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Technical Specification 2.4(a)

March 30, 2018

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

Subject: PBAPS Unit 1 Decommissioning Status Report - 2017

In accordance with Peach Bottom Atomic Power Station, Unit 1 Technical Specifications, the 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 semi-annually in the exclusion area. There were no significant concerns detected. All surveys were less than the required 1 mR/hr in accessible areas. Additionally, all smearable contamination levels were less than 1000 dpm/100cm$^2$ beta-gamma. The results of these surveys are available in the station records.

Quantities of Radioactive Effluents Released:

In 2017, there were no direct gaseous or liquid releases or discharges from Unit 1 to the environment. During the reporting period, a total of 532.7 gallons of water with low concentrations of Tritium were collected from Unit 1 and stored at Unit 2 and 3, for further processing. No gamma emitting nuclides were identified above detectable limits. Also during the reporting period, two separate releases of tritiated water, which originated from Unit 1, were processed through the Unit 2 and Unit 3 liquid radwaste system. A total of 804.7 gallons of tritiated water collected from Unit 1 from 2015 to 2017 was released. The first release of Unit 1 water contained 34 gallons of water collected in 2015, 238 gallons of water collected in 2016, and 103.7 gallons of water collected in 2017. The average tritium concentration of the released water was 2.58E-03 μCi/mL, producing an estimated dose of 3.00E-08 mrem. The second release of Unit 1 water contained 429 gallons of water collected in 2017, with an average tritium concentration of 5.65E-04 μCi/mL and produced an estimated dose of 1.02E-08 mrem. The annual dose to the child total body and max organ (all organs but Bone are equal) is 4.02E-08 mrem which is 4.02E-07% of the Total Body Dose Limit and 2.01E-07% of the Max Organ Dose Limit.

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

There were no significant events involving Unit 1. All inspections were determined to be satisfactory with no major issues identified. The structural inspections performed in accessible areas showed no indication of significant corrosion, cracks, or structural integrity concerns.

Previous years' inspections had noted a small amount of water in the Unit 1 Spent Fuel Pool (IR 1588453). No significant water was found in the Unit 1 Spent Fuel Pool floor during the Spring or Fall inspections in 2017.

The unit remains in the SAFSTOR status of decommissioning. All exclusion area barriers as described in the Technical Specifications are maintained locked except when opened to provide access and egress for inspections, surveys, or repairs. Exclusion area barriers have not degraded from previous reports.

Containment Vessel Accumulated Water Analyses:

A total of approximately 532.7 gallons of water accumulated in Peach Bottom Unit 1 Containment in 2017. Two inspections and pump outs occurred in 2017, in May and December, collecting 103.7 gallons and 429 gallons, respectively. During each inspection, the accumulated water was less than the maximum allowable Technical Specification limit for water collection in containment, 500 gallons. The water was collected from the Containment Sump and R/W Sump, 205.7 gallons and 327 gallons, respectively. The source of the water was attributed to groundwater in-leakage; corrective actions are in place to reduce the amount of in-leakage. The water contained tritium, while all gamma-emitting nuclide concentrations were below detectable levels. The average tritium concentration of the water collected in 2017 was 9.19E-04 μCi/mL, with a maximum tritium concentration of 2.38E-03 μCi/mL. The tritiated water was removed and transferred to Units 2 & 3 for future processing and release.

Monitoring wells for the Radioactive Groundwater Protection Program in the vicinity of Unit 1 remain at normal background levels. All tritium concentrations sampled and analyzed were below detectable level in wells MW-PB-8, MW-PB-10, MW-PB-14, MW-PB-15, and MW-PB-16.

There are no regulatory commitments contained in this letter. If you have any questions, please contact Ben Neufeld, Radwaste and Environmental Supervisor, at 717-456-4809.

Respectfully,

Matthew J. Herr
Plant Manager
Peach Bottom Atomic Power Station

cc: NRC Regional Administrator, Region I
NRC Senior Resident Inspector
R. R. Janati, Commonwealth of Pennsylvania

CCN 18-29