



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

February 1, 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: ENTERGY NUCLEAR OPERATIONS, INC., INDIAN POINT NUCLEAR
GENERATING STATION UNIT 2 – NRC INSPECTION REPORT NO.
05000247/2020014

Dear Mr. Vitale:

On December 31, 2020 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 Unit 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 license as they relate to safety and compliance with the Commission's rules and regulations, and the conditions of your license. 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 you and other members of your staff on January 7, 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

2

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

Sincerely,

/RA/

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor HP
Branch
Division of Nuclear Materials Safety

cc w/encl: Distribution via ListServ

Enclosure: Inspection Report Nos. 05000247/2020014

NRC INSPECTION REPORT NO. 05000247/2020014, ENTERGY NUCLEAR OPERATIONS, INC., INDIAN POINT NUCLEAR GENERATING STATION UNIT 2, DATED February 1, 2021.

ML21032A118

DOCUMENT NAME: <https://usnrc.sharepoint.com/teams/Region-I-Decommissioning-Branch/Inspection Reports/Inspection Reports - Final/4Q 2020 Indian Point Decomm Rpt Final.docx>

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NAME	KWarner/kw		ADimitriadis /ad				
DATE	01/13/2021		02/1/2021				

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Docket No. 05000247

License No. DPR-26

Inspection No: 05000247/2020014

Licensee: Entergy Nuclear Operations Inc. (Entergy)

Facility: Indian Point Energy Center Unit 2

Location: Buchanan, NY

Inspection Dates: October 1 – December 31, 2020

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

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 Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Station Unit 2
NRC Inspection Report No. 05000247/2020014

An announced routine decommissioning inspection at Indian Point Unit 2 was completed on December 31, 2020. 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

Indian Point Unit 2 (IP-2) is a pressurized water reactor that commenced operations in 1974. 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 Operating Reactor Assessment Program had ceased and that implementation of the Decommissioning Power Reactor Inspection Program at IP-2 would begin on May 13, 2020 (ADAMS Accession Number: ML20134H943).

IP-2 is currently in the "Post Operation Transition Phase" of decommissioning as described in IMC 2561. The NRC's program for overseeing the safe operation of a shut-down nuclear power reactor is described in IMC 2561. Completion of certain core inspection procedures listed in IMC 2561, Appendix A, were completed via use of samples associated with IP 71111.01, "Adverse Weather Preparations" that the resident inspectors performed as part of the Reactor Oversight Process. Additionally, certain sections of inspection procedure IP 71124.01, "Radiological Hazard Assessment and Exposure Controls" were performed in place of IP 83750, "Occupational Radiation Exposure" and contributed to the completion of IP 62801, "Maintenance and Surveillance at Permanently Shutdown Reactors."

2.0 Unit 2 Post-Operation Transition Performance and Status Review

2.1 Organization, Management, and Cost Controls at Permanently Shutdown Reactors (IP 36801) and Decommissioning Performance and Status Reviews at Permanently Shutdown Plants (IP 71801)

a. Inspection Scope

The inspectors performed an on-site inspection on October 26 - 29, 2020 supplemented by periodic phone calls. The inspectors also met with IPEC management and discussed staffing levels and the current maintenance workload. The inspectors reviewed the backlog of maintenance work to assess the age and prioritization of the items. The inspectors evaluated the storage of combustibles and flammables to determine if such storage was in accordance with plant procedures and fire plan for the subject location. The inspectors evaluated the installed fire detection and suppression systems to determine if they were effectively maintained, if surveillances were performed and they were capable of performing their intended function.

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

b. Observations and Findings

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 discussed the planned "Phase 1" organization to be implemented after the planned shutdown of Unit 3 on April 30, 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 implementation of the reorganization.

The inspectors interviewed personnel from Entergy corporate responsible for financial assurance on the overall financial status of decommissioning. No issues were identified. The inspectors noted that NRC headquarters staff has the lead for assessing the appropriateness of a licensee's decommissioning fund allocation.

