



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

April 21, 2021

Mr. Anthony Vitale
Site Vice President
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: ENERGENCY NUCLEAR OPERATIONS, INC., INDIAN POINT NUCLEAR
GENERATING STATION UNITS 1 AND 2 – NRC INSPECTION REPORT NO.
05000003/2021001 AND 05000247/2021001

Dear Mr. Vitale:

On March 31, 2021 the U.S. Nuclear Regulatory Commission (NRC) completed an inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shutdown Indian Point Nuclear Generating Station Units 1 and 2. A combination of on-site and remote inspection activities (in-office reviews) were performed as a consequence of the COVID-19 public health emergency (PHE) during this inspection period. The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations, and the conditions of your licenses. The inspection consisted of observations by the inspectors, interviews with site personnel, and a review of procedures and records. The results of the inspection were discussed with Mr. Richard Burroni, Director Special Projects on March 31, 2021, and are described in the enclosed inspection report. No findings of safety significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if any, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Radioactive Waste; Decommissioning of Nuclear Facilities**; then **Regulations, Guidance and Communications**. The current Enforcement Policy is included on the NRC's Website at www.nrc.gov; select **About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents**; then **Enforcement Policy** (Under 'Related Information'). You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

A. Vitale

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No reply to this letter is required. Please contact Katherine Warner (610) 337-5389 if you have any questions regarding this matter.

Sincerely,

Anthony Dimitriadis

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor Health
Physics Branch
Division of Radiological Safety and Security

Docket Nos. 05000003 and 05000247
License Nos. DPR-5 and DPR-26

cc w/encl: Distribution via ListServ

Enclosure: Inspection Report Nos. 05000003/2021001 and 05000247/2021001
w/Attachment

NRC INSPECTION REPORT NO. 05000003/2021001 AND 05000247/2021001, ENTERGY NUCLEAR OPERATIONS, INC., INDIAN POINT NUCLEAR GENERATING STATION UNITS 1 AND 2, DATED APRIL 21, 2021

DOCUMENT NAME: G:\DNMS\DIRHP\Indian Point\1Q 2021 Indian Point Decommissioning report.docx
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NAME	KWarner/kw		ADimitriadis/ad				
DATE	04/12/2021		04/21/2021				

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Docket Nos. 05000003 and 05000247

License Nos. DPR-5 and DPR-26

Report Nos. 05000003/2021001 and 05000247/2021001

Licensee: Entergy Nuclear Operations Inc. (Entergy)

Facility: Indian Point Energy Center Units 1 and 2

Location: Buchanan, NY

Inspection Dates: January 1 – March 31, 2021

Inspectors:

K. Warner
Senior Health Physicist
Decommissioning, ISFSI and Reactor Health Physics Branch
Division of Nuclear Materials Safety

N. Floyd, Acting Senior Resident Inspector
Reactor Project Branch 2
Division of Reactor Projects

G. George, Acting Senior Resident Inspector
Reactor Project Branch 2
Division of Reactor Projects

L. Parks, Risk Analyst (Training)
Risk and Technical Analysis Branch
Division of Decommissioning, Uranium Recovery, and Waste
Programs

Approved By: Anthony Dimitriadis, Chief
Decommissioning, ISFSI and Reactor Health Physics Branch
Division of Radiological Safety and Security

Enclosure

EXECUTIVE SUMMARY

Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Station Units 1 and 2
NRC Inspection Report Nos. 05000003/2021001 and 05000247/2021001

An announced decommissioning inspection was completed on March 31, 2021 at Indian Point Units 1 and 2. A combination of on-site and remote inspection activities were performed over this period. Certain inspection activities (in-office reviews) were conducted remotely as a consequence of the COVID-19 public health emergency (PHE) during this inspection period. The inspection included a review of organization and management at the site, design changes and modifications, maintenance and surveillance, self-assessments, audits, corrective actions, spent fuel safety, and decommissioning performance and status. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs. The U.S. Nuclear Regulatory Commission's (NRC's) program for overseeing the safe operation of a shut-down nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

Based on the results of this inspection, no findings of safety significance were identified.

