



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

November 9, 2021

Mr. Kelly Trice
President - HDI
Holtec Decommissioning International, LLC
Krishna P. Singh Technology Campus
1 Holtec Boulevard
Camden, NJ 08104

SUBJECT: HOLTEC DECOMMISSIONING INTERNATIONAL, LLC, INDIAN POINT NUCLEAR GENERATING STATION UNITS 1, 2 AND 3 - NRC INSPECTION REPORT NOS. 05000003/2021003, 05000247/2021003, AND 05000286/2021003

Dear Mr. Trice:

On September 30, 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, 2 and 3. A combination of onsite 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 Burrone, Site Vice President on October 4, 2021, and are described in the enclosed inspection report.

Within the scope of this inspection, no violations of more than minor significance were identified.

In accordance with 10 Code of Federal Regulations (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).

K. Trice

2

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

Sincerely,

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

Docket Nos. 05000003, 05000247 and 05000286
License Nos. DPR-5, DPR-26 and DPR-64

cc w/encl: Distribution via ListServ

Enclosure: Inspection Report Nos. 05000003/2021003,
05000247/2021003 and 05000286/2021003
w/Attachment

HOLTEC DECOMMISSIONING INTERNATIONAL, LLC, INDIAN POINT NUCLEAR GENERATING STATION UNITS 1, 2 AND 3 - NRC INSPECTION REPORT NOS. 05000003/2021003, 05000247/2021003, AND 05000286/2021003 DATED November 9, 2021.

DOCUMENT NAME: https://usnrc.sharepoint.com/:w:/r/teams/Region-I-Decommissioning-Branch/_layouts/15/Doc.aspx?sourcedoc=%7BE5548AD1-6D51-48E9-B7B5-75464B54ED0B%7D&file=3Q%202021%20Indian%20Point%20Decommissioning%20report%20November%209%202021.docx&action=default&mobileredirect=true

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OFFICE	DRSS/RI	N	DRSS/RI				
NAME	KWarner/kw		ADimitriadis/ad				
DATE	10/13/2021		11/09/2021				

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Docket Nos. 05000003, 05000247, and 05000286

License Nos. DPR-5, DPR-26, and DPR-64

Report Nos. 05000003/2021003, 05000247/2021003, and 05000286/2021003

Licensee: Holtec Decommissioning International, LLC (HDI)

Facility: Indian Point Energy Center, Units 1, 2 and 3

Location: Buchanan, NY

Inspection Dates: July 1 – September 30, 2021

Inspectors:

E. Allen, Resident Inspector
Projects Branch 2
Division of Operating Reactor Safety

R. Fedors, Senior Hydrogeologist
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery, and Waste Programs

J. Fuller, Senior Resident Inspector
Projects Branch 2
Division of Operating Reactor Safety

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

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

J. Rady, Senior Emergency Preparedness Inspector
Security, EP, and Incident Response Branch
Division of Radiological Safety and Security

Enclosure

S. Seeley, Health Physicist
Medical and Licensing Assistance Branch
Division of Radiological Safety and Security

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

Approved By:

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

Enclosure

EXECUTIVE SUMMARY

Holtec Decommissioning International, LLC (HDI)
Indian Point Nuclear Generating Station Units 1, 2, and 3
NRC Inspection Report Nos. 05000003/2021003, 05000247/2021003, and 05000286/2021003

An announced decommissioning inspection was completed on September 30, 2021, at Indian Point Units 1, 2, and 3. A combination of onsite and remote inspection activities were performed over this period as a consequence of the COVID-19 public health emergency (PHE). The inspection included a review of organization and management at the site, maintenance and surveillance, effluent and environmental monitoring, emergency preparedness, 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 decommissioning of a shutdown nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

Based on the results of this inspection, no violations of more than minor 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.

