



*Harris Questionnaire*  
*5 pages*

SERIAL: HNP-06-094

JUL 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

SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
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 NRC. The completed questionnaire for Shearon Harris Nuclear Power Plant is enclosed.

This document contains no new Regulatory Commitment.

Please refer any question regarding this submittal to Mr. Dave Corlett at (919) 362-3137.

Sincerely,

Eric McCartney  
Plant General Manager  
Harris Nuclear Plant

EM/khv

Attachment: Groundwater Protection -- Data Collection Questionnaire

c: USNRC Document Control Desk  
Mr. R. A. Musser (NRC Senior Resident Inspector, HNP)  
Mr. C. P. Patel (NRC Project Manager, HNP)  
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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
GROUNDWATER PROTECTION –  
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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.
  - Groundwater monitoring, as described in the response to question 2, is a part of the Harris Nuclear Plant (HNP) Radiological Environmental Monitoring Program (REMP).
  - Operations personnel perform daily rounds of plant systems and structures. These rounds include requirements to document leaks and spills. Leaks and spills are identified in the site work request system and/or the site corrective action program. Responses to leaks and spills include notification of the Control Room and Environmental and Chemistry for assessment and cleanup, as necessary.
  - 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 identified in the site work request system and/or the site corrective action program. Responses to leaks and spills include notification of the Control Room and Environmental and Chemistry for assessment and cleanup, as necessary.
  - Facilities personnel periodically mow and remove vegetation along the cooling tower blowdown line, through which plant effluents are released, and are responsible to report any observed anomalies. A complete walkdown of the entire cooling tower line was performed on June 2, 2006 by Chemistry personnel. No wet spots were observed along the ground. One REMP groundwater monitoring well is located close to the blowdown piping. No tritium or other radionuclides have been detected in this groundwater well.
  - HNP has a functional system for detecting leakage from the Fuel Pool Liner. This leakage is measured and trended at least quarterly.
  - Soil sampling is performed and analyzed for radionuclides using gamma spectroscopy annually within the HNP protected area per the Annual Soil Sampling Program.

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

- As described in the Offsite Dose Calculation Manual (ODCM), HNP has four onsite groundwater monitoring wells within the REMP, located between 0.4 and 0.7 miles from the plant site in various sectors surrounding the plant site (i.e. SSW (2), NNE, ESE).
- As described in the ODCM, the wells are sampled quarterly and analyzed for tritium and gamma emitters to the REMP Lower Limits of Detection (LLD).
- Typical levels of detection for tritium and principle gamma emitters are as follows:

Nuclide	Typical Level of Detection (pCi/L)*
<b>Gamma Emitters</b>	
Mn-54	4.37
Co-58	4.18
Fe-59	8.87
Co-60	4.63
Zn-65	9.68
Zr-Nb-95	7.16 / 4.29
I-131	3.91
Cs-134	4.96
Cs-137	4.43
Ba-La-140	14.49 / 5.33
<b>Tritium</b>	<b>309</b>

\*These values refer to average a posteriori values calculated for HNP.

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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).
  - In July of 1995, as a part of Annual Soil Sampling Program, HNP identified contaminated soil which resulted from water runoff from the outdoor spent fuel car staging area. The total amount of activity was conservatively calculated to be 1.0E-5 Ci of Co-60, Cs-134, and Cs-137. Corrective actions were taken to prevent this condition from recurring. This area continues to be sampled as a part of the Soil Sampling Program, as discussed in response to Question 2. Contamination levels remain below any level which would administratively require additional monitoring or corrective action.
  
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 US EPA for drinking water.
  - There have been no events in which the radioactivity in groundwater has been measured above the EPA-established MCL.
  
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.
  - No remediation efforts for radioactivity in groundwater or soil have been necessary to date.