



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD, SUITE 102  
KING OF PRUSSIA, PA 19406-1415

November 21, 2023

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 ENERGY CENTER UNITS 1, 2 AND 3 - NRC INSPECTION REPORT NOS. 05000003/2023003, 05000247/2023003, 05000286/2023003, AND 07200051/2023003

Dear Kelly Trice:

On September 30, 2023, 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. 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 and plant walk-downs. The results of the inspection were discussed with Richard Burrone, Site Vice President, and other members of your staff on October 17, 2023, and are described in the enclosed inspection report.

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

In accordance with Title 10 of the *Code of Federal Regulations* (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. Agencywide Documents and Access Management 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](http://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](http://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

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No reply to this letter is required. Please contact Steve Hammann of my staff at (610) 337-5399 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,  
05000286, and 07200051

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

cc w/encl: Distribution via ListServ

Enclosure: Inspection Report Nos. 05000003/2023003,  
05000247/2023003, 05000286/2023003, and  
07200051/2023003 w/Attachment

SUBJECT: HOLTEC DECOMMISSIONING INTERNATIONAL, LLC, INDIAN POINT ENERGY CENTER UNITS 1, 2 AND 3 - NRC INSPECTION REPORT NOS. 05000003/2023003, 05000247/2023003, 05000286/2023003, AND 07200051/2023003 DATED NOVEMBER 21, 2023

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**SUNSI Review Complete: SHammann**

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Docket Nos. 05000003, 05000247, 05000286, and 07200051

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

Report Nos. 05000003/2023003, 05000247/2023003, 05000286/2023003,  
and 07200051/2023003

Licensee: Holtec Decommissioning International, LLC (HDI)

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

Location: Buchanan, NY

Inspection Dates: July 1 – September 30, 2023

Inspectors:

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

K. Warner, CHP, Senior Health Physicist  
Decommissioning, ISFSI and Reactor Health Physics Branch  
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O. Masnyk Bailey, Health Physicist  
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M. Henrion, Senior Health Physicist  
Decommissioning, ISFSI and Reactor Health Physics Branch  
Division of Radiological Safety and Security

E. Andrews, Technical Assistant  
Division of Radiological Safety and Security

Enclosure

Accompanied By:

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

C. Hargest, Health Physicist  
Decommissioning, ISFSI and Reactor Health Physics Branch  
Division of Radiological Safety and Security

J. Willis, Senior Security Specialist  
Materials Security Branch  
Office of Nuclear Security and Incident Response

Approved By:

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

## EXECUTIVE SUMMARY

Holtec Decommissioning International, LLC (HDI)  
Indian Point Energy Center Units 1, 2, and 3 (IP-1, IP-2, and IP-3)  
NRC Inspection Report Nos. 05000003/2023003, 05000247/2023003, 05000286/2023003, and  
07200051/2023003

A routine announced decommissioning inspection was completed on September 30, 2023, at Indian Point Units 1, 2, and 3. A combination of on-site and remote inspection activities were performed over this period. The inspection included a review of design changes and modifications, problem identification and resolution, decommissioning performance and status, occupational radiation exposure, effluent and environmental monitoring, and radioactive waste management and transportation. 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."

Additionally, the inspection period included an inspection of Unit 3's dry cask loading campaign. The NRC's program for overseeing the operation of dry storage of spent fuel at an ISFSI is described in IMC 2690, "Inspection Program for Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations and for Title 10 of the *Code of Federal Regulations* (10 CFR) Part 71 Transportation Packagings."

Based on the results of this inspection, no violations of more than minor 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 shutdown 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 to Holtec Indian Point 2, LLC; Holtec Indian Point 3, LLC; and HDI (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. Liquid waste from IP-3 will be transported to and processed at IP-1.

IP-1 and IP-2 were inspected under the “Actively Decommissioning (DECON), No Fuel in the Spent Fuel Pool” category. IP-3 was inspected under the “Active Decommissioning (DECON), Fuel in the Spent Fuel Pool” category. The categories of decommissioning are described in IMC 2561.

