



Serial: RNP-RA/06-0062

JUL 24 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

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

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 H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, is provided as an attachment.

This submittal contains no new regulatory commitments.

If you have any questions on this subject, please contact Mr. C. T. Baucom at (843) 857-1253.

Sincerely,

A handwritten signature in black ink, appearing to read "Ernest J. Kapopoulos, Jr.".

Ernest J. Kapopoulos, Jr.

Plant General Manager

H. B. Robinson Steam Electric Plant, Unit No. 2

GRS/grs

Attachment: Groundwater Protection – Data Collection Questionnaire

c: Dr. W. D. Travers, NRC, Region II
NRC Resident Inspector, HBRSEP, Unit No. 2
Mr. C. P. Patel, NRC, NRR
Document Control Desk
Ralph Andersen, Nuclear Energy Institute

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

GROUNDWATER PROTECTION – DATA COLLECTION QUESTIONNAIRE

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.

- Plant procedures direct Operations personnel to perform daily inspections of plant systems and structures, including identification of leaks and spills. These procedures also direct that identified leaks and spills be addressed using the work management system or the Corrective Action Program, and that the Control Room be notified when leaks or leakage are identified.
- H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, has a functional Spent Fuel Pool (SFP) leak detection system that is used to monitor for SFP leakage.
- Plant procedure TMM-104, System Walkdown Procedure, directs engineers to perform periodic walkdowns of the systems for which they are responsible, including identification of leaks and spills. This procedure also directs that identified adverse conditions, including leaks and spills, be addressed using the work management system or the Corrective Action Program, and that the Control Room be notified when leaks or leakage are identified.
- The HBRSEP, Unit No. 2, Radiological Environmental Monitoring Program (REMP), requires groundwater, surface water, and shoreline sediment sampling and analysis.
- Plant procedure HPP-001, Radiologically Controlled Area Surveillance Program, directs Radiation Protection personnel to perform periodic soil contamination surveys in the radiation control areas, and other areas within the Owner Controlled Area.

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

- The HBRSEP, Unit No. 2, Off-Site Dose Calculation Manual (ODCM) requires the onsite deepwell and offsite artesian well (at the base of the Lake Robinson Dam) to be sampled and analyzed quarterly to the REMP lower limits of detection. Typical detection levels for tritium and principle gamma emitters are as follows:

Isotope	Typical Detection Levels (Average) pCi/l
H-3	310
Mn-54	3
Fe-59	7
Co-58	3
Co-60	4
Zn-65	7
Zr-95	5

Nb-95	4
I-131	4
Cs-134	4
Cs-137	4
Ba-140	13
La-140	4

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 accordance with 10 CFR 50.75(g), Carolina Power and Light Company, now doing business as Progress Energy Carolinas, Inc., has documented the following inadvertent releases of radioactive liquids that had the potential to reach groundwater. Each of these releases was evaluated at that time and found not to be of significant impact to the environment or the health of the public.

	Date	Description
1	4/10/1973	During Safety Injection System testing, 500 gallons of Refueling Water Storage Tank (RWST) water containing 23.5 mCi gross particulate and 19.5 mCi of tritium spilled to the site storm drain and then to the Black Creek. (Reference: Incident Report No. 55)
2	4/23/1973	The RWST overflowed 8925 gallons of water containing 379 mCi of gross particulate and 334 mCi of tritium to the site storm drain and then to the Black Creek. (Reference: Incident Report No. 56)
3	5/10/1974	A leak occurred from Steam Generator "A" of 360 gallons containing 19.7 mCi gross activity and 98 mCi tritium to the site storm drain and then to the Black Creek. (Reference: Abnormal Occurrence Report 74-10)
4	5/3/1975	A small spill (approximately 2 gallons) occurred when a tanker was overfilled with water from the Waste Disposal System with a total of 0.41 mCi gross activity. The spill went to the site storm drain and then to Black Creek. (Reference: Abnormal Occurrence Report 2-0-4-a-1)
5	10/26/1977	A Boron Injection Tank thermowell coupling failed resulting in the discharge of an estimated 148 gallons of water containing 1.0 mCi of activity to the site storm drain and then to the West Settling Pond. (Reference: Licensee Event Report 50-261/77-25).
6	2/2/1979	An RWST leak occurred through a demineralizer isolation valve to the site storm drain and then to the West Settling Pond. Gross activity concentration at the spill was in the 1E-4 uCi/ml range and settling pond activity was 2.31E-8 uCi/ml gross beta and 1.36E-5 uCi/ml tritium. (Reference: Memorandum to File 2-0-6-d)

7	10/27/1981	Approximately 3600 gallons of chemical decontamination waste containing 2.8 mCi of Cobalt-60 activity leaked from a temporary tank to the site storm drain and then to the West Settling Pond. (Reference: Robinson File No 2-0-6-k) In addition, approximately 1.3 mCi of Cobalt-60 was inadvertently flushed from the Unit 1 Lower Mud Drum to the site storm drain and then to the West Settling Pond. (Reference: File No. 2-0-4-a-4)
8	8/9/1988	The Environmental and Radiation Control Building laboratory radioactive waste drains leaked 0.002 mCi gross activity in 184 gallons of water to the site storm drain and then to the West Settling Pond. (Reference: Report Number 88-17)
9	2/21/2000	The abandoned "B" Waste Evaporator Cooling Tower leaked slightly radioactive water onto the ground beneath the tower as a result of freezing weather. Samples had 1.21E-5 uCi/ml total gamma activity. (Reference: ERC-014, Attachment 6.5, Performance Observation/Tour Guide)
10	12/4/2001	Resin fill valve (CVC-224) leakage resulted in contaminated water being released through the site storm drain to the West Settling Pond. West Settling Pond tritium activity was 4E-5 uCi/ml. (Reference: Nuclear Condition Report 52254)

Notes:

- (1) Prior to construction of the settling ponds in 1976, site storm drains discharged via a ditch to the Black Creek.
- (2) Volumes and activities are estimated values from the associated event report.

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 known instances at HBRSEP, Unit No. 2, where onsite or offsite groundwater indicated concentrations of radioactivity greater than the USEPA MCL 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.

- When HBRSEP, Unit No. 2, was originally licensed, the site storm drains discharged via a ditch to the Black Creek. Soil in this ditch eventually became contaminated. In 1976 these storm drains were rerouted to the West Settling Pond, an effluent pathway that is monitored in accordance with the ODCM. In 1983 NRC approval was requested and granted to stabilize in place the contaminated soil in the drainage ditch. The contamination activity was estimated to be 13 uCi total gamma activity, less than the estimated 19 uCi of naturally-occurring Potassium-40 in the same soil.
- In 1981 approximately 1,862 cubic feet of slightly contaminated soil ($9.6E-6$ uC/gram average) resulting from a chemical decontamination spill (see Question 3, Item 7) was removed from the affected area and disposed of in accordance with regulatory requirements.
- No remediation efforts for radioactivity in groundwater have been necessary to date.