

2130-06-20371  
July 31, 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

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

**DOCKET NO:** 50-219


Dear Mr. Richards:

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 Oyster Creek Generating Station is enclosed.

This submittal contains no new regulatory commitments.

Please contact me at 609-971-2300 if you have questions about the enclosed information.

Sincerely,

Handwritten signature of Timothy S. Rausch in cursive, with the word "FOR" written below it.

Timothy S. Rausch  
Site Vice President, Oyster Creek Generating Station

Enclosure

c: USNRC Document Control Desk  
USNRC Regional Administrator – Region 1  
NRR Project Manager – Oyster Creek  
USNRC Resident Inspector – Oyster Creek  
Ralph Andersen, Nuclear Energy Institute  
File No. 06011

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

**Plant: Oyster Creek Generating 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, Oyster Creek 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 Oyster Creek are provided below:
    - The Oyster Creek Station has an operable Spent Fuel Pool Leakage Detection system that is used to monitor for leakage from the spent fuel pool.
    - Operations personnel perform station inspections at least once per shift. These inspections include identification and reporting of any leaks or spills. The response to any leaks or spills may include immediate clean-up, notification of supervision, a request for assistance from on-site staff or a spill response contractor and the preparation of 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.
    - Storage tanks and associated pipelines that may contain radioactive materials are subjected to periodic testing or inspections, based upon availability in order to ensure their integrity. Periodic testing and inspections of storage tanks and associated piping that may contain radioactive materials are controlled via Storage Tank and Piping Programs.
    - Inventory monitoring (water balance) systems are used to identify any unanticipated losses from certain systems containing radioactive liquids.

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

- The Station has a groundwater monitoring network that was installed in 1983, for the purpose of detecting any radiological contaminants in the groundwater beneath the facility that could be attributable to leaks or spills from plant systems, structures or components. The monitoring network consists of 15 wells in the three aquifers of concern. The location of the monitoring wells was based upon a hydrogeologic investigation of the site, an evaluation of plant systems that were potential sources of contamination, and the history of releases from plant systems. The wells are periodically sampled and the samples have been analyzed for tritium, gamma emitting radionuclides and strontium-89/90.
- In addition to the above-described monitoring well network, there are 88 additional monitoring wells at the Site that are also available for sampling.
- The Station's routine Radiological Environmental Monitoring Program includes monitoring of on-site and off-site drinking water supplies for tritium and gamma emitting radionuclides. This includes monthly sampling of one of the on-site potable water wells and the two municipal water systems that supply drinking water to the communities adjacent to the Station.
- 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 Oyster Creek 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.

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- The hydrogeologic investigation determined that there are currently no radiological impacts to groundwater at the Oyster Creek station.
  - A copy of the detailed Oyster Creek hydrogeologic investigation report will be provided to the NRC.
- 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 the Oyster Creek Station 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.**
- There have been no station events requiring remediation efforts at the Oyster Creek Station.