REPORT DETAILS

1.0 Background

IP-1 was a pressurized water reactor that was granted a 40-year Operating License in 1962, and was permanently shut down in 1974. Pursuant to the June 19, 1980 “Commission Order Revoking Authority to Operate Facility” and the “Decommissioning Plan for Indian Point Unit No. 1,” approved by the NRC in an Order, dated January 31, 1996, the reactor remains in a defueled status.

IP-2 was a pressurized water reactor that was granted a 40-year Operating License in 1973. On February 8, 2017, Entergy Nuclear Operations, Inc. (Entergy) notified the NRC of its intent to permanently cease power operations at IP-2 by April 30, 2020 subject to operating extensions through, but not beyond 2024 (Agencywide Documents and Access Management System (ADAMS) Accession Number: ML17044A004). On May 12, 2020, Entergy certified cessation of power operations and the permanent removal of fuel from the IP-2 reactor vessel (ADAMS Accession Number: ML20133J902). On May 13, 2020, the NRC notified Indian Point that the NRC would no longer perform its oversight activities in accordance with the Operating Reactor Assessment Program and that oversight would be conducted under the provisions outlined in IMC 2561 “Decommissioning Power reactor Inspection Program” (ADAMS Accession Number: ML20134H943).

IP-1 and IP-2 are physically contiguous and share systems, such as the integrated liquid waste system and the air handling system; and facilities, such as the chemistry and health physics laboratories. IP-1 also contains radioactive waste processing facilities that provide waste processing services for both units. Radiological effluent limits are met on an overall site basis and specific operating limits and surveillance requirements for effluent monitoring instrumentation, including stack noble gas monitoring, are discussed in the Offsite Dose Calculation Manual (ODCM).

IP-1 is currently in the “SAFSTOR, Co-Located with Operational Unit, No Fuel in the Spent Fuel Pool Phase” and IP-2 is currently in the “Post Operation Transition Phase” of decommissioning as described in IMC 2561. Inspection activities conducted during this quarter under Inspection Procedure (IP) 71124.04, “Dose Assessment” and IP 60845 “Operation of Inter-Unit Fuel Transfer Canister and Cask System” as part of the Reactor Oversight Process will contribute to the completion of IP 83750, “Occupational Radiation Exposure” and IP 60801, “Spent Fuel Pool Maintenance, Surveillance, and Safety at Permanently Shutdown Reactors,” respectively for this calendar year.

2.0 Unit 1 Safe Storage (SAFSTOR) and Unit 2 Post-Operation Transition Performance and Status Review

2.1 Inspection Procedures 37801, 40801, 60801, 71801, 83750, 86750

a. Inspection Scope

In-office reviews of information supplied by Indian Point were performed during the inspection period. The inspectors performed on-site decommissioning inspections on January 4 – 7, 2021 and March 1 – 4, 2021 supplemented by in office reviews and periodic

phone calls. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs.

The inspectors performed inspection activities under Inspection Procedure (IP) 71124.04, "Dose Assessment" and IP 60845 "Operation of Inter-Unit Fuel Transfer Canister and Cask System" as part of the Reactor Oversight Process this quarter. As previously stated, this effort will contribute to the completion of IP 83750, "Occupational Radiation Exposure" and IP 60801, "Spent Fuel Pool Maintenance, Surveillance, and Safety at Permanently Shutdown Reactors," respectively for this calendar year. Inspection activities conducted during this quarter for Unit 3, the inspectors considered the shared systems and programs with the shutdown units and reviewed selected areas accordingly.

The inspectors performed a continuous inspection of applicable activities during the inspection period, including document reviews and interviews with plant personnel to determine whether licensee procedures and processes were in compliance with regulations and guidance associated with 10 CFR 50.59. The inspectors sampled and performed a high level review of several engineering calculations regarding spent fuel pool events and interviewed IPEC personnel focusing on the continued implementation and validity of the assumptions made in the calculations.