On February 8, 2017, Entergy Nuclear Operations, Inc. (Entergy) notified the NRC of its intent to permanently cease power operations at IP-2 and IP-3 by April 30, 2020, and April 30, 2021, respectively subject to operating extensions through, but not beyond 2024 and 2025 [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 11, 2021, Entergy certified cessation of power operations and permanent removal of fuel from the IP-3 reactor vessel (ADAMS Accession Number: ML21131A157). On May 13, 2021, 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: ML21132A069). On May 28, 2021, Entergy Nuclear Operations, Inc. informed the NRC of the successful purchase and sale transaction closing of the Indian Point facilities to Holtec Decommissioning International, LLC (ADAMS Accession No. ML21147A553). On May 28, 2021, the NRC issued license amendments transferring Indian Point Unit Nos. 1, 2, and 3 facility licenses from Entergy Nuclear Operations, Inc. to Holtec Indian Point 2, LLC; Holtec Indian Point 3, LLC; and Holtec Decommissioning International, LLC (ADAMS Accession No. ML21126A004).

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, No Fuel in the Spent Fuel Pool Phase" and IP-2 and IP-3 are currently in the "Post Operation Transition Phase" of decommissioning as described in IMC 2561.

2.0 Unit 1 Safe Storage (SAFSTOR) and Units 2 and 3 Post-Operation Transition Performance and Status Review

2.1 Inspection Procedures 40801, 60801, 71801, 82401, 84750

a. Inspection Scope

The inspectors performed onsite decommissioning inspections 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 attended several decommissioning planning meetings and met periodically with IPEC management.

The inspectors assessed the implementation and effectiveness of IPEC's corrective action program (CAP) by reviewing the daily documentation of issues, non-conformances, and conditions adverse to quality into the 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 reviewed IPEC's programs for the safe wet storage of spent fuel. The inspectors interviewed employees and reviewed recent calibration records and monthly Spent Fuel Pool (SFP) chemistry sample analyses for Units 2 and 3 performed in July and August 2021 to determine if chemistry parameters were within the limits of IPEC's license commitments. The inspectors performed walk-downs of the SFPs and associated support systems to assess material condition, configuration control, and system operation. The inspectors toured the control rooms, reviewed logs, and interviewed certified fuel handlers to determine if SFP system instrumentation, alarms, and leakage detection monitoring was adequate to assure the safe storage of spent fuel.

The inspectors performed several plant tours to assess field conditions and decommissioning activities by assessing material condition of structures, systems, and components, housekeeping, system configurations, and worker level of knowledge of procedure use and adherence. These tours included both control rooms for Units 2 and 3, electrical power supply, the Unit 2 Vapor Containment, and spent fuel pools.

The inspectors reviewed activities and documentation associated with radioactive effluent control and site radiological environmental monitoring program (REMP) to assess the effectiveness of site radiological programs. The inspectors reviewed radioactive gaseous and liquid effluent release permits, licensee audits, the fourth quarter 2020 long-term groundwater monitoring report, the annual radioactive effluent release report, and the annual radiological environmental operating report. The inspectors toured selected environmental monitoring stations to determine the adequacy of location of instrumentation.

On June 29, 2021, the inspectors reviewed and evaluated the proposed scenario for the Indian Point, Unit 3 onsite biennial emergency plan exercise. The inspectors evaluated the onsite biennial emergency plan exercise at Indian Point, Unit 3 on August 3, 2021. As a

result of the COVID-19 PHE, HDI, LLC (formerly Entergy Nuclear Operations, Inc.) requested and received an exemption to reschedule the onsite portion of their 2020 biennial emergency preparedness exercise as conducted in accordance with 10 CFR Part 50, Appendix E, Section IV.F.2.b (ML20282A612). The exemption was approved on December 8, 2020 (ML20320A000). The onsite biennial emergency plan exercise scenario simulated a SFP event which resulted in damage to the spent fuel racks, SFP liner and loss of spent fuel pool level in order to demonstrate the extensive damage mitigation guidelines described in 10 CFR 50.155(b)(2) as required by 10 CFR Part 50, Appendix E.IV.F.2.j. As documented in NRC Integrated Inspection Report (IR) 05000286/2020004, the inspectors also evaluated Entergy's participation in the offsite biennial emergency plan exercise which still proceeded as required by 10 CFR Part 50, Appendix E, Section IV.F.2.c, on November 17, 2020 (ML21028A633).

