 1 analysis; NRC-NCV-2008009-02 is due

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to a failure to maintain decommissioning records in a central location. Both issues are entered in the station corrective action process and are being resolved.

Containment Vessel Accumulated Water Analyses:

There is currently < 100 gallons of water that contains tritium in the Unit 1 containment building and radioactive waste building. In April 2008, water was pumped from a trough at the 95 foot elevation in the Unit 1 containment building, and transported to Unit 2 for processing. In July 2008, the trough refilled with tritiated water. The station initiated a project to find and mitigate the source of water entering the Unit 1 facility, and expects to resolve the issue in 2009. Based on data collected to date, the most likely source of the water in the Unit 1 containment building is from exterior water entering the Unit 1 containment building over a long period of time. Exterior water from rain entered the building over many years via shrinkage cracks and defects in the flashing that surround the building. Once inside the building, the water does not exit the building. Since the building is not well ventilated, the water that is in the building evaporates and re-condenses based on temperature. There is no evidence that water exits the building.

In April 2008, water was also pumped from the Radioactive Waste (RW) sump. The water in this area had a tritium concentration of 9620 picocuries/liter. The water in this sump was caused by storm water that entered the sump through a degraded door. The water in this sump has not returned since the door was repaired and since the water was pumped out of the sump.

There is no gamma activity in the Unit 1 water.

The tritium concentrations in the Radiological Groundwater Protection Program (RGPP) monitoring wells that are used to monitor Unit 1 have no detectable tritium. Monitoring wells surrounding Unit 1 remain <LLD (<200 picocuries/ml). In addition, new wells were installed in 2008 to specifically monitor the Unit 1 facility remain <LLD.

Unit 1 RW sump is checked for water accumulation once per month, and weekly containment building inspections were initiated in August 2008. Water from the RW sump and containment has been removed to the extent possible and processed in accordance with the Unit 1 Final Safety Analysis Report. Any water identified is sampled and analyzed for tritium and other radionuclides.

There are no regulatory commitments contained in this letter. If you have any questions, please contact Larry Lucas at 717-456-3608.

Sincerely,



William F. Maguire
Site Vice President
Peach Bottom Atomic Power Station

CCN 09-40

cc: NRC Regional Administrator, Region I
NRC Senior Resident Inspector - PBAPS A4