



An Exelon Company

Clinton Power Station
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Clinton, IL 61727

U-603778
July 27, 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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

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 Clinton Power Station is enclosed.

This submittal contains no new regulatory commitments.

Please contact Mr. Robert J. Campbell at 217-937-3295 if you have questions about the enclosed information.

Sincerely,

Bryan Hanson
Site Vice President
Clinton Power Station

Enclosure

JLP/blf

cc: NRC Document Control Desk
Regional Administrator – NRC Region III
NRC Project Manager, NRR – Clinton Power Station
NRC Senior Resident Inspector – Clinton Power Station
Ralph Andersen, Nuclear Energy Institute

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

Plant: Clinton 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, Clinton Power 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 Clinton are provided below:
 - The Clinton Power Station has a Spent Fuel Leakage Detection System that is used to monitor for leakage from the spent fuel pool.
 - Plant Operations personnel perform routine surveillance rounds each day. These rounds include the requirement to identify and report leaks and spills. Leaks and spills are addressed through: prompt notification to the Shift Manager, immediate clean-up, notifying supervision for assistance and the writing of an Issue Report which results in both the generation of a Work Request and entry into the station's Corrective Action Program (CAP).
 - System Engineers perform periodic walk downs of their respective systems for which they are responsible. These rounds include the requirements to identify and report any leaks and spills. Leaks and spills are addressed through the following: prompt notification to the Shift Manager, immediate clean-up, notifying supervision for assistance and the writing of an Issue Report which results in both the generation of a Work Request and entry into the station's Corrective Action Program (CAP).

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

- Clinton Power Station currently has fourteen (14) groundwater monitoring wells.
- Monitoring wells and surface water are sampled at monthly and quarterly frequencies and are analyzed by an independent off-site laboratory for radionuclides, including tritium.

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

- 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 Clinton Power 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.
 - A copy of the detailed Clinton Power Station 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 Clinton Power Station resulting 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 Clinton Power Station.

July 21, 2006
GO2-06-100

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: COLUMBIA GENERATING STATION, DOCKET NO. 50-397
GROUNDWATER PROTECTION – DATA COLLECTION
QUESTIONNAIRE**

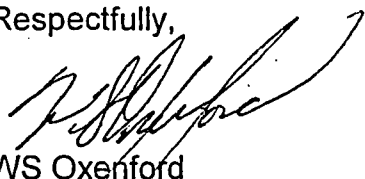
Dear Mr. Richards:

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 the NRC. The completed questionnaire for Columbia Generating Station is enclosed.

There are no commitments being made to the NRC by this letter.

Should you have any questions or desire additional information regarding this matter, please call DW Coleman at (509) 377-4342.

Respectfully,



WS Oxenford
Vice President, Technical Services
Mail Drop PE04

Enclosure

cc: BS Mallett - NRC RIV
BJ Benney - NRC NRR
NRC Sr. Resident Inspector - 988C
USNRC Document Control Desk

RN Sherman - BPA/1399
WA Horin - Winston & Strawn
R Anderson - NEI
L Albin - WDOH

GROUNDWATER PROTECTION – DATA COLLECTION QUESTIONNAIRE

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Industry Groundwater Protection Initiative Voluntary Data Collection Questionnaire

Plant: Columbia Generating Station

Columbia Generating Station (CGS) is located on the USDOE Hanford Site. Past USDOE operations have contaminated the groundwater in the site vicinity. Tritium plumes from two separate USDOE sources currently underlie the plant.

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.
 - One large 24 inch underground Condensate Storage Tank pipe is surrounded by a guard pipe which would direct any leakage to the building penetration where the leakage would be noticed by plant personnel.
 - Chemistry frequently performs a water balance. Significant leakage would be detected and result in an investigation of the cause.
 - Non-radioactive systems with underground piping (Circulating Water, Service Water, Plant Service Water) are routinely monitored to verify the absence of radioactivity.
 - Liquid radwaste processing has been improved such that the plant has not made a liquid radioactive discharge since 1998.
 - 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 Condition Report.
 - The discharge to the storm drain pond is continuously monitored with an automatic sampler. Results are included in the Radiological Environmental Monitoring Program (REMP) Report.

2. Briefly describe the program and/or methods for monitoring onsite groundwater for the presence of radioactivity released from plant operations.
 - CGS is located on the USDOE Hanford Site. USDOE routinely monitors over 700 wells on the Hanford site, including several on the CGS site (<http://groundwater.pnl.gov/> and <http://hanford-site.pnl.gov/envreport/>). The sample results are routinely reviewed by CGS staff.
 - CGS monitors 3 drinking water wells on a quarterly basis. One is located on the plant site and two are located approximately one mile away on the WNP-1 site. These are all deep wells and do not draw

GROUNDWATER PROTECTION – DATA COLLECTION QUESTIONNAIRE

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radioactivity released from plant operations that exceeds the maximum contaminant level (MCL) established by the USEPA for drinking water.

- Energy Northwest has not detected radioactivity in groundwater from plant operations that has exceeded USEPA maximum contaminant levels.
 - Tritium in excess of the USEPA maximum contaminant levels does exist in groundwater on the CGS site due to USDOE sources located on the Hanford site.
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.
- Service water spray pond cleaning evolutions in 1989 and 1991 disposed sediment into a nearby trench. The sediment was later found to be contaminated. This sediment was excavated and relocated to a specific on-site location with permission of Washington State.