



Entergy Nuclear Northeast
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249
Tel 914 734 6700

Fred Dacimo
Site Vice President
Administration

April 10, 2006

Re: Indian Point Unit Nos. 1, 2 and 3
Docket Nos. 50-003, 50-247 and 50-286
NL-06-033

Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Subject: **Current Status/Future Plans Regarding Onsite Groundwater Contamination at IPEC**

Reference: 1) Entergy letter NL-05-129 Revision 1, "Revised Monitoring Well MW-111 Tritium 30 Day Special Report", dated February 13, 2006

Dear Mr. Collins:

Entergy Nuclear Operations, Inc (Entergy) via this correspondence is providing the current status and future plans regarding onsite groundwater contamination at the Indian Point Energy Center (IPEC).

A dose assessment was performed to determine the overall impact to plant workers, offsite public health and safety, and the environment from the onsite groundwater contamination. This assessment is primarily based on information gathered from hydrological and geological analyses from Phase 1 well installation and precipitation data for the site region. The assessment provides an estimate of the amount of radioactivity being transported to the Hudson River via previously undocumented groundwater and storm water pathways, and therefore the resulting dose. The methodology for this dose assessment is based on an overall mass balance driven by precipitation. The evaluations performed are conservative, resulting in an estimated radioactive groundwater plume moving toward the river. The resulting assessment shows the annual dose from the groundwater and storm water pathways are a very small fraction (less than 0.1 percent) of NRC regulatory limits of 3 mrem whole body and 10 mrem organ. Entergy will account for these releases in the annual Radioactive Effluent Release Report.

In addition to this evaluation, offsite radiological environmental samples and special water samples collected to date continue to show no adverse impact to the environment from plant operations. These include samples from known drinking water sources such as the Croton and Camp Field reservoirs, the two nearby site outfalls at the Lafarge Plant and Algonquin water discharges, a nearby rock quarry, and the so called nearby abandoned "5th street" private well. Furthermore, historical offsite

radiological trend data continues to demonstrate no adverse radiological impact to the environment from operations at IPEC.

Upon completion of Phase 2 well installation and development, the following proposed changes are planned to be included under the IPEC REMP. Entergy believes these changes are prudent and represent additional means to ensure early detection of potential offsite migration of radioactive contamination to the groundwater offsite:

1. Quarterly sampling of MW-38, 40, 48 and 51 for tritium and gamma isotopic analysis. These four new wells effectively evaluate the potential southern migration of groundwater flow and its potential transport offsite. Trigger values have been established for these monitoring wells to investigate abnormal tritium concentrations. These sample changes will be documented in the annual REMP report and appropriate procedures revised as necessary.
2. Quarterly sampling of wells MW-38, 40, 48, 51 for Sr-90. Trigger values have been established for these monitoring wells to investigate abnormal strontium-90 concentrations. These sample changes will be documented in the annual REMP report and appropriate procedures revised as necessary.
3. Currently, Entergy is developing a long-term onsite well monitoring program (within the owner protected area/radiological restricted area), which will provide the sampling frequency, sample analysis type, and quality assurance bases for sampling Phase 1 and Phase 2 wells, in addition to those noted above. Development of the monitoring program is expected to be completed by year end 2006 and will be based on current industry experience. In the interim, Entergy will continue to sample new and existing wells as needed to trend groundwater migration and changes from current radiological conditions.
4. MW-107 will be established as the site background well sample location and will be analyzed annually for tritium, gamma isotopic analysis, and strontium-90.
5. Fish and invertebrates will continue to be sampled twice per year for gamma isotopic analysis both upstream and downstream of plant discharge in accordance with the Offsite Dose Calculation Manual (ODCM) and REMP requirements. In addition, the edible portions of these samples will be analyzed for Sr-90.
6. Shoreline sediment both upstream and downstream will be sampled for Sr-90 in addition to the required gamma isotopic analysis. These media will be sampled twice per year.

During the Phase 2 investigation period, increased sample frequencies for monitoring wells will be utilized as necessary for trend evaluations.

Attachment 1, "IPEC Monitoring Well Locations and REMP Sample Points" provides a site view of the approximate locations of the Phase 1 and Phase 2 wells. Well installation has been aggressive and effectively prioritized to assess offsite radiological impact, to accurately characterize, quantify and define the groundwater effluent pathway, and to provide intelligence on potential leak sources for investigation. Further, the new well monitoring program will provide the site with backup leak detection capability for the Unit 2 Spent Fuel Pool (SFP).