The inspectors determined through plant tours and interviews that Entergy had maintained appropriate fire detection and mitigation capabilities, and that the maintenance backlog had been reviewed by site management on a regular basis and the safety significance appropriately assessed.

c. Conclusions

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

2.2 Self-Assessment, Auditing, and Corrective Actions at Permanently Shutdown Reactors (IP 40801)

a. Inspection Scope

The inspectors performed a continuous inspection of applicable activities during the inspection period. The inspectors reviewed documents and interviewed IPEC personnel to determine if IPEC management performed audits and self-assessments, and if issues were identified and corrected in accordance with the site'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, follow-up evaluations were of sufficient quality, and IPEC assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue.

b. Observations and Findings

The inspectors determined that issues had been identified and entered into the CAP and evaluated commensurate with their safety significance.

c. Conclusions

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

2.3 Spent Fuel Pool Safety at Permanently Shutdown Reactors (IP 60801)

a. Inspection Scope

The inspectors performed an on-site inspection on October 26 - 29, 2020. The inspectors reviewed Entergy's programs for the safe wet storage of spent fuel. The inspectors performed a walkdown of the SFP and associated support systems to assess material condition, configuration control, and system operation. The inspectors toured the control room and interviewed certified fuel handlers (CFHs) to verify SFP system instrumentation, alarms and leakage detection monitoring is adequate to assure the safe storage of spent fuel.

b. Observations and Findings

The inspectors determined that Entergy had safely stored spent fuel in wet storage and that SFP chemistry and cleanliness controls had been adequately implemented.

c. Conclusions

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

2.4 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors (IP 37801) and Maintenance and Surveillance at Permanently Shutdown Reactors (IP 62801)

a. Inspection Scope

The inspectors performed a continuous inspection of applicable activities during the inspection period. The inspectors conducted document reviews and interviews with plant personnel to determine whether licensee procedures and processes conform with the regulations and guidance associated with 10 CFR 50.59. The inspectors conducted plant tours, interviews, and directly observed maintenance and surveillance activities throughout the inspection period to evaluate the effectiveness of activities associated with maintaining structures, systems, and components important to the safe storage of spent fuel and proper operation of radiation monitoring and effluent control equipment. During walkdowns, the inspectors evaluated material condition and housekeeping, assessed area radiological conditions, radiological access control and associated posting/labeling, and reviewed the overall condition of systems, structures and components that support decommissioning.

b. Observations and Findings

The inspectors reviewed the change in safety classification documented under engineering change EC 83553 for those structures, systems and components (SSC) that no longer have a quality related function as described in the Defueled Safety Analysis Report (DSAR). Most of the previously classified safety related or quality SSCs were changed in classification to be non-safety related. The applicable Design Basis Accidents for IP-2 in

the permanently defueled condition involve several hypothetical scenarios, including: a fuel handling accident (FHA) in the fuel handling building, an accidental release-recycle of waste liquid, and the accidental release of waste gas where the only SSC credited in the DSAR to prevent or mitigate the consequences of such an accident is the spent fuel pit. Therefore, the spent fuel pit will remain as a safety-related structure and the spent fuel pit level indicators (required as part of the post-Fukushima FLEX order) will remain classified as augmented quality. The inspectors also reviewed the process for system abandonment and system boundary isolation for those SSCs that are no longer required. Specifically, inspectors observed a sample of tag outs applied and draining of the chemical volume control system. The inspectors determined that procedural requirements were met and that the changes did not require prior NRC approval.

The inspectors noted that throughout the inspection period, housekeeping in the reactor building and containment building remained satisfactory and changing radiological conditions were addressed in a prompt and timely manner by site personnel.

The inspectors noted that, in general, Entergy appropriately prioritized corrective maintenance on the remaining systems required for permanent cessation of operations. The inspectors verified that when equipment issues occurred, Entergy staff implemented the appropriate troubleshooting procedures to identify and correct the relevant equipment deficiency identified. As part of an on-demand maintenance activity, the inspectors reviewed the opening, cleaning, and internal examination of the 22 closed cooling water heat exchanger. This system and associated heat exchanger provide the cooling necessary for the spent fuel pit heat exchanger. The inspectors determined that the licensee followed its procedures and conducted the maintenance in accordance with specified work order instructions.