The inspectors performed a continuous inspection of applicable activities during the inspection period, including document reviews and interviews with IPEC personnel to determine if associated audits and self-assessments had been completed, and ensured issues were identified and corrected in accordance with IPEC's corrective action program (CAP). The inspectors reviewed a representative selection of CAP documents to determine if a sufficiently low threshold for problem identification existed, if follow-up evaluations were of sufficient quality, and if IPEC assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue.

The inspectors interviewed personnel responsible for maintenance rule implementation and reviewed the maintenance rule program and procedures, including performance criteria and monitoring of systems and components that support spent fuel safety. The inspectors reviewed changes to the IP-2 systems, structures, and components (SSCs) scoped into the maintenance rule program since the unit shut down.

The inspectors verified that management oversight was adequate for the Post-Operation Transition phase of decommissioning for Unit 2 and that the decommissioning organization and changes to the operating unit organization's responsibilities was appropriately implemented upon Unit 2's cessation of operations. The inspectors reviewed the plans for the site's "Phase 1" organization to be implemented after the planned Unit 3 shutdown scheduled for April 30, 2021. The inspectors attended decommissioning planning meetings, as available, and met periodically with IPEC management.

Inspectors evaluated the licensee's program of controlling storage of radioactive materials pursuant to 10 CFR 37.

On January 21, 2021, the inspectors toured infrequently accessed areas in the IPEC utility tunnel, which consists of components and systems common to all three units, including city water and fire water piping.

b. Observations and Findings

The inspectors determined that no changes required prior NRC approval. The inspectors reviewed a change that removed language in the Defueled Safety Analysis Report (DSAR) that required Fuel Storage Building Air Filtration System (FSBAFS) to be running during normal movement of fuel in Unit 2. License Amendments 211, 229, 238, and 241 removed the requirement for the FSBAFS to be operational as long as the fuel has had an 84-hour decay period. Therefore, Entergy removed the requirement for FSBAFS to be operating, but retained that it must be functional and must be capable of being manually placed into operation in the event of a fuel handling accident, if not already operating.

The inspectors determined that issues had been identified and entered into the CAP and evaluated commensurate with their safety significance. The inspectors verified that audits and self-assessments reviewed were performed by qualified individuals independent of the organization being audited and that management reviewed the audits and associated corrective actions.

The inspectors noted that there were no systems, structures, or components scoped into the maintenance rule program for IP-1. The inspectors note that 10 CFR 50.65(a)(1) states, in part, “for a nuclear power plant for which the licensee has submitted the certifications specified in 50.82(a)(1) or 52.110(a)(1) of this chapter, as applicable, this section shall only apply to the extent the licensee shall monitor the performance or condition of all structures, systems, or components associated with the storage, control, and maintenance of spent fuel in a safe condition...” As there is no fuel left in the Unit 1 spent fuel pools, the maintenance rule does not apply to any of its SSCs. The inspectors reviewed Entergy’s supplemental maintenance rule basis document for Unit 2 systems following permanent shutdown and defueling operations. The inspectors noted that IPEC significantly reduced the SSCs scoped into the maintenance rule program for IP-2 after the unit shut down. The inspectors verified that IPEC had followed the scoping criteria outlined in 10 CFR 50.65(b) and the performance criteria were acceptable for any scoped in SSCs.

The inspectors discussed the planned “Phase 1” organization to be implemented after the planned Unit 3 shutdown in April, 2021. The inspectors noted that the Phase 1 organization contained all of the major groups necessary for Post-Operation Transition and that IPEC plans to implement a training plan to close any qualification gaps prior to the reorganization. The inspectors interviewed IPEC personnel in charge of the training program and sampled several program and functional areas to gain reasonable assurance that the site was adequately assessing training needs to ensure that the future organization did not have major functional design gaps.

The inspectors determined through observation of infrequently accessed areas that IPEC had maintained material condition of SSCs in those areas.

c. Conclusions

Based on the results of this inspection, no findings of safety significance were identified.

4.0 Exit Meeting Summary

On March 31, 2021, the inspectors presented the inspection results to Mr. Richard Burrone, Director, Special Projects, and other members of Entergy's organization. No proprietary information was retained by the inspectors or documented in this report.