### **2.0 Active Decommissioning Performance and Status Review**

#### **2.1 Inspection Procedures 37801, 40801, 71801, 83750, 84750, and 86750**

##### **a. Inspection Scope**

The inspectors performed on-site decommissioning inspection activities on July 10-13, August 7-10, and September 18-20, 2023, 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 conducted document reviews and interviews with site personnel to determine if IPEC procedures and processes were adequate and in accordance with the

regulations and guidance associated with 10 CFR 50.59, “Changes, tests, and experiments,” and to determine if changes made by IPEC under 10 CFR 50.59 required prior NRC approval.

The inspectors assessed the implementation and effectiveness of IPEC’s corrective action program (CAP) by reviewing a sampling of issues, non-conformances, and conditions adverse to quality into the CAP. The inspectors reviewed the effectiveness and implementation of the IPEC decommissioning quality assurance program. The inspectors reviewed associated procedures and a sampling of recent audits and self-assessments, the resolution of deficiencies, and the schedule for planned quality assurance activities over the next year. The inspectors evaluated whether the quality assurance organization was proactive in concluding assessments and whether the assessments were self-critical to identify and correct potential gaps in program performance. The inspectors reviewed the implementation of the safety conscious work environment at the site.

The inspectors reviewed the decommissioning schedule to determine if the schedule was consistent with the post shutdown decommissioning activities report. The inspectors performed several plant walk-downs to assess field conditions and decommissioning activities by assessing material condition of structures, systems, and components, housekeeping, system configurations, worker level of knowledge, and procedure use and adherence. The inspectors observed decommissioning activities associated with Unit 3 cold leg segmentation and Unit 2 spent fuel pool rack pressure washing. The inspectors observed selected pre-job briefings and associated work activities for radiological characterization surveys in Unit 1 and Class B/C waste cassette handling in Unit 3. The inspectors also attended an As Low As Reasonably Achievable (ALARA) management review meeting, safety committee meeting, and corrective actions management review committee meeting.

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 first quarter 2021 long-term groundwater monitoring report, an independent 5-year assessment for the groundwater monitoring program, 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 and observed sampling of groundwater, river water and collection of air monitor samples. The inspectors conducted walk-downs of selected effluent release pathways and monitoring points and reviewed 10 CFR 50.75(g) recordkeeping practices and selected records.



b. Observations

The inspectors determined that changes to the facility were properly evaluated in accordance with 10 CFR 50.59. The changes reviewed were consistent with regulatory requirements, license conditions, and the decommissioning safety analysis report and did not require prior NRC approval.

The inspectors determined that issues had been identified, entered into the CAP, and evaluated commensurate with their safety significance. The inspectors determined that the quality assurance organization was sufficiently independent and that the audits and self-assessments conducted included appropriate scrutiny of licensee performance. The inspectors verified that audits were performed by qualified individuals independent of the organization being audited and that management reviewed the audits, self-assessments, and associated corrective actions. The inspectors verified that the audits and self-assessments were performed in the appropriate timeframe and any weaknesses identified were captured within the CAP. The inspectors determined that the site had an appropriate focus on a safety conscious work environment and that employees are free to raise concerns.

The inspectors determined that radiological controls were appropriate for the survey work performed in Unit 1 and the B/C waste cassette activities observed.

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 verified that IPEC maintained records as required by 10 CFR 50.75(g) and had the ability to promptly access specific records requested by the inspectors. The inspectors reviewed the site's independent 5-yr assessment for the groundwater protection program per NEI 07-07 Objective 3.2 and note that the site had already implemented or will be implementing all the recommendations in the assessment. During a tour of selected environmental monitoring stations, the inspectors identified that one of the environmental monitoring stations had overgrown vegetation in the immediate vicinity of the monitoring station. The licensee entered the condition into its CAP and will work with the town to remove the vegetation surrounding the air monitoring station.

The inspectors noted that Holtec had implemented a program to address a trend of personnel accidents and near misses that had been developing. Holtec hired new personnel to lead this program to evaluate trends in safety and human performance, to identify underlying causes of incidents, and to take action to reinforce desired behaviors and prevent injuries by enhancing safety personnel and worker engagement. The inspectors attended the initial "kick off" meeting and subsequent safety briefings.

