CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT
362 INJUN HOLLOW ROAD • EAST HAMPTON, CT 06424-3099

JUL 27 2006
CY-06-099
Docket No. 50-213

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

Haddam Neck Plant
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 and the public. The completed questionnaire for the Haddam Neck plant is enclosed.

This submittal contains no new regulatory commitments.

Please contact Mr. G. P. van Noordennen at (860)-267-3938 if you have questions about the enclosed information.

Sincerely,

Wayne A. Norton
President & CEO

6/27/06
Date

Enclosure

cc: USNRC Document Control Desk
S. J. Collins, USNRC Region 1 Administrator
T. B. Smith, NRC Project Manager, Haddam Neck Plant
M. T. Miller, Chief, Decommissioning Branch, NRC Region 1
Ralph Andersen, Nuclear Energy Institute
E. L. Wilds Jr., CT DEP, Director, Radiation Division

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Haddam Neck Plant
Groundwater Protection— Responses to Data Collection Questionnaire

July 2006

Haddam Neck Plant
Groundwater Protection— Responses to 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.**
    - The Haddam Neck Plant (HNP) ceased operations on December 5, 1996. Decommissioning and demolition of all HNP systems, structures, and components that could have contributed to radioactivity in groundwater is nearly complete.
    - During decommissioning, personnel perform routine walk downs and report any leaks and spills. Leaks and spills are immediately cleaned up and remaining conditions are assessed against decommissioning closure criteria. Any substantial leaks or spills are captured in the spill log as required by 10 CFR 50.75(g) requirements.

2. **Briefly describe the program and/or methods for monitoring onsite groundwater for the presence of radioactivity released from plant operations.**
    - As stated above, the HNP has ceased operations and is being decommissioned. The groundwater monitoring program is described in Section 2.3.3.1.6 of the HNP License Termination Plan. CYAPCO's groundwater monitoring program has not identified any offsite groundwater contamination associated with plant operations. CYAPCO initially identified tritium, cobalt-60, cesium-137 and strontium-90 in onsite groundwater and/or soil samples. CYAPCO has removed a large amount of soil and some bedrock, and backfilled the excavated areas with clean soil.

    - CYAPCO has developed a set of groundwater models to support the decommissioning of the HNP. On December 15, 2005, the groundwater modeling report was submitted to the Connecticut State Department of Environmental Protection and NRC. On January 10, 2006, CYAPCO submitted to the NRC the Groundwater Monitoring Plan for the HNP site. This Groundwater Monitoring Plan defines the requirements for verifying that groundwater contamination conditions at the HNP site meet the closure requirements/criteria as defined in the HNP License Termination Plan. The plan specifies an 18-month period of groundwater monitoring (to include two spring/high water seasons)

to verify the efficacy of remedial actions at the HNP site. The HNP site has a network of forty-five (45) groundwater monitoring wells. These wells are sampled quarterly and analyzed for radionuclides. With the December 2005 groundwater sampling event, the 18-month groundwater monitoring period has commenced.

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).**
   - Inadvertent (unplanned) releases of radioactive liquids occurred during the operation of the HNP. The following unplanned liquid release events are documented in the HNP License Termination Plan, Section 2.2.4:

Date	Location	Description
11/1/73	RWST	Valve leak, 270 liters of liquid released to storm drain
1/28/76	"A" Recycle Test Tank	15 gallons of liquid leaked from tank to diked area
5/22/76	PAB Below Drumming Room Floor	Leakage from drain line below floor
2/24/77	"A" Recycle Test Tank	1000 gallons of radioactive water released to diked area around tank
2/23/79	Main Stack	Manway leakage following SG blowdown rupture disk actuation. 20 gallons to yard area.
3/6/79	Main Stack	Manway leakage following SG blowdown rupture disk actuation
3/28/83	Septic Tank	84 gallons of water from Chemistry Lab to Septic Tank
8/21/84	Containment Building	Reactor cavity seal ring failure. 200,000 gallons of water drained to lower levels of Containment Building
2/24/89	Leach Field 115kV yard	50 gallons released from SFB floor drain, line discharges to 115kV yard
9/14/90	RWST	6 gallon per day leak from RWST identified from inventory monitoring
8/12/91	Pipe Trench	400 gallon release from open valve to pipe trench

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.**
    - Forty five (45) on-site monitoring wells are sampled quarterly to support the HNP License Termination Plan.
    - The sample results for the first quarter of 2006 revealed that the concentration of radioactivity in all wells (except one well) was below the MCL established (20,000 pCi/L) by USEPA. The one well had a tritium concentration of 20,800 pCi/L that is decreasing over time.

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.**
    - The HNP is in the final stages of decommissioning. As part of decommissioning activities, a significant amount of radiologically contaminated soil and some bedrock has been removed and disposed of offsite at licensed disposal facilities.