



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

February 9, 2022

Mr. 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. 05000293/2021004

Dear Mr. Trice:

On December 30, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed its quarterly inspection under inspection manual chapter 2561, "Decommissioning Power Reactor Inspection Program," and inspection manual chapter 2690, "Inspection Program for Storage of Spent Reactor Fuel and Reactor Related Greater-Than-Class C Waste at Independent Spent Fuel Storage Installations and for 10 CFR Part 71 Transportation Packagings" at the Pilgrim Nuclear Power Station (PNPS). On-site focused topical inspections using three inspection procedures were conducted on November 29 - December 2, 2021 and December 13 - 17, 2021. Additional inspection activities (in office reviews) were conducted remotely as a consequence of the COVID-19 public health emergency (PHE) during the 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, a review of procedures and records, and plant walk-downs. The results of the inspection were discussed with Mr. John Moylan, Site Vice President, and other members of the PNPS staff on January 11, 2022, and are described in the enclosed report.

Within the scope of this inspection, no violations 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, 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; 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

K. Trice

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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).

No reply to this letter is required. Please contact Harold (Harry) Anagnostopoulos at 610-337-5322 if you have any questions regarding this matter.

Sincerely,

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

Docket No. 05000293
License No. DPR-35

Enclosure: Inspection Report 05000293/2021004
w/Attachment

cc w/encl: Distribution via ListServ

HOLTEC DECOMMISSIONING INTERNATIONAL, LLC, PILGRIM NUCLEAR POWER STATION
 - NRC INSPECTION REPORT NO. 05000293/2021004, DATED FEBRUARY 9, 2022.

DOCUMENT NAME: https://usnrc.sharepoint.com/:w:/r/teams/Region-I-Decommissioning-Branch/_layouts/15/Doc.aspx?sourcedoc=%7B28197E40-4CAC-4D84-AB8A-1D657B8422F8%7D&file=PG%202021004%20Inspection%20Report_07FEB2022%20Rev1.docx&action=default&mobileredirect=true

SUNSI Review Complete: HAnagnostopoulos

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NAME	HAnagnostopoulos/ha		OMasnyk-Bailey/omb		ADimitriadis/ad			
DATE	02/07/2022		02/03/2022		02/09/2022			

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Docket No. 05000293

License No. DPR-35

Report No. 05000293/2021004

Licensee: Holtec Decommissioning International, LLC (HDI)

Facility: Pilgrim Nuclear Power Station (PNPS)

Location: Plymouth, Massachusetts

Inspection Period: October 1, 2021 to December 30, 2021

Topical Inspection Dates: November 29, 2021 to December 2, 2021
December 13 to 17, 2021

Inspectors: Harold Anagnostopoulos, Senior Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Orysia Masnyk Bailey, Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Safeguards

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)
Pilgrim Nuclear Power Station (PNPS)
NRC Inspection Report No. 05000293/2021004

A routine announced safety inspection of Pilgrim Nuclear Power Station (PNPS) was completed on December 30, 2021. On-site focused topical inspections using three inspection procedures were conducted November 29 - December 2, 2021 and December 13 - 17, 2021 and focused on decommissioning activities and the safe operation of the Independent Spent Fuel Storage Installation (ISFSI) program. Additional inspection activities were conducted remotely during the inspection period as a consequence of the COVID-19 PHE. The inspection included an evaluation of the programs for problem identification & resolution at the site, selected elements of the radiation protection program, observation of multi-purpose canister (MPC) loading operations, and a verification of conformance to the dry fuel storage system certificate of compliance.

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." 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 and Reactor-Related Greater than-Class C Waste at Independent Spent Fuel Storage Installations and for 10 CFR Part 71 Transportation Packagings."

Based on the results of this inspection, no violations 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 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 ISFSI II cask storage pad (ADAMS Accession No. ML 21348A748).

PNPS is in the active decommissioning phase with no fuel in the spent fuel pool, as described in IMC 2561.