b. Observations and Findings

The inspectors noted that the IPEC had only recently been acquired by a new licensee (HDI, LLC), and that several management systems and processes were still in transition. The inspectors verified that management oversight remained adequate and appropriate for a site in the post-operation transition phase. The inspectors determined that problems, deficiencies, and safety concerns continued to be identified and reported to management as expected, and that actions were directed according to their safety significance.

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

The inspectors observed adequate material condition of the Unit 2 Vapor Containment, both spent fuel pools, and their supporting cooling systems. The inspectors determined that IPEC was safely storing spent fuel in wet storage. The inspectors verified that the neutron-absorbing materials present in the SFP had been adequately managed and maintained. The inspectors determined that surveillance requirements for water level, area radiation and temperature of the SFP were adequate as well as alarm/detection capability. Inspectors also verified that procedures provided guidance to restore SFP water level if required.

The inspectors verified that effluent releases to the environment had been properly controlled, monitored, and quantified as required by NRC regulations. The inspectors verified that the long-term groundwater monitoring report, the annual radioactive effluent release report, and the annual radiological environmental operating report demonstrated that calculated doses were below regulatory dose criteria listed in 10 CFR 50, Appendix I. The inspectors reviewed the site's Groundwater Protection Program and determined it was adequate. During a tour of selected environmental monitoring stations, the inspectors did not identify any significant concerns. The inspectors also followed up on an observation from the previous inspection (documented in Inspection Report 20200013) where inspectors had noted that one of the environmental monitoring stations had overgrown vegetation in the immediate vicinity of the monitoring station. The licensee had removed the vegetation surrounding the environmental monitoring station and air monitoring stations and TLD locations were cleared of nearby vegetation.

The inspectors reviewed records associated with 10 CFR 50.75(g) and assessed their adequacy. The inspectors verified that the licensee appropriately entered items into their 50.75(g) file that had previously been identified as missing in the prior inspection and noted that the licensee had improved access and traceability for their 50.75(g) records.

The inspectors reviewed the licensee's documentation associated with a change in liquid radwaste stream processing. The change diverts the Unit 3 liquid radwaste stream to fill a tanker truck in the Unit 3 Radioactive Machine Shop, which would then be driven to the Unit 1 Fuel Services Building and connected to the Unit 1 and 2 Integrated Liquid Waste Processing System for processing. While no significant technical concerns were identified at this time, the inspectors noted that this type of activity may fall into a medium/high risk category as described in the licensee's Groundwater Monitoring Program Procedure (IPSMCY- 110) and will continue to follow up on this in future inspections.

The inspectors determined that the conduct of the emergency plan exercise was adequate to demonstrate reasonable assurance of HDI's ability to effectively implement Indian Point's emergency plan to adequately protect the public health and safety in the event of a radiological emergency.

c. Conclusions

Based on the results of this inspection, no violations of more than minor significance were identified.

3.0 Exit Meeting Summary

On October 4, 2021, the inspectors presented the inspection results to Mr. Richard Burroni, Site Vice President, and other members of the IPEC organization. No proprietary information was retained by the inspectors or documented in this report.

