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Anthony J. Vitale
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NL-17-022

February 16, 2017

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: **Reply to a Notice of Violation; EA-16-193**
Indian Point Nuclear Generating Unit No. 2
Docket No. 50-247
License No. DPR-26

Reference: NRC letter dated January 17, 2017 "Indian Point Nuclear Generating - Integrated Inspection Report 05000247/2016003 and 05000286/2016003 and Notice of Violation (EA-16-193)"

Dear Sir:

By letter dated January 17, 2017 (Reference), a violation for Indian Point Nuclear Generating Unit No. 2 (IP2) was issued for failure to conduct operations to minimize the introduction of residual radioactivity into the subsurface (groundwater) of the site. Entergy Nuclear Operations, Inc. (Entergy) is not contesting the violation. This was entered into the Entergy Corrective Action Program as CR-IP2-2016-00264, CR-IP2-2016-00266, CR-IP2-2016-00564, CR-IP2-2016-04559, CR-IP2-2016-05060, and CR-IP2-2016-05814. The reply to the violation is contained in the Attachment to this letter.

Entergy is making no commitments in this letter. Should you have any questions regarding this matter, please contact Mr. Robert Walpole, Manager, Regulatory Assurance, Indian Point Energy Center at (914) 254-6710.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony J. Vitale".

AJV/gd

IEDI
NRR

Attachment: Reply to a Notice of Violation; EA-16-193

cc: Daniel H. Dorman, Regional Administrator, NRC Region I
Mr. Douglas V. Pickett, Senior Project Manager, NRC NRR DORL
Ms. Bridget Frymire, New York State Department of Public Service
Mr. John B. Rhodes, President and CEO, NYSERDA
NRC Resident Inspectors

ATTACHMENT TO

NL-17-022

Reply to a Notice of Violation; EA-16-193

ENTERGY NUCLEAR OPERATIONS, INC.
Indian Point Nuclear Generating Unit No. 2
Docket No. 50-247
License No. DPR-26

REPLY TO A NOTICE OF VIOLATION; EA-16-193

Violation

During an NRC inspection conducted between July 1 and September 23, 2016, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 of the Code of Federal Regulations (10 CFR) 20.1406(c) requires, in part, that licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface.

Contrary to the above, on two occasions between January 2016 and July 2016, Entergy failed to conduct operations to minimize the introduction of residual radioactivity into the subsurface of the site. Specifically, Entergy has not maintained its floor drain system clear of obstructions and interferences, and has not verified the ability of the floor drains to handle the volume and flowrates for draining activities being conducted. As a result, repeated spills of contaminated water within the radiologically controlled area leaked into the groundwater (subsurface of the site). Specifically, in January 2016, a spill caused by floor drain obstructions resulted in the backup of contaminated water onto the floor and subsequent leakage to the subsurface of the site. Similarly, a subsequent June/July 2016 groundwater contamination event occurred due to an obstructed flow path through a floor drain in the Unit 2 spent fuel building, which spilled to the subfloor and contaminated the subsurface of the site.

This violation is associated with a Green Significance Determination Process finding.

Reason for the Violation

A Root Cause Evaluation was performed to determine the reason for the violation. This evaluation determined the following:

- The Direct Cause of the events was that activities associated with transfer of reverse osmosis reject water during silica clean-up of Refueling Water Storage Tank inventory in preparation for the 2016 Unit 2 refueling outage resulted in groundwater contamination due to a spill in the Primary Auxiliary Building (PAB) onto the 35' Service Water Pipe Chase and due to backflow from the Fuel Storage Building (FSB) Sump 28 through the drain line connected to the FSB Truck Bay sub-floor.
- The root cause of these events is less than adequate plant organizational rigor in the implementation of Objective 1.2, Site Risk Assessment, of Nuclear Energy Institute (NEI) Document 07-07, "NEI Industry Ground Water Protection Initiative."

Examples include identification and control of work practices, material condition of drain systems and implementation of actions to seal building seams that have a credible mechanism for licensed material to reach ground water.

Specifically, the site Radiological Groundwater Monitoring Program (RGWMP), which was developed using NEI 07-07, did not identify floor drains as a system with a credible means of contaminating groundwater, and did not adequately assess work practices to determine their potential for unintended groundwater releases. Also, the existing work management process at the time of the event did not reflect the appropriate level of risk and work priority for conditions that can result in unintended groundwater releases.

Corrective Steps Taken and Results Achieved

Material Improvements:

Material conditions have been improved by making repairs to the floor drain system and Fuel Storage Building Sump Pump 28. The floor drain piping in the overhead of the 35' elevation of the Unit 2 Primary Auxiliary Building has been re-welded and integrity of the system restored. Sump Pump 28 has been replaced which has restored the automatic level-dependent pumping function and the direct flow path to the PAB Sump Tank. The floor drain systems located in the radiologically controlled areas at both Units 2 and 3 have been cleaned and inspected. Preventive maintenance work orders have been created to cause the periodic cleaning and inspection of the floor drain systems. These actions will help ensure that these drains remain capable of handling the volume and flowrate for expected draining activities. Further, a remediation well, designated RW-1, has been installed in the area of highest groundwater tritium concentration. This well is designed to reduce the inventory of tritium in this area and increase the sensitivity of the nearby monitoring wells.