The known contaminated groundwater plume identified in the Unit 2 transformer yard may require hydrological remediation in the future. Upon completion of the hydrological evaluation final report, Entergy will meet with your staff to discuss the results and our intended actions. As we have discussed with your staff, site remediation is complicated and technically challenging. If not fully assessed, the situation could be exacerbated, and if implemented too early, could "mask" Entergy's efforts to find and repair a leak. Entergy's primary objective is to find the leaking system, structure or

component and effect repair. Entergy's plan is to visually inspect between the fuel racks and the vertical portion of the Unit 2 spent fuel pool liner surface, and determine the feasibility of visually inspecting between the fuel racks and the horizontal portion of the liner (the spent fuel pool floor). As long as groundwater contamination continues to pose no undue risk to the plant workers, the public or the environment, Entergy will continue to follow the plan we have developed which includes the recommendations of expert hydrologists. We will continue to evaluate new information as it becomes available, and upon completion of the Phase 2 investigation and the hydrological evaluation, a remediation decision will be made. In the interim, trigger values for tritium and strontium-90 have been established for the four new perimeter wells. An accelerated remediation strategy will be promptly evaluated and implemented as necessary if trigger values are exceeded. If a trigger value is found and confirmed to be exceeded, the NRC and our public stakeholders will be notified promptly.

Entergy continues to have confidence that the current groundwater monitoring program and sampling results from the REMP demonstrate no undue risk to plant workers or public health and safety or adverse impact to the environment. Offsite radiological impact to the public from the low levels of radioactivity released to the river from this pathway is a very small fraction of the annual regulatory limit. Fish and invertebrates are routinely sampled in the Hudson River. Samples are collected during the spring and summer seasons, and the edible portions are analyzed for gamma emitters. Current and historical REMP data continue to show no adverse impact to the surrounding environment from plant operations, and no tritium or Sr-90 has been detected above the environmental levels in any drinking water source.

Attachment 2 lists the commitments made in this letter. As new information becomes available, the need to modify any of these commitments will be evaluated by Entergy and then revised as appropriate. Should you have any questions please contact Patric W. Conroy, Manager, Licensing at (914)734-6668.

Sincerely,



Fred Dacimo
Site Vice President
Indian Point Energy Center

Attachment 1 (IPEC Monitoring Well Locations and REMP Sample Points)

Attachment 2 (List of Commitments)

cc: next page

cc: Mr. John P. Boska, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
U.S. Nuclear Regulatory Commission

Document Control Desk
U.S. Nuclear Regulatory Commission

Resident Inspector's Office
Indian Point Energy Center
U.S. Nuclear Regulatory Commission

