



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

May 7, 2024

Kelly Trice  
President  
Holtec Decommissioning International, LLC  
Krishna P. Singh Campus  
1 Holtec Blvd.  
Camden, NJ 08104

SUBJECT: HOLTEC DECOMMISSIONING INTERNATIONAL, LLC, PILGRIM NUCLEAR  
POWER STATION - NRC INSPECTION REPORT NO. 05000293/2024001

Dear Kelly Trice:

On March 31, 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 Pilgrim Nuclear Power Station (PNPS). 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, a review of procedures and records, and plant walk-downs. The results of the inspection were discussed with John Moylan, Site Vice President, and other members of your staff on April 23, 2024, 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 (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, if any, 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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Please contact Katie Barnes of my staff at 610-337-5323 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 No. 05000293

License No. DPR-35

Enclosure: Inspection Report No. 05000293/2024001  
w/Attachment

cc w/encl: Distribution via ListServ

SUBJECT: HOLTEC DECOMMISSIONING INTERNATIONAL, LLC, PILGRIM NUCLEAR POWER STATION - NRC INSPECTION REPORT NO. 05000293/2024001 DATED MAY 07, 2024

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**SUNSI Review Complete: KBarnes ADAMS ACCESSION NO. ML24123A230**

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|--------|-----------|--|--------------|--|--|--|--|
| OFFICE | DRSS/RI   |  | DRSS/RI      |  |  |  |  |
| NAME   | KBarnes   |  | ADimitriadis |  |  |  |  |
| DATE   | 4/23/2024 |  | 5/7/2024     |  |  |  |  |

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection Report No. 05000293/2024001

Docket No. 05000293

License No. DPR-35

Licensee: Holtec Decommissioning International, LLC (HDI)

Facility: Pilgrim Nuclear Power Station (PNPS)

Location: Plymouth, Massachusetts

Inspection Period: January 1, 2024, to March 31, 2024

Inspectors: Katherine Barnes, Health Physicist  
Decommissioning, ISFSI, and Reactor Health Physics Branch  
Division of Radiological Safety and Security

Gunnar Eklund, Health Physicist (training)  
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)  
Pilgrim Nuclear Power Station (PNPS)  
NRC Inspection Report No. 05000293/2024001

A routine announced decommissioning inspection was completed on March 31, 2024, at the permanently shut-down Pilgrim Nuclear Power Station (PNPS). The inspection included an assessment of the program for occupational radiation exposure; decommissioning performance; problem identification and resolution; safety reviews, design changes, and modifications; and radioactive waste transportation. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs. The 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 safety significance were identified.

## REPORT DETAILS

### **1.0 Background**

On June 10, 2019, Entergy Nuclear Operations, Inc. (ENOI) certified cessation of power operations and the permanent removal of fuel from the PNPS reactor vessel (ADAMS Accession Number: ML19161A033). This met the requirements of 10 CFR 50.82(a)(1)(i) and 50.82(a)(1)(ii). On June 11, 2019, the NRC notified PNPS that the NRC would no longer perform its oversight activities in accordance with the Operating Reactor Assessment Program per IMC 0305 and that oversight would be conducted under the provisions outlined in IMC 2561 “Decommissioning Power Reactor Inspection Program” (ADAMS Accession No. ML19162A033). On August 27, 2019, an amendment was issued transferring the license from ENOI to Holtec International, LLC., (HDI) (ADAMS Accession No. ML19235A050). On December 14, 2021, HDI notified the NRC of the permanent removal of all spent fuel assemblies from the spent fuel pool, with their placement in dry storage within the Independent Spent Fuel Storage Installation (ISFSI) II cask storage pad (ADAMS Accession No. ML21348A748).

At the time of the inspection, PNPS was in the active decommissioning phase with no fuel in the spent fuel pool, as described in IMC 2561.

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

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

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

The inspectors performed on-site decommissioning inspection activities on January 29 – February 1 and March 4 – 7, 2024, 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 walkdowns.