c. Conclusions

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

4.0 Exit Meeting Summary

On January 7, 2021, the inspectors presented the inspection results to Mr. Anthony Vitale, Site Vice President 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
R. Walpole, Director – Regulatory Assurance and Performance Improvement
S. Stevens, Radiation Protection Manager
M. Mirzai, Regulatory Assurance Manager
N. Azevedo, Supervisor Code Programs
T. Chan, NSSS Supervisor
G. Dahl, Regulatory Assurance
G. Delfini, Reactor Engineering Supervisor
J. Doroski, Senior Health Physics/Chemistry Specialist
K. Elliott, Fire Protection Engineer
A. Eng, Regulatory Assurance
L. Fitzsimmons, Radiation Protection Technician (BHI Contractor)
R. Ford, Boric Acid Corrosion Control Engineer
L. Frink, Radiation Protection Supervisor
W. O'Brien, Radiation Protection Supervisor
S. Malinski, Civil/Structural Engineer
R. Passalugo, Radiation Protection Supervisor
C. Patterson, Dry Fuel Storage
E. Rosario, System Engineer
F. Spagnuolo, Manager- Outage
M. Trott, Reactor Engineer

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Procedures

2-ONOP-FP-001, Plant Fires Revisions 22 and 23
EN-DC-324-DP, Decommissioning Plant Preventive Maintenance Program, Revision 6
EN-CY-111 Attachment 7, Spill/Leak Groundwater Sample Results Reporting Flowchart, Revision 010
EN-CY-113, Response to Contaminated Spills/Leaks, Revision 9
EN-DC-161, Control of Combustibles, Revision 21
EN-LI-113-01, Updated Final Safety Analysis Report Change Process, Revision 5
EN-OP-102, Protective and Caution Tagging, Revision 024
EN-OP-125, Fire Brigade Drills, Revision 000
IP-SMM-AD-102, IPEC Implementing Procedure Preparation, Review, and Approval, Revision 17
IP-SMM-TQ-122, IPEC Fire Protection Program Training, Revision 8
SEP-FPP-IP-001, IPEC Fire Protection Program Plan, Revision 6

Audits and Reports

Decommissioning Funding Status Report per 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v) –
 Entergy Nuclear Operations, Inc., dated March 26, 2020
 IP2-RPT-03-00015, Indian Point 2 Fire Hazards Analysis, Revision 7
 QA-9-2020-IP-1, Fire Protection Program, January 6, 2020 – February 10, 2020

Condition Reports

CR-IP2-2020-00581	CR-IP2-2020-01493	CR-IP2-2020-01712
CR-IP2-2020-00615	CR-IP2-2020-01499	CR-IP2-2020-01745
CR-IP2-2020-00994	CR-IP2-2020-01549	CR-IP2-2020-01917
CR-IP2-2020-01064	CR-IP2-2020-01586	CR-IP2-2020-01998
CR-IP2-2020-01155	CR-IP2-2020-01639	CR-IP2-2020-01999
CR-IP2-2020-01215	CR-IP2-2020-01645	CR-IP2-2020-02000
CR-IP2-2020-01345	CR-IP2-2020-01664	
CR-IP2-2020-01346	CR-IP2-2020-01671	

Miscellaneous

IPEC 10 CFR 50.75(g) file
 EN-RP-113 Attachment 9.1, 10 CFR 50.75(g) Leak/Spill Record, dated February 26, 2020
 EN-RP-113 Attachment 9.1, 10 CFR 50.75(g) Leak/Spill Record, dated March 30, 2019
 IP1 IP2 OX Backlog, September 24, 2020
 IP-1 TS (Appendix A to Provisional Operating License No. DPR-5)
 Indian Point Energy Center Phase 1 Organization Chart, September, 2020
 Indian Point Energy Center Units 1, 2, and 3 Offsite Dose Calculation Manual, Revision 4
 Indian Point Nuclear Generating Unit No. 2 – Permanently Defueled Technical Specifications
 Indian Point Unit 1 Safety Analysis Report
 Indian Point Unit 2 Defueled Safety Analysis Report
 Tag List for Tagout CVCS-002-CVCS Drain, dated October 1, 2020

Work Orders

WO 502603
 WO 533886

Drawings

9321-F-2720-94
 A227781-82
 SD 4.3 SFPC Figure 1

LIST OF ACRONYMS USED

CAP	Corrective Action Program
DSAR	Defueled Safety Analysis Report
Entergy	Entergy Nuclear Operations, Inc.
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEC	Indian Point Energy Center
IP-2	Indian Point Unit 2

LIST OF ACRONYMS USED (Cont'd)

NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
QA	Quality Assurance
REMP	Radiological Environmental Monitoring Program
SAFSTOR	Safe Storage
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report