

Exelon Nuclear
Limerick Generating Station
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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

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

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 Limerick Generating Station is enclosed.

This submittal contains no new regulatory commitments.

Please contact me at Thomas Basso (610) 718-2700, if you have questions about the enclosed information.

Sincerely,



Ron J. DeGregorio
Site Vice President-LGS
Exelon Generation Co. LLC

Enclosure: Response to Questionnaire-LGS

cc: USNRC Document Control Desk
Samuel Collins, USNRC Regional Administrator – Region I
Jim Kim, NRR Project Manager – LGS
Sam Hansell, USNRC Resident Inspector – LGS
Ralph Andersen, Nuclear Energy Institute

bcc: R. DeGregorio - GML-5
C. Mudrick - GML-5
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**Industry Groundwater Protection Initiative
Voluntary Data Collection Questionnaire
Plant: Limerick 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, Limerick 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 Limerick are provided below:
 - The LGS plant has a building foundation ground water collection system to collect ground water from around plant structures. Groundwater collected from this system is routed to a holding pond that is regularly sampled and analyzed for radionuclides.
 - The LGS plant has an operable Spent Fuel Leakage Detection system that is used to monitor for leakage from the spent 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.
 - Engineers perform periodic walk downs 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.
 - Chemistry personnel routinely sample and analyze Condensate Storage Tank (CST) & Refueling Water Storage Tank (RWST) dikes, the Ultimate Heat Sink (Spray Pond), both units Cooling Towers and the Auxiliary Boiler

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- Dearator Feed Tank for tritium. Any identified tritium is reported using the corrective action program.

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

- LGS has fifteen (15) onsite groundwater monitoring wells that will be periodically sampled and analyzed for radionuclides.
- 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 Limerick 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 hydrogeologic investigation, the historical releases that may have impacted a current impact on the groundwater are:
 - A steam seal evaporator leak in March 2002 that discharged through the blow-down panel on the north side of the Turbine Building.
- A copy of the detailed Limerick hydrogeologic investigation report will be provided to the NRC.

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- 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 Limerick plant 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 steam seal evaporator leak in March of 2002, 6 inches of gravel over an area of approximately 100 square feet was shipped to a licensed offsite radioactive waste disposal facility.