SUPPLEMENTARY INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

R. Burroni, Site Vice President (HDI)
F. Spagnuolo, Decommissioning Manager (CDI)
A. Sterdis, Vice President, Regulatory and Environmental Affairs (HDI)
M. Johnson, Regulatory Assurance Manager (CDI)
W. Wittich, Senior Licensing Specialist (CDI)
G. Delfini, Engineering Supervisor (CDI)
W. O'Brien, Radiation Protection Supervisor (CDI)
R. Fuchek, Chemistry and Radiation Protection Manager (CDI)
T. Morzello, Project Manager (CDI)
A Goerres, Operations Specialist (CDI)
B. Mages, ALARA Specialist (CDI)
C. Zingale, Groundwater Monitoring Technician (GZA)
J. Simpson, Program Manager (GZA)
T. DeNully, Chemistry Supervisor (CDI)
R. Daley, CAA Specialist Sr. (CDI)
C. Bohren, Operations Manager (CDI)
M. Lewis, Non-Certified Operator (CDI)

ITEMS OPEN, CLOSED, AND DISCUSSED

None

Partial LIST OF DOCUMENTS REVIEWED

Engineering Changes

IP-EN-LI-100R30- PAD for IPC-2021-002

Procedures

2-AOP-SF-1, Loss of Spent Fuel Pit Cooling, Revision 8
2-PT-M98 Rev 19, Gaseous Effluent Radiation Monitor Source Check Test
2-PC-EM17 Rev 8, Channel Calibration of the Liquid Radwaste Effluent Line Flow Rate
Transmitter
2-PC-EM21, Spent Fuel Pit Temperature, Rev. 7
EN-CY-102-01 Rev 2, Quality Control for Analytical Laboratory Interlab and Intralab Cross-Check
Programs
EN-CY-102 Rev 16, Laboratory Analytical Quality Control
EN-CY-111 Rev 11, Radiological Groundwater Protection Program
IP-SMM-CY-110, Radiological Groundwater Monitoring Program, Revision 11
IP-SMM-OU-104, Shutdown Risk Assessment, Revision 19

Procedures (Cont'd)

- EN-CY-130-05 Rev 4, Radiological Environmental Monitoring Program (REMP) -Indian Point Energy Center
- EN-CY-131 Rev 2, Annual Radioactive Effluent Release Report
- EN-CY-132 Rev 0 Annual Radiological Environmental Operating Report
- Indian Point 2021 NRC-Graded Exercise Scenario Manual, dated May 18, 2021
- IPEC-EP-21-01, Indian Point Energy Center Emergency Plan, Revision 21-01
- IPEC-EP-21-02, Indian Point Energy Center Emergency Plan, Revision 21-02
- ML20282A612, One-time Scheduler Exemption Request from 10 CFR 50, Appendix E Biennial Emergency Preparedness Exercise Requirements due to COVID-19 Public Health Emergency, dated October 8, 2020
- ML20320A000, Indian Point Nuclear Generating Station, Unit Nos. 1, 2 and 3 – Temporary Exemption From Biennial Onsite Emergency Preparedness Exercise Frequency Requirements of 10 CFR Part 50, Appendix E, Section IV.F.2.B (EPID-L-2020-LLE-0160 [COVID-19]), dated December 8, 2020
- EN-CY-113, Response to Contaminated Spills/Leaks, Revision 9
- EN-FAP-OM-023, Change Management Procedure, Revision 9
- EN-RP-113, Response to Contaminated Spills/Leaks, Revision 9
- 3-AOP-13.8KV-1, Loss of 13.8KV Power, Revision 04
- 3-AOP-SF-1, Loss of Spent Fuel Pit Cooling, Revision 6