The inspectors assessed the implementation and effectiveness of Pilgrim’s Corrective Action Program (CAP) by reviewing a sampling of issues entered into the CAP and observing select management and staff level meetings including a Management Review Committee (MRC) meeting. The inspectors reviewed an Apparent Cause Evaluation (ACE) associated with issue report (IR) PIL-06481 relating to violations of 10 CFR Part 37 identified by the NRC in 2023. The inspectors reviewed the effectiveness and implementation of the Pilgrim decommissioning quality assurance program. The inspectors reviewed associated procedures, a sampling of recent audits and self-assessments, and the schedule for planned quality assurance activities over the next year and discussed the Quality Assurance (QA) program with responsible members of the HDI organization. The inspectors interviewed HDI and contractor personnel, including the Employee Concerns Program (ECP) manager, to gain insight into the site safety culture and safety conscious work environment and evaluate whether workers were encouraged to report safety concerns.

The inspectors reviewed Pilgrim’s safety review process and documentation to determine if changes to the facility were adequately evaluated in accordance with 10 CFR 50.59. The inspectors discussed implementation of the safety review program with site personnel and reviewed training and qualification for individuals performing

Process Applicability Determination (PAD) screenings and 50.59 evaluations. The inspectors reviewed select engineering change packages and a 10 CFR 50.59 evaluation for a planned static airflow test to determine if the changes required prior NRC approval. The inspectors discussed plans for the test with site personnel and observed a pre-job brief.

The inspectors attended a schedule review meeting and discussed the work scheduling process and upcoming decommissioning schedule with licensee personnel. The inspectors conducted walkdowns of various areas of the site to observe the current status of decommissioning and assess housekeeping and material conditions.

The inspectors conducted walkdowns of the drywell 23' and 9' elevations to assess material conditions and verify radiological postings and high radiation area and locked high radiation area controls. The inspectors observed daily source checks on radiological survey instruments including ion chambers, telepoles, scalers, small article monitors, gamma spectroscopy systems, and personnel contamination monitors to determine whether the instruments used in the field were functioning properly and appropriate for the radiation measured. The inspectors observed the calibration of an ion chamber to determine whether the calibration was performed appropriately and in accordance with site procedures.

The inspectors observed radiological work activities, including vacuuming in the spent fuel pool, underwater manipulation of filters in the reactor vessel, underwater segmentation, and loading of a waste shipping cask, to determine whether Radiation Protection (RP) personnel appropriately implemented procedures and controls to minimize radiological exposure. The inspectors attended pre-job briefings and evaluated As Low As Reasonable Achievable (ALARA) plans and Radiation Work Permits (RWPs) to determine if Pilgrim's planning was commensurate with the risk of the work and identified appropriate dose reduction techniques.

The inspectors conducted walkdowns of area radiation monitors and continuous air monitors to determine whether they were appropriately positioned relative to the radiation sources and work areas they were intended to monitor. The inspectors reviewed air sampling results from decontamination work that was performed using respirators and discussed the respiratory protection program with site personnel. The inspectors evaluated the site's capability for in vitro and in vivo bioassays and reviewed whole body count logs and personnel contamination logs to determine whether Pilgrim was adequately assessing workers' internal exposure.

The inspectors observed the preparation of a radioactive waste shipment and reviewed documentation to determine if the shipment was properly packaged, secured, marked, and placarded for shipment and if the radiation and contamination levels were in accordance with NRC and Department of Transportation (DOT) requirements.

b. Observations and Findings

The inspectors determined that the reviewed engineering changes were appropriately screened under the process applicability determination (PAD) process and did not require further evaluation or NRC approval. The inspectors determined that the static airflow test was appropriately evaluated using the criteria in 10 CFR 50.59 and did not require prior NRC approval. The inspectors noted that the site conducted adequate

planning and preparation for the test, including plans for radiological monitoring and sampling at potential release points.

The inspectors determined that issues had generally been identified, entered into the CAP, and evaluated commensurate with their safety significance, and that site senior management was directly involved in reviewing and evaluating issues. The inspectors found that the reviewed ACE appropriately identified causes and corrective actions to address the condition. The inspectors found that audits were performed as described in the HDI QA plan, were sufficiently detailed, and were performed by individuals independent of the site.