Future enhancements consist of the following:

- The temporary or permanent plugging of the north sole plate drain line and the installation of a backwater valve in the subfloor drain line, both located in the FSB truck bay, are being evaluated by Engineering. Both of these drain lines were associated with the contamination found on the truck bay subfloor. These actions will help prevent the possibility of liquid back-flowing into the subfloor from the floor drain system.
- A plan is under development to harden site structures to minimize potential releases of radiologically-contaminated fluids to groundwater from normal and temporary plant systems and operations. These modifications may include installation of a high level alarm in FSB Sump 28, sealing and coating of the FSB Truck Bay subfloor, and sealing or replacing designated building/structural joints that provide potential paths to groundwater.

Procedure and Process Improvements:

Improvements have been made to the site procedures associated with work activity risk analysis, EN-WM-104, "On Line Risk Assessment," and groundwater protection, IP-SMM-CY-110, "Radiological Ground Water Monitoring Program." The revision to EN-WM-104 improves the identification of activities that if performed incorrectly, can cause an unmonitored release or discharge of radioactive material to the environment. For example, the procedure specifically identifies as an environmental risk the use of temporary hoses or equipment containing radioactive liquids, and the use of floor drains for draining contaminated liquids. In response to this risk, mitigating actions are identified and applied to the work, such as assigning additional technical oversight or providing spill containment. Changes to IP-SMM-CY-110 include the establishment of a site Groundwater Protection Steering Committee and identification of site-specific maintenance, operational and support activities which have the potential to result in groundwater contamination, as well as actions that can be taken to mitigate these adverse consequences. The intent of these changes is to introduce more rigor into the risk assessment process and to increase senior management oversight of the groundwater protection program.

Site procedures 2-OSP-4.3.1, "Support Procedure-Spent Fuel Pit Cooling," and 3-SOP-SFP-003, "Operation of the Backup Spent Fuel Pool Cooling System," have been revised to include additional guidance requiring operators to confirm with Engineering that drain pathways are verified adequate for component draining prior to use, and to monitor the drain down to prevent leaks or spills. The intent of these changes is to introduce greater caution and oversight when utilizing floor drains for the draining of the supplemental heat exchanger at both units.

Intrusive Oversight and Assessment:

A Groundwater Protection Steering Committee has been formed. The committee consists of senior representatives of those site departments having the greatest influence on groundwater protection, such as the General Manager of Plant Operations, Chemistry Manager and Radiation Protection Manager. The committee meets at a frequency specified in site procedure IP-SMM-CY-110 to evaluate the groundwater protection program, program roles and responsibilities and the effectiveness of its implementation.

Entergy has completed an internal self-assessment of the site groundwater protection program to help the site in identifying compliance gaps. Subject matter experts from the Electric Power Research Institute also conducted an assessment of the site implementation of the objectives listed in NEI 07-07. All enhancements, negative observations and standards deficiencies and their corresponding corrective actions have been or will be documented in the site corrective action program, where they will be tracked to closure.

Increased Awareness:

Station awareness of this event and the associated lessons learned has improved and continues to improve. Station management and staff were thoroughly briefed on the event, the cause evaluation, and consequences during a periodic Leadership & Alignment meeting, and again via a site-wide "tailgate" communication. A poster campaign to further engage site personnel is planned to coincide with the upcoming Unit 3 refueling outage that begins in March 2017. The purpose of this campaign is to raise employee awareness regarding contaminated liquids, and to align them to the goal of zero leaks or spills that could impact the environment.

Description of the More Comprehensive Corrective Action Plan for Maintaining an Effective Floor Drain System:

The open floor drain piping cuts at Unit 2 that resulted in the January 2016 event were re-welded to restore the integrity of the floor drain system. Additionally, the floor drains in the radiologically controlled areas at Units 2 and 3 were inspected and hydrolased and flushed by a third party that specializes in such work, with the goal being to remove debris and clogs to restore the floor drain flow capacity. This work, begun in February 2016, was successfully completed on June 3, 2016.

Equipment Identification numbers have been established for the floor drains in the radiologically controlled areas at Units 2 and 3, and entered into the site Equipment Database. This ensures that work requests can be generated against specific floor drain issues, and tracked from issue identification through problem resolution.

New preventive maintenance items have been created to cause the floor drains located in radiologically controlled areas at Units 2 and 3 to be internally inspected, cleaned and flushed as necessary to maintain flow capacity. These actions were entered into the work control process on November 28, 2016. The action and frequency of conducting this preventive maintenance is based on best industry practice.

Date When Full Compliance Will Be Achieved:

Full compliance for the cited violation was achieved on November 28, 2016. The repairs, cleaning, and inspection of the floor drain systems at Units 2 and 3 were completed on June 3, 2016. Those activities restored the effectiveness of the floor drains in handling the flow of liquids. The preventive maintenance items created on November 28, 2016 will ensure that drains remain free of clogs and debris.