Condition Reports Reviewed

CR-IP2-2017-00587	CR-IP2-2021-00017	CR-IP3-2020-02197
CR-IP2-2020-00045	CR-IP2-2021-00038	CR-IP3-2020-02740
CR-IP2-2020-00101	CR-IP2-2021-00053	CR-IP3-2020-02924
CR-IP2-2020-00721	CR-IP2-2021-00058	CR-IP3-2021-00206
CR-IP2-2020-00849	CR-IP2-2021-00164	CR-IP3-2021-00343
CR-IP2-2020-01024	CR-IP3-2020-00470	CR-IP3-2021-00355
CR-IP2-2020-01183	CR-IP3-2020-00618	CR-IP3-2021-00356
CR-IP2-2020-01486	CR-IP3-2020-01303	CR-IP3-2021-00370
CR-IP2-2020-01621	CR-IP3-2020-01819	CR-IP3-2021-00080
CR-IP2-2020-01622	CR-IP3-2020-01959	
CR-IP2-2020-02009	CR-IP3-2020-01962	

Condition Reports Generated from Inspection

- IP3-00093
- IP3-00094
- IP3-00101
- IP3-00102
- IP3-00103
- IP3-00106
- IP3-00109
- IP3-00110
- IP3-00105

Work Orders

WO-IPC-52937468-01
WO-IPC-52940687-01
WO-IPC-52937467-01

Miscellaneous

IPEC ODCM Rev 5
IPEC ODCM Rev 6
PAD for ODCM Rev. 6, Process Applicability Determination Form for ODCM from Revision 5 to Revision 6
LBDCR Form ODCM Change Revision 6
Process Radiation Monitor R-47 Channel Operational Test (TST-2-PT-N74-1M TS FUNCT R-47 (ODCM))
Calibration 2-PC-2Y23, 'Liquid Radiation Monitor Calibration', on R-62
Unit 3 Airborne Radioactive Waste Release Permit No. 210033
Unit 3 Liquid Radioactive Waste Release Permit No 210076
2020 Annual Radioactive Effluent Release Report
10 CFR 50.75(g) File Index
2017 NEI 07-07 Assessment
2020 Annual Radiological Environmental Operating Report Indian Point Unit Nos. 1, 2, and 3, dated May 6, 2021
2020 Annual Environmental Protection Plan Report, Indian Point Unit Nos. 1, 2, and 3, dated April 22, 2021
IP SS 061020-061220 L87758, Report of Analysis/Certificate of Conformance, 06/25/2020
IP SS 092120-092220 L89129, Report of Analysis/Certificate of Conformance, 10/02/2020
IP WR 092820-123020 L90498, Report of Analysis/Certificate of Conformance, 01/20/2021
IP WR 102720-112420 L90012, Report of Analysis/Certificate of Conformance, 12/04/2020
Quarter Three 2020 IPEC Quarterly Long-Term Groundwater Monitoring Report, No. 48, dated March 21, 2021
Quarter Four 2020 IPEC Quarterly Long-Term Groundwater Monitoring Report, No. 49, dated June 28, 2021
Self-Assessment/Formal Benchmark Report, IPEC: Radioactive Environmental Monitoring Program – IP 71124.07, dated 4/10/2020
Unit 1 Technical Specifications, Amendment to Provisional License DPR-5 Amendment 63, Appendix A, Section 4.5
Unit 2 Improved Technical Specifications, Renewed Facility License DPR-26 Amendment 294, Appendix A, Sections 5.5 and 5.6
Unit 3 Improved Technical Specifications, Renewed Facility License DPR-64 Amendment 270, Appendix A, Sections 5.5 and 5.6
Hydrogeologic Site Investigation Report, 2008, GZA GeoEnvironmental, Inc.
NL-06-033 Current Status/Future Plans Regarding Onsite Groundwater Contamination at IPEC, April 10, 2006
NL-08-079 Remediation and Long Term Monitoring of Site Groundwater, May 15, 2008

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
CAP	Corrective Action Program
DSAR	Defueled Safety Analysis Report
CDI	Comprehensive Decommissioning International
Entergy	Entergy Nuclear Operations, Inc.
EP	Emergency Plan
FSBAFS	Fuel Storage Building Air Filtration System
Holtec/HDI	Holtec Decommissioning International, LLC (HDI)
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
SAFSTOR	Safe Storage
SFP	Spent Fuel Pool