In the 2<sup>nd</sup> quarter IPEC inspection report (ADAMS Accession No. ML23215A139), an open item was initiated to track the NRC's continued review of sampled withdrawals from the decommissioning trust funds to determine if such withdrawals were used for legitimate decommissioning activities and allowable under NRC regulations (open item 050000003/2023002-01, 050000247/2023002-02, 050000286/2023002-03, Review of Decommissioning Trust Fund Withdrawals). This continues to be an open item and is still under NRC review.

c. Conclusions

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

**3.0 Independent Spent Fuel Storage Installation (ISFSI)**

3.1 Operation of an Independent Spent Fuel Storage Installation (Inspection Procedure 60855)

a. Inspection Scope:

The inspectors performed on-site dry cask storage inspection activities on July 17-21, 2023. The inspectors conducted direct observations and performed independent evaluations to determine if the licensee had operated the ISFSI in conformance with its commitments and requirements. The inspectors reviewed changes to the program and procedures since the last inspection, evaluated the effectiveness of the licensee's plans for controlling radiological activities, reviewed select records, and observed select licensee activities for loading fuel. The inspectors evaluated the effectiveness of the licensee's management oversight and quality assurance assessments of ISFSI activities.

The inspectors observed and evaluated Indian Point's ISFSI activities associated with dry cask operations. In addition to the ISFSI activities, the inspectors also reviewed the licensee's activities associated with long-term operation and monitoring of the ISFSI. The inspectors also evaluated the licensee's conformance with the Certificate of Compliance (CoC), Technical Specifications (TSs), and station procedures.

b. Observations and Findings:

The inspectors observed dry cask operations for the 7<sup>th</sup> canister (MPC s/n 907 HI-STORM s/n 1802) and 8<sup>th</sup> canister (MPC s/n 909 HI-STORM s/n 1803) loaded during the Unit 3 continuous offload campaign. The activities observed included: (1) loading of fuel assemblies from the SFP storage racks into the MPC/HI-TRAC; (2) installation of the MPC lid; (3) welding of the MPC lid to the MPC and subsequent non-destructive penetrant examination; (4) transportation of loaded MPC/HI-TRAC from the fuel services building (FSB) to the ISFSI pad; (5) placement of HI-TRAC on top of the HI-STORM; (6) downloading of the MPC into the HI-STORM at the cask transfer pit; (7) performance of radiation protection surveys related to fuel transfer. During performance of these activities, the inspectors verified that procedure use, communication, and coordination of ISFSI activities met established regulatory requirements and IPEC approved site procedures.

The inspectors also observed pre-job briefings and determined that the licensee's ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors were effective to ensure procedural adherence and a safe work environment.

The inspectors observed radiation protection staff as they provided job coverage for the cask loading work. The inspectors reviewed survey data maps and radiological records from the MPC loadings to date and confirmed that radiation survey levels measured were

within limits specified by the TS and consistent with values specified in the final safety analysis report.

c. Conclusions:

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

**4.0 Exit Meeting Summary**

On October 17, 2023, the inspectors presented the inspection results to 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  
F. Spagnuolo, Decommissioning Manager  
B. Noval, HDI Director Regulatory Affairs  
M. Johnson, Regulatory Assurance Manager  
W. Wittich, Senior Licensing Specialist  
B. Murray, Senior Project Manager  
D. Cooke, Safety Manager  
R. Matthews, Spent Fuel Floor Supervisor  
W. O'Brien, Radiation Protection Superintendent  
C. Garcia, Chemistry & Environmental Supervisor  
R. Whitley, Decommissioning Project Manager  
G. Delfini, Engineering Supervisor  
R. Fuchek, Chemistry and Radiation Protection Manager  
C. Bohren, Operations Manager  
C. Fabricante, ALARA Specialist  
M. Masterson, Senior Radiation Protection Technician  
D. Quinn, Radiological Supervisor  
J. Swart, Security Manager  
R. Passalugo, Waste Controls Specialist Representative

**ITEMS OPEN, CLOSED, AND DISCUSSED**

<u>Discussed</u>	<u>Section</u>	<u>Summary</u>
050000003/2023002-01	2.1.b	Continuation of open item from the 2 <sup>nd</sup> quarter
050000247/2023002-02		IPEC report for the review of Decommissioning
050000286/2023002-03		Trust Fund Withdrawals

