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Indian Point Energy Center
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James Comiotes
Director, Nuclear Safety Assurance
Tel 914 271 7130

July 31, 2006

Re: Indian Point Units 1, 2 and 3
Docket Nos. 50-003, 50-247 and 50-286
NL-06-079

Document Control Desk
U.S. Nuclear Regulatory Commission
Mail Stop O-P1-17
Washington, DC 20555-0001

Subject: **Ground Water Protection Baseline Information**
Indian Point Energy Center – Units 1, 2 and 3

Dear Sir or Madam:

The nuclear industry, in conjunction with the Nuclear Energy Institute (NEI), developed a questionnaire to facilitate compilation of baseline information regarding the current status of site programs for monitoring and protecting ground water. All participating nuclear sites agreed to provide the requested information to both NEI and the Nuclear Regulatory Commission.

Attachment 1 to this letter contains the questionnaire response for Indian Point Energy Center (IPEC). Please contact Mr. Patric W. Conroy at (914) 734-6668 if you have any questions or comments regarding this submittal.

There are no new commitments contained in this submittal.

Sincerely,

Patric W. Conroy for
James Comiotes
Director, Nuclear Safety Assurance
Indian Point Energy Center

Attachment 1 (Ground Water Protection Questionnaire Response)

cc: see next page

IE25

cc: Mr. John P. Boska
U.S. Nuclear Regulatory Commission

Mr. Samuel J. Collins
U.S. Nuclear Regulatory Commission

Resident Inspector's Office
Indian Point Unit 2 Nuclear Power Plant
U.S. Nuclear Regulatory Commission

Mr. Paul Eddy
New York State Dept. of Public Service

Mr. Ralph Anderson
Nuclear Energy Institute

ATTACHMENT 1 TO NL-06-079

GROUND WATER PROTECTION QUESTIONNAIRE RESPONSE

INDIAN POINT UNITS 1, 2 and 3

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 1, 2 AND 3
DOCKET NOS. 50-003, 50-247, AND 50-286

Ground Water Protection Questionnaire Response
Indian Point Energy Center (IPEC)

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 ground water.

   Response: IPEC has identified radioactive contamination in its on-site ground water. This contamination is currently being characterized to determine the sources of this contamination, as well as the nature and extent of the resulting ground water contamination plumes. As such, IPEC's ground water monitoring program is primarily focused on identifying the source of and characterizing after the fact release conditions. However, the program does include provisions for detecting leakage from potential future inadvertent releases to ground water. They include
   - Operator plant rounds include inspection for leaks and spills,
   - Radiation Protection surveys include inspection for leaks and spills,
   - Leaks/spills documented in corrective action program,
   - Inspection of systems, structures and components to identify potential leak points,
   - Radioactive Effluent Monitoring Program (REMP) Sampling,
   - Storm drain periodic sampling program, and
   - Corrective action program reporting/trending.

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

   Response: IPEC is in the process of investigating known Tritium and Sr-90 ground water contamination, resulting from leaks from the Unit 1 and 2 spent fuel pools (SFP). Other potential sources of leakage are also within the scope of this investigation. To accomplish this objective, a program for characterizing the nature and extent of the resulting ground water contamination and the site's hydro-geological characteristics is being conducted. As a part of this program, more than 30 monitoring wells have been installed throughout the site for the purpose of sampling ground water and obtaining hydro-geological data. These monitoring wells are sampled on a periodic basis, with the samples analyzed for Tritium, Sr-90 and gamma emitters. Upon conclusion of this investigation and any warranted remediation, these investigation monitoring wells will be transitioned into a long-term ground water monitoring program.

3. If applicable, briefly summarize any occurrences of inadvertent releases of radioactive liquids that have been documented in accordance with 10 CFR 50.75(g).

   Response: The most significant sources for potential releases to ground water include leakage from the Unit 1 and 2 SFPs, storm drains with contaminated sediment resulting from past spills, and an impoundment containing contaminated soil from a Unit 1 septic leach field that was excavated for construction of Unit 3. Other smaller inadvertent releases and spills have also occurred.

4. If applicable, briefly summarize the circumstances associated with any onsite or offsite ground water monitoring result indicating a concentration in ground water of radioactivity released from plant operations that exceeds the maximum contaminant level (MCL) established by the United States Environmental Protection Agency (USEPA) for drinking water.

   Response: See response to 3 above. IPEC has identified onsite ground water that contains Tritium and Sr-90 in excess of USEPA drinking water criteria. However, no drinking water sources have been impacted by this onsite contamination, and no sources of drinking water are located on or adjacent to the site.

5. Briefly describe any remediation efforts undertaken or planned to reduce or eliminate levels of radioactivity resulting from plant operations in soil or ground water onsite or offsite.

   Response: Some of the current or planned remediation efforts include:

   - Past flaws in the Unit 2 spent fuel pool liner have been repaired as they were discovered. Currently, inspections of the liner are being performed, after which any needed repairs will be affected. Leakage from a crack in the Unit 2 SFP foundation structure, identified during 2005, is being collected to prevent its entry into ground water.
   - The Sr-90 concentration in the leaking Unit 1 SFP water is being reduced by increased demineralization of the pool water.
   - Leakage from the Unit 1 SFP is being collected by a modified curtain drain collection system. Radioactivity in this collected ground water is reduced by a demineralization system. The treated water is then monitored and released through the normal permitted discharge pathway.
   - Removal of spent fuel from the Unit 1 SFP will occur over the next couple of years, after which, the pool will be drained to prevent any further leakage.
   - The lining of certain sumps is planned.
   - The site's storm drains are being cleaned to remove contaminated sediments. After cleaning has been completed, the drain system will be inspected for damage and repaired if required.
   - At the conclusion of the ongoing ground water investigation, a determination will be made if remediation of the ground water plumes is warranted.