SUPPLEMENTARY INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

R. Burroni, Director, Special Projects
B. Bryant, General Manager Plant Operations
R. Walpole, Director – Regulatory Assurance and Performance Improvement
S. Stevens, Radiation Protection Manager
M. Mirzai, Regulatory Assurance Manager
T. Chan, NSSS Supervisor
G. Dahl, Regulatory Assurance
J. Doroski, Senior Health Physics/Chemistry Specialist
A. Eng, Regulatory Assurance
L. Fitzsimmons, Radiation Protection Technician (BHI Contractor)
W. O'Brien, Radiation Protection Supervisor
C. Patterson, Dry Fuel Storage
J. Breban, Senior Security Supervisor
W. Scholtens, Radwaste Specialist
F. Spagnuolo, Manager- Outage
M. Trott, Reactor Engineer
K. Alfieri, Training Superintendent

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Procedures

2-AOP-FH-1, Fuel Damage or Loss of SFP Level, Revision 10
2-SOP-11.1, Ventilation System Operation, Revision 69
2-SOP-17.12, Spent Fuel Handling Machine and Spent Fuel Pit Operations, Revision 24
EN-DC-150, Condition Monitoring of Maintenance Rule Structures, Revision 14
EN-DC-204, Maintenance Rule Scope and Basis, Revision 4
EN-RW-102, Radioactive Shipping Procedure, Revision 19
EN-RW-104, Scaling Factors, Revision 13
EN-RW-105, Process Control Program, Revision 5
EN-RW-106, Integrated Transportation Security Plan, Revision 6
IP-EP-120, Emergency Classification, Revision 14

Audits and Reports

IP3LO-2020-0078, Pre-NRC Inspection Assessment for 2021 RP Inspection Areas, and Periodic RP Assessment Requirements, January 29, 2021
QA-4-2020-IP-1, Engineering (Design Control) Audit, March 9, 2020 through May 19, 2020
QA-14-15-2019-IP-1, Combined Radiation Protection and Radwaste, September 20, 2019 through October 29, 2019
QA-19-2020-IP-1, Training, January 30, 2020 through March 9, 2020

Condition Reports

CR-HQN-2021-00029
CR-IP2-2019-02563
CR-IP3-2019-01118
CR-IP3-2020-01838
CR-IP3-2021-00195

Miscellaneous

Indian Point Energy Center Supplemental Maintenance Rule Basis Document for Unit 2 Systems Following Permanent Shutdown and Defueled, Revision 0
Indian Point Unit 2 Defueled Safety Analysis Report
IP-CALC-18-00064, IPEC Zirconium Fire Calculation, Revision 1
IP-CALC-18-00066, Shine Dose to Exclusion Area Boundary and Control Room from Spent Fuel Pool during SAFSTOR, Revision 1
IP-CALC-19-00032, Evaluation of Spent Fuel Pool Boil Off Time, Revision 0
IP-CALC-20-00013, IP2 Spent Fuel Pool (SFP) Time to Boil with Reduced Water Inventory (Security Plan Input), Revision 0
IP-RPT-18-00078, IPEC Report for the Review of Accident Analysis and NRC Regulations in Support of Decommissioning, Revision 0
Maintenance Rule Expert Panel Meeting Minutes, dated March 3, 2020
Process Applicability Determination From, DSAR Section 3.10.3 revision, dated October 5, 2020
U2-DSAR-2020-002, October 21, 2020
Unit 2 and 3 System Operation Decommissioning Presentations

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
CAP	Corrective Action Program
DSAR	Defueled Safety Analysis Report
Entergy	Entergy Nuclear Operations, Inc.
FSBAFS	Fuel Storage Building Air Filtration System
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEC	Indian Point Energy Center
IP-1	Indian Point Unit 1
IP-2	Indian Point Unit 2
IP-3	Indian Point Unit 3
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PHE	Public Health Emergency
QA	Quality Assurance
SAFSTOR	Safe Storage
SSC	Structures, Systems, and Components