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

Mr. Tim Rice
New York State Dept. of Environmental Conservation

ATTACHMENT 1 TO NL-06-033

**IPEC Monitoring Well Locations
and REMP Sample Points**

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

**IPEC MONITORING WELL LOCATIONS AND REMP
SAMPLE POINTS AS OF 04/10/06**

**MW 38
(REMP)**

**MW 48
(REMP)**

**MW 40
(REMP)**

**MW 51
(REMP)**

MW 46

MW 45

MW 44

**MW 49
(DISCHARGE CANAL WEST SIDE)**

**MW 50
(DISCHARGE CANAL EAST SIDE)**

MW 111

MW 43

MW 39

MW 33

MW 35

MW 34

MW 47

MW 41

MW 42

**MW 37
(DISCHARGE CANAL WEST SIDE)**

**MW 36
(DISCHARGE CANAL EAST SIDE)**

**MW 52
(NORTH END OUTSIDE TURBINE BLDG)**

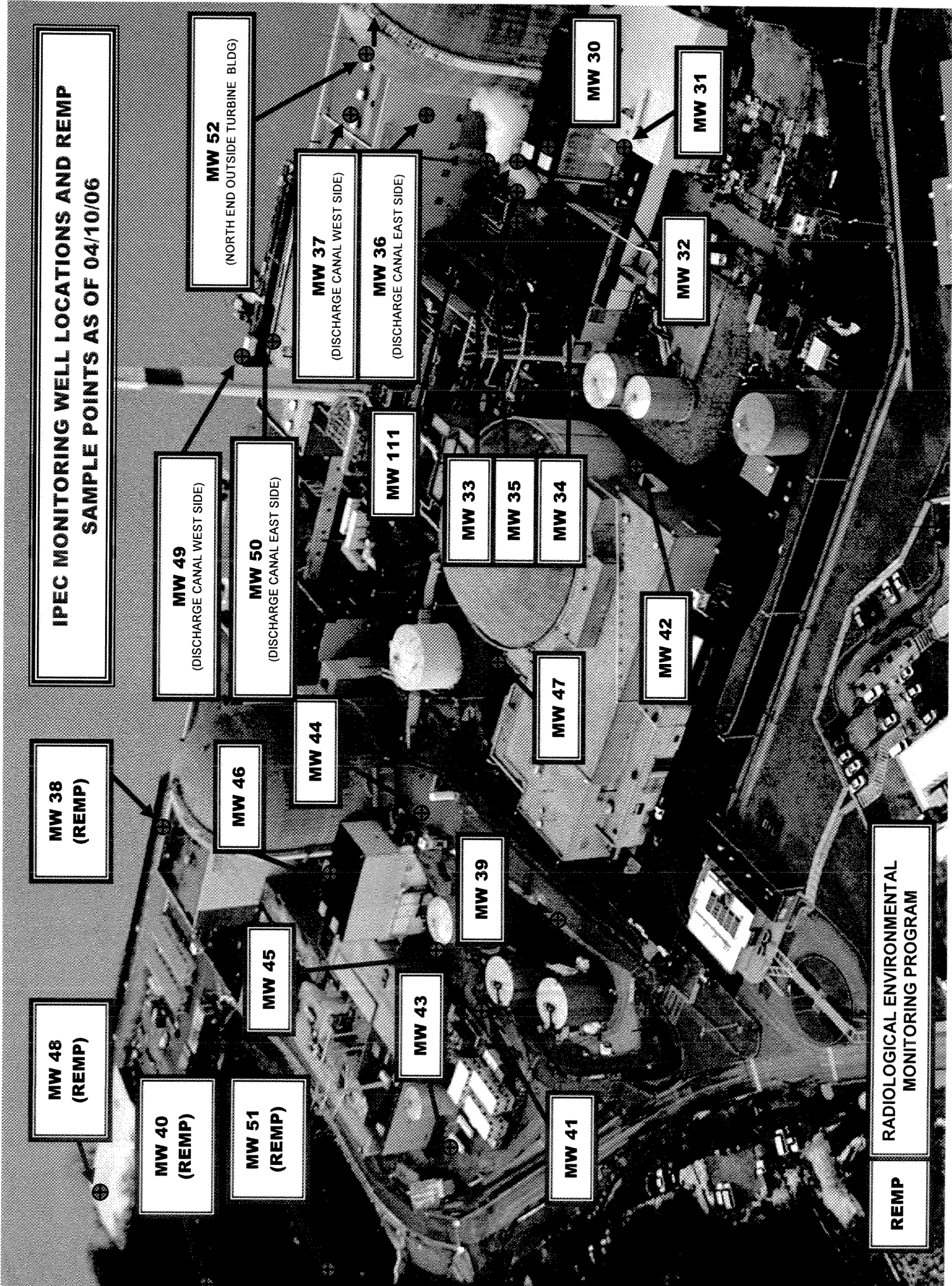
MW 30

MW 32

MW 31

**RADIOLOGICAL ENVIRONMENTAL
MONITORING PROGRAM**

REMP



ATTACHMENT 2 TO NL-06-033

List of Commitments

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

List of Commitments

Number	Commitment	Due Date
NL-06-033-1	Entergy will account for annual dose from the groundwater and storm water pathway releases in the annual Radioactive Effluent Release Report.	5/1/06
NL-06-033-2	Quarterly sampling of MW-38, 40, 48 and 51 for tritium and gamma isotopic analysis. Trigger values have been established for these monitoring wells to investigate abnormal tritium concentrations. These sample changes will be documented in the annual REMP report and appropriate procedures revised as necessary.	Ongoing
NL-06-033-3	Quarterly sampling of wells MW-38, 40, 48, 51 for Sr-90. Trigger values have been established for these monitoring wells to investigate abnormal strontium-90 concentrations. These sample changes will be documented in the annual REMP report and appropriate procedures revised as necessary.	Ongoing
NL-06-033-4	Entergy will develop a long-term onsite well monitoring program (within the owner protected area/radiological restricted area), which will provide the sampling frequency, sample analysis type, quality assurance bases for sampling Phase 1 and Phase 2 wells, and action levels for each well location to support prompt investigation of abnormal conditions. Development of the monitoring program is expected to be completed by year end 2006 and will be based on current industry experience. In the interim, Entergy will continue to sample new and existing wells as needed to trend groundwater migration and changes from current radiological conditions. These sample changes will be documented in the REMP.	12/31/06
NL-06-033-5	MW-107 will be established as the site background well sample location and will be analyzed annually for tritium, gamma isotopic analysis, and strontium-90. These sample changes will be documented in the REMP.	12/31/06
NL-06-033-6	Entergy will continue to follow the plan we have developed which includes the recommendations of expert hydrologists. We will continue to evaluate new information as it becomes available, and upon completion of the Phase 2 investigation and the hydrological evaluation, a remediation decision will be made. In the interim, trigger values have been established based on tritium results from the four new perimeter wells. An accelerated remediation strategy will be promptly evaluated and implemented as necessary if trigger values are exceeded. If a trigger value is found and confirmed to be exceeded, the NRC and our public stakeholders will be notified promptly.	12/31/06
NL-06-033-7	Fish and invertebrates will continue to be sampled twice per year for gamma isotopic analysis both upstream and downstream of plant discharge in accordance with the ODCM and REMP requirements. In addition, the edible portions of these samples will be analyzed for Sr-90.	09/29/06
NL-06-033-8	Shoreline sediment both upstream and downstream will be sampled for Sr-90 in addition to the required gamma isotopic analysis. These media will be sampled twice per year.	09/29/06
NL-06-033-9	Entergy will to the extent practical visually inspect between the fuel racks and the vertical portion of the IP2 spent fuel pool liner surface, and determine the feasibility of visually inspecting between the fuel racks and the horizontal portion of the liner (the spent fuel pool floor).	08/31/06