The inspectors found that of the RP and craft workers interviewed, there was no indication of reluctance to raise safety concerns. The inspectors noted that the ECP representative had made their contact information readily available to workers and was present on site for a routine visit at the time of the inspection.

The inspectors noted that the site had been experiencing work planning challenges that frequently resulted in daily dose received differing from planned daily dose goals, most often due to emergent equipment issues. The site began writing IRs for deltas +/- 20% of the planned doses and tracking the cause of the deltas. During the first onsite inspection week of the quarter, the NRC inspectors emphasized the importance of ensuring the RP department receives timely information about the work planned for the day so that appropriate radiological controls could be planned, and job coverage could be arranged. During the second onsite inspection week, site personnel indicated that there had been some improvement in communication that should result in improved coordination activities involving the RP department. The inspectors noted that based on interviews with personnel, RP staff indicated that they felt free to stop work if they felt it was inadequately planned and that no safety issues had arisen thus far due to insufficient time to plan for work.

The inspectors determined that the ALARA plan and Radiation Work Permits for the work activities observed established adequate measures to minimize worker dose and spread of contamination. The inspectors observed adequate pre-job briefings, coverage by RP personnel during work activities, and worker adherence to radiological controls and instructions. The inspectors observed adequate radiological postings in the areas of the plant toured. Additionally, the inspectors determined that the observed instrument source checks and calibrations were performed appropriately and indicated satisfactory performance of the instruments.

For the work activities observed, the inspectors noted adequate placement of continuous air monitors and area radiation monitors in the work area. The inspectors determined that based on documentation reviewed, for work that was conducted inside the condensate storage tanks in September 2023 when workers were wearing respirators, appropriate air monitoring was performed to assess airborne radiological conditions and workers were trained in accordance with the site respiratory protection program. The inspectors noted that the site maintains the capability to conduct in vivo and in vitro bioassays as needed to assess workers' internal exposure.

The inspectors observed that the radioactive waste shipment observed was packaged, marked, and placarded in accordance with DOT requirements, and that thorough radiation surveys were performed that demonstrated the radiation levels were within



regulatory limits. The inspectors verified that shipping papers and emergency response information associated with the shipment were complete and accurate.

c. Conclusions

No violations of more than minor safety significance were identified.

**4.0 Exit Meeting Summary**

On April 23, 2024, the inspectors presented the inspection results to John Moylan, Site Vice President, and other members of the HDI staff. No proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTARY INFORMATION**

### **KEY POINTS OF CONTACT**

J. Moylan - Site Vice President  
D. Noyes - Senior Compliance Manager  
J. McDonough - Decommissioning Manager M. Lawson – Radiation Protection Manager  
D. Cook – Employee Concerns Program Manager  
M. Dagnello – Work Control Manager  
W. Flick – Lead Auditor  
W. Harris, CHP – RP Corporate Functional Area Manager  
A. Lombardo - RP Superintendent  
D. Love – Instrumentation Specialist  
G. Madison, CHP – RP consultant  
L. Rostek – ALARA Coordinator  
M. Soler – VP of Quality, HDI  
A. Steward - RP Supervisor