2.0 Decommissioning Performance and Status Review

2.1 Inspection Procedures 40801, 83750

a. Inspection Scope

The inspectors assessed HDI's effectiveness in promptly detecting and correcting issues of concern, conditions adverse to quality, and non-conformances, and attended a Management Review Committee meeting to evaluate management's engagement and responsiveness to identified issues of concern within the corrective action program. The inspectors also attended a work order/issue report assignment meeting to evaluate the process whereby identified issues are screened for significance and assigned to staff for resolution.

The inspectors performed a detailed review of the Adverse Condition Analysis for IR-PIL-2599 "Missed State Notification Wastewater Overflow", IR-PIL-2934 "Ineffective Corrective Actions", and Apparent Cause Evaluation for IR-PIL-3972, "Unauthorized Discharge of Vault Pumping Effluent". The inspectors evaluated the reasonableness of the causes and the appropriateness of the resultant corrective actions for each analysis reviewed and conducted a review of all issue reports, as provided by HDI through routine e-mail communication, on a weekly basis during the inspection period.

The inspectors reviewed the radiation protection (RP) organization, conducted walk-downs of RP facilities, examined radioactive check and calibration sources, and inspected RP instrumentation. The inspectors observed the calibration of an Electronic Personal Dosimeter, a Telepole radiation meter, a RO-2 radiation meter, and an AMP-100 radiation meter. The inspectors also observed the conduct of radiologically related work on the refuel floor and reviewed the RP program-documentation for the loading of Dry Fuel Storage Cask 62, the loading of Separator Riser Cassette 18, and interviewed personnel from General Electric (contractor), HDI, and the RP organization to assess the adequacy of

RP controls for work on the refuel floor. The inspectors evaluated the conduct of radiological air monitoring and air sampling near the spent fuel pool and reactor cavity, observed the clearance of personnel, material, and equipment from radiologically controlled areas and evaluated the utilization and placement of area radiation monitors on the refuel floor. Additionally, the inspectors evaluated the use of temporary filtered ventilation systems for the dry fuel storage campaign.

The inspectors verified that dosimeters that were used as the “dosimeter of legal record” (whole-body and extremity dosimetry) were appropriately certified in accordance with the National Voluntary Laboratory Accreditation Program. The inspectors also examined and evaluated the storage and handling of used and unused-spare dosimeters.

The inspectors met with the Radiation Protection Manager and the Site Vice President to assess the plans for staffing the RP program following a planned staffing reduction in early 2022.

b. Observations and Findings

The inspectors found that the degree of participation in the evaluation, screening, and assignment of issue reports and associated corrective actions was adequate and that appropriate levels of supervisory and management involvement were applied to the corrective action program. The inspectors determined that the threshold for the generation of an issue report continued to remain low and was consistently applied throughout the calendar year.

The inspectors found that the RP program was in a transition period, with the movement of facilities, material, and equipment in-progress, and with a significant reduction in HDI-employed RP staff planned for 2022. The Radiation Protection Manager indicated that many of the RP staff who were to be released would be rehired as contractors and would continue to support the HDI decommissioning efforts.

The inspectors determined that the program for the on-site calibration of electronic dosimetry and portable RP instruments met regulatory requirements. The inspectors found that an exceptional degree of RP instruction, guidance, and documentation was applied to the radiological aspects of the dry fuel storage campaign in the form of detailed checklists with appropriate signature blocks and well-documented radiation surveys for all phases of the work.

c. Conclusions

No violations of safety significance were identified.

