

Exelon Nuclear  
Peach Bottom Atomic Power Station  
1848 Lay Road  
Delta, PA 17314-9032

Telephone 717.456.7014  
www.exeloncorp.com

10CFR 50.4

July 28, 2006

Mr. Stuart A. Richards, Deputy Director  
Division of Inspection and Regional Support  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Peach Bottom Atomic Power Station, Units 2 and 3  
Facility Operating License Nos. DPR-44 and DPR-56  
NRC Docket Nos. 50-277 and 50-278

**Subject: Groundwater Protection – Data Collection Questionnaire**

The nuclear industry, in conjunction with the Nuclear Energy Institute, has developed a questionnaire to facilitate the collection of groundwater data at commercial nuclear reactor sites. The objective of the questionnaire is to compile baseline information about the current status of site programs for monitoring and protecting groundwater and to share that information with NRC. The completed questionnaire for the Peach Bottom atomic Power Station is enclosed.

This submittal contains no new regulatory commitments.

If you have any questions, feel free to contact Mr. James Armstrong at 717-456-3351.

Sincerely,



Robert C. Braun  
Site Vice President  
Peach Bottom Atomic Power Station

cc: F. L. Bower, Senior Resident Inspector, USNRC, PBAPS  
R. R. Janati, Commonwealth of Pennsylvania  
Document Control Desk, USNRC, Washington DC  
NRR PBAPS Project Manager

CCN: 06-14053  
Attachment

# Industry Groundwater Protection Initiative Voluntary Data Collection Questionnaire

Plant: Peach Bottom Atomic Power Station

1. **Briefly describe the program and/or methods used for detection of leakage or spills from plant systems, structures, and components that have a potential for an inadvertent release of radioactivity from plant operations into groundwater.**
  - As part of a fleet-wide systematic assessment, Peach Bottom Station performed a technical review of each plant system and structure to determine if inadvertent releases from these systems could potentially impact the environment. Each system was evaluated and those system components that contain or could potentially contain radioactively contaminated liquids were identified and assessed to determine if a potential pathway to the environment existed. A cross-functional collegial team made up of personnel from Operations, Engineering, Chemistry, and Radiation Protection performed the technical review.
  - The plant systems, structures, processes, and components that have a potential for an inadvertent release are routinely monitored to detect leakage or spills through an expansive radiation monitoring system (RMS), operator rounds and employee observations. Additionally, engineering control systems such as secondary containment, spill prevention, overflow detection and leak detection are used to detect and prevent releases from entering the environment.
  - Examples of the surveillance programs and engineering controls employed at Peach Bottom are provided below:
    - Peach Bottom has a Yard Drain System that reduces the hydro-static pressure on plant structures. Groundwater collected from this system is regularly sampled and analyzed for radionuclides.
    - Peach Bottom has a Fuel Pool Leakage detection system, which would indicate any leakage from its fuel pools.
    - Operations personnel perform routine surveillance rounds each shift. These rounds include the requirement to identify and report leaks and spills. Leaks and spills are addressed through: immediate clean-up, notifying supervision for assistance, writing a work request or initiating a Corrective Action Report.
    - System Engineers perform periodic walkdowns of the systems for which they are responsible. These rounds include the requirement to identify and report leaks and spills. Leaks and spills are addressed through: immediate clean-up, notifying supervision for assistance, writing a work request or initiating a Corrective Action Report.
    - The storm drain system, as well as other effluent pathways, are routinely sampled and analyzed for radionuclides.

## Industry Groundwater Protection Initiative Voluntary Data Collection Questionnaire

- Normally non-contaminated systems, which have an interface with contaminated systems are routinely sampled and analyzed for radionuclides.

**2. Briefly describe the program and/or methods for monitoring onsite groundwater for the presence of radioactivity released from plant operations.**

- As part of the fleet wide assessment, Peach Bottom installed fourteen (14) onsite groundwater monitoring wells that will be periodically sampled and analyzed for radionuclides. These wells encircle the site.
- The Lower Limits of Detection (LLDs) used during the fleet wide assessment were:

Nuclide	Typical MDA (pCi/l)
Tritium (H-3)	200
Total Strontium – 89/90	2
Manganese (MN-54)	15
Ferrous Citrate (FE-59)	30
Cobalt (CO-58)	15
Cobalt (CO-60)	15
Zinc (ZN-65)	30
Zirconium (ZR-95)	15
Niobium (NB-95)	15
Cesium (CS-134)	15
Cesium (CS-137)	18
Barium (BA-140)	60
Lanthanum (LA-140)	15

**3. If applicable, briefly summarize any occurrences of inadvertent releases of radioactive liquids that had the potential to reach groundwater and have been documented in accordance with 10 CFR 50.75(g).**

The Peach Bottom Station records inadvertent release of radioactive liquids in accordance with 10 CFR 50.75(g). As part of the fleet wide assessment, a third party environmental engineering firm was contracted to evaluate historic releases, if any, and determine if a potential pathway to the environment existed. Those releases that were determined to have potentially impacted groundwater were subsequently investigated as part of the fleet wide assessment. Based on the results of the hydro-geologic investigation, the historical releases that may have a current impact on groundwater are:

- 1986 - an overflow of the Unit 3 Condensate Storage Tank.
- A copy of the detailed Peach Bottom hydro-geologic investigation report will be provided to the NRC.

## **Industry Groundwater Protection Initiative Voluntary Data Collection Questionnaire**

- 4. If applicable, briefly summarize the circumstances associated with any onsite or offsite groundwater monitoring result indicating a concentration in groundwater of radioactivity released from plant operations that exceeds the maximum contaminant level (MCL) established by the USEPA for drinking water.**
- There have been no identified instances of radioactivity released from Peach Bottom that resulted in groundwater concentrations exceeding the USEPA maximum contaminant levels for drinking water.
- 5. Briefly describe any remediation efforts undertaken or planned to reduce or eliminate levels of radioactivity resulting from plant operations in soil or groundwater onsite or offsite.**
- As a result of the Unit 3 CST overflow in 1986, soil was removed from the immediate area of the spill and shipped to a licensed offsite radioactive waste disposal facility.