### **ITEMS OPEN, CLOSED, AND DISCUSSED**

None

### **PARTIAL LIST OF DOCUMENTS REVIEWED**

50.59 Evaluation for REE 19-036 Addendum 05 Static Airflow Test  
Air Samples 2023-0428, 2023-0429, 2023-0430, 2023-0431, 2023-0432, 2023-0433,  
2023-0434, 2023-0435, 2023-0436, 2023-0437, 2023-0438, 2023-0439, 2023-0440,  
2023-0443, 2023-0463, 2023-0464, 2023-0465, 2023-0466, 2023-0467, 2023-0468,  
2023-0469, 2023-0470, 2023-0471, 2023-0472, 2023-0473, 2023-0474, 2023-0475,  
2023-0478, 2023-0479, 2023-0480, 2023-0487, 2023-0488, 2023-0489, 2023-0490  
ALARA Plan 2024-110, 2024-118, 2024-147  
Apparent Cause Evaluation for IR-PIL-06481  
Champion End of Shift Report 3-7-24  
Decommissioning Quality Assurance Program, Rev. 2  
DSP-RA-001, Rev. 1, Corrective Action Program  
DSP-WC-DC-100 Decommissioning Work Control Process  
EC PNP-2023-079 Relocate Chemistry Lab  
EC PNP-2023-089 Install Reactor Cavity Filtering System  
EC PNP-2023-090 Cassette Transfer from DSP to SFP  
EC PNP-2023-062 Rev. 1 Install RBV Flow Indication  
Evaluation of Contractor Respiratory Protection Program, Master Lee Energy Services Corp  
HpGe Detector 3 Calibration 2-2024  
Internal Audit Report, RP and Fire Protection Programs, 2023  
Issue Reports PIL-05125, 06245, 06250, 06252, 06295, 06316, 06323, 06329, 06330, 06356,  
06366, 06376, 06428, 06453, 06461, 06473, 06481, 06482, 06483, 06491, 06639, 06683,  
06752, 06761, 06765, 06831, 06887, 07058, 07063, 07070, 07087, 07088, 07091, 07099,  
07100, 07121, 07123, 07128, 07135, 07138, 07143, 07145, 07169, 07182, 07183, 07184.  
List of Site 50.59 Qualified Individuals  
Master-Lee Energy Services Corp Respiratory Protection Program  
NISP-RP-001 Portable Survey Instruments  
NISP-RP-003, Radiological Air Sampling

NISP-RP-006 Personnel Contamination Monitoring  
 Personnel Contamination Event Log 2023  
 P-EN-LI-100 Process Applicability Determination, Rev. 31  
 P-EN-LI-101, Rev. 18, 10 CFR 50.59 Evaluations  
 P-EN-RP-110, ALARA Program, Rev 17  
 P-EN-RP-203, Dose Assessment, Rev 12  
 P-EN-RP-208, Whole Body Counting / In Vitro Bioassay, Rev 10  
 P-EN-RP-303, Source Checking Radiation Protection Instrumentation, Rev. 6  
 P-EN-RP-501 Respiratory Protection Program  
 PNPS Procedure 7.4.61 Calibration of the EG&G Ortec Gamma Spectroscopy System  
 Practical Factors Training for Hooded PAPRs  
 Radiological Surveys 2023-0682, 2023-0683, 2023-1618, 2023-1619  
 REE 16-026 Rev 4, Evaluation of Minimum Reportable Dosimetry Results  
 REE 19-036 Addendum 5, Airflow Pattern Characterization of the In-Plant Environment  
 REE 20-242 Addendum 06, Instructions for Calibrating Ion Chamber Survey Meters  
 RP Department 2022 Self-Assessment Report  
 RWP 2024-147  
 RWP 2024-111  
 RWP 2024-147 In-Progress Review  
 RWP 2023-151 Termination  
 Shipping Packages 24-019, 24-110  
 Skin Dose Estimate Form, PCE 2023-03  
 TEDE ALARA Evaluation 2023-152  
 Whole Body Counter Log sheet 2023

**LIST OF ACRONYMS USED**

|       |   |
|-------|---|
| ACE   | Apparent Cause Evaluation                         |
| ADAMS | Agency-wide Document and Access Management System |
| ALARA | As Low As Reasonable Achievable                   |
| CAP   | Corrective Action Program                         |
| CFR   | Code of Federal Regulations                       |
| DOT   | Department of Transportation                      |
| ECP   | Employee Concerns Program                         |
| ENOI  | Entergy Nuclear Operations, Inc                   |
| GPO   | Government Printing Office                        |
| HDI   | Holtec Decommissioning International, LLC         |
| IMC   | Inspection Manual Chapter                         |
| IR    | Issue Report                                      |
| ISFSI | Independent Spent Fuel Storage Installation       |
| NRC   | U.S. Nuclear Regulatory Commission                |
| PAD   | Process Applicability Determination               |
| PNPS  | Pilgrim Nuclear Power Station                     |
| QA    | Quality Assurance                                 |
| RP    | Radiation Protection                              |
| RWP   | Radiation Work Permit                             |