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Technical Specification 2.4(a)

June 29 2011

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 - 2010

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 semi-annually in the exclusion area. In 2010, radiation levels did not exceed 0.2 mrem/hour and all smearable contamination levels were less than 1000 dpm/100cm^2 beta-gamma.

Quantities of Radioactive Effluents Released:

There were no gaseous releases and no unplanned liquid releases from Unit 1 to the environment in 2010. As discussed below under the section entitled, "Containment Vessel Accumulated Water Analyses", there were planned discharges of liquid effluents in 2010.

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

There were no significant events involving Unit 1 during 2010. 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 visually degraded from previous reports. Quarterly surveillances continue to be performed due to ongoing accumulation of water within the containment vessel.

FSME20

Containment Vessel Accumulated Water Analyses:

Approximately 413 gallons of tritiated water from Peach Bottom Unit 1 were transferred to Peach Bottom Units 2 & 3 radwaste system and discharged through the laundry drain system as normal discharges. The water was analyzed for both tritium and other radioactive isotopes. The average tritium concentration over the 12-month period was 4.28E-3 µCi/ml. The Gamma spectroscopy analyses of the same water samples were less than the Lower Limit of Detection for other isotopes of concerns. The tritium concentrations in the monitoring wells that are close to Unit 1 remain at normal background levels.

There are no regulatory commitments contained in this letter. If you have any questions, feel free to contact Robert Reiner at 717-456-3608.

Sincerely,

Thomas J. Dougherty
Site Vice President
Peach Bottom Atomic Power Station

CCN 11-53
cc: NRC Regional Administrator, Region I
NRC Senior Resident Inspector
R. R. Janati, Commonwealth of Pennsylvania