**PARTIAL LIST OF DOCUMENTS REVIEWED**

Process Applicability Determinations and Engineering Changes  
EC-IPC-2023-096, Class B/C Waste On-site Transport & Storage  
CDECP-IPC-2023-094, Installation of a Security System

Procedures

CD-020, Decommissioning Quality Assurance Program (DQAP), Revision 2  
DSP-RA-001, Corrective Actions Program, Revision 1  
EN-CY-130-05, Radiological Environmental Monitoring Program (REMP) Procedure Groundwater Protection Program IPSMMCY- 110  
EN-CY-111  
EN-EC-100, Employee Concerns Program, Revision 13  
EN-IS-111, General Industrial Safety Requirements, Revision 19  
EN-PL-187, Safety Conscious Work Environment, Revision 3  
EN-PL-190, Maintaining a Strong Safety Culture, Revision 4  
HPP-2880-0045, HI-LIFT Operating Instructions, Revision 4  
HPP-2880-0201, MPC Loading at IPEC Unit 3, Revision 2  
HPP-2880-0301, MPC Sealing, Drying, and Backfilling at IPEC Unit 3, Revision 1  
HPP-2880-0401, MPC Stack-Up and Transfer Using J&R VCT at IPEC Unit 3, Revision 0

HPP-2880-0501, HI-STORM Operations and Transport Using J&R VCT at IPEC Unit 3, Revision 0  
HPP-2880-0504, MPC Closure Welding at IPEC, Revision 2  
HPP-2880-0700, Abnormal Event Procedure at IPEC, Revision 7  
HPP-3159-0003, Class B/C Non-Fuel Waste Loading and Handling at IPEC, Revision 1  
HQP-2.0, Quality Assurance Program, Revision 25  
HSP-101802, Audits, Revision 7  
2-SOP-12.3.3, Radiation Monitor Setpoint Control, Revision 8  
EN-RP-105 Attachment 2, ALARA Plan, (Phase 1) Cut and Pack Upper Internals

#### Issue Reports Reviewed

IP2-00471, 00500, 00520, 00521, 00652, 00669, 00814, 00892, 00894, 00898, 00906, 00914, 00915, 00918, 00925  
IP3-01250, 01272, 01276, 01277, 01281, 01282, 01283, 01285, 01286, 01291, 01300, 01313, 01318, 01324, 01337, 01347, 01350, 01352, 01354, 01357, 01362, 01365, 01371, 01375, 01377, 01401, 01471

#### Licensing Bases Documents

Indian Point 2 Technical Specifications, May 10, 2021  
Indian Point 3 Technical Specifications, May 17, 2021  
Indian Point 2 Technical Requirements Manual, September 2022  
Indian Point 3 Technical Requirements Manual, May 26, 2021  
Indian Point 2 Defueled Safety Analysis Report, Revision 1  
Indian Point 3 Defueled Safety Analysis Report, Revision 1  
Post Shutdown Decommissioning Activities Report (IPEC 1, 2, and 3 PSDAR), December 19, 2019

#### Work Orders

WO 534600-SEG-81-10U3, Rx Vessel Internals Segmentation

#### Miscellaneous

2022 Annual Radioactive Effluent Release Report  
2022 Annual Radiological Environmental Operating Report  
Apparent Cause Evaluation (ACE) IR-IP2-00892, Compliance with EN-DC-127  
Access Authorization and Fitness for Duty Self-Assessment  
Emergency Preparedness Self-Assessment  
Emergency Planning Self-Assessment  
Engineering Report No. IR-RPT-22-00001, Maintenance Rule Structural Monitoring Inspection Report (Fourth Cycle) for the ISFSI Pad  
Security Program Internal Audit

## **LIST OF ACRONYMS USED**

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
ALARA	As Low As Reasonably Achievable
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
DQAP	Decommissioning Quality Assurance Program
Entergy	Entergy Nuclear Operations, Inc.
FSB	Fuel Services Building
GPO	Government Printing Office
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
ISFSI	Independent Spent Fuel Storage Installation
MPC	Multi-purpose canister
NRC	Nuclear Regulatory Commission
PHE	Public Health Emergency
REMP	Radiological Environmental Monitoring Program
TS	Technical Specifications