3.0 Independent Spent Fuel Storage Installation

3.1 Operation of an ISFSI

a. Inspection Scope (IP 60855)

The inspectors conducted direct observations and performed independent evaluations to determine if the licensee was operating the ISFSI in conformance with their 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 selected records, and observed selected 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 Pilgrim'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 verified conformance with the Certificate of Compliance (CoC), Technical Specifications (TS), and station procedures.

b. Observations and Findings

The inspectors observed MPC processing operations including: (1) welding; (2) non-destructive weld examinations; (3) hydrostatic testing; (4) forced helium dehydration; (5) blowdowns; and (6) survey activities. During performance of these activities, the inspectors verified that procedure use, communication, and coordination of ISFSI activities met established regulatory requirements and the Holtec approved site procedures. The inspectors also observed pre-job briefings to assess the licensee's ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors. During performance of these activities, the inspectors verified that procedure use, communication, and coordination of ISFSI activities met established regulatory requirements and Holtec approved 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 performed a walkdown of the heavy haul path and toured the ISFSI pad to assess the material condition of the pad and determined that transient combustibles were not stored on the ISFSI pad, in the vicinity of the stored casks, or in the vicinity of the heavy haul path, as required by site procedures. The inspectors confirmed that transient combustible material entry onto the ISFSI pad was controlled in accordance with site procedures.

The inspectors observed radiation protection technicians as they provided job coverage for the cask loading workers. 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.

The inspectors reviewed corrective action reports and the associated follow-up actions that were generated prior to and during the campaign and verified that issues were entered into the corrective action program, were prioritized, and evaluated commensurate with their safety significance.

c. Conclusions

No violations of safety significance were identified.

4.0 Exit Meeting Summary

On January 11, 2022, the inspectors presented the inspection results to Mr. 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

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

J. Moylan, Site Vice President
J. McDonough – Operations Manager
D. Noyes, Senior Compliance Manager
M. Lawson, Radiation Protection Manager
M. Thornhill – Certified Health Physicist
A. Steward – RP Supervisor
F. McGinnis, Regulatory Assurance Specialist
D. Kanuch – G.E. Project Manager
J. Friant – G.E. Field Supervisor
G. McCarthy – Reactor Segmentation Project Manager
J. Cox - RP Supervisor
V. Petriano – Senior RP Technician
P. Kristian, Refuel Floor Project Manager
C. Hayes, Holtec Project Manager

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Adverse Condition Analysis for IR-PIL-2599
Adverse Condition Analysis for IR-PIL-2934
Adverse Condition Analysis, IR-PIL-03972, “Unauthorized Discharge of Vault Pumping Effluent.”
ALARA plan 2020 147 AP1
ALARA plan for RWPs 2021144 & 2021145
AMP-100/200 and DRM-1/2 Calibration Data Sheets, S/N 5013-104 dated 2/8/2021 & S/N 5013-109 dated 12/16/2021
Apparent Cause Evaluation for IR-PIL-3972, “Unauthorized Discharge of Vault Pumping Effluent.”
“Calibration Dose Rates vs Distance from N-10 Am-Be Source” (calibration due date of 1/31/2022)
Calibration of the TechOps 773 Bench Calibrator (N-321), dated 1/27/2021
DMC 3000 Calibration Forms, dated 11/8/2021 and 12/16/2021
DSP-RA-001, “Corrective Actions Program”, Revision 0
Hi-STORM Technical Specification Dose Rate Survey Data Sheets associated with Hi-STORM #1308, MPC #711
Ion Chamber Survey Instrument Calibration Data Sheet, S/N 3389, dated 10/7/2021
Management Review Committee agenda and information package, dated 12/13/2021
NVLAP Accreditation for Landauer, Inc., NVLAP Lab Code 100518-0, expires 12/31/2021
P-EN-RP-303, “Source Checking of Radiation Protection Instrumentation”, Revision 5
Procedure 6.1-225, “RP Controls for Dry Fuel Storage Activity”, Revision 8.
Procedure 6.5-335, “Calibration of the MGPI AMP-100/200 and DRM-1/2, Revision 7
Procedure 6.6-113, “Source Calibration”, Revision 12
Radiological Evaluation – Air Flow Pattern Characterization of the In-Plant Environment, 19-036 Addendum 03

LIST OF DOCUMENTS REVIEWED (Cont'd)

Radiological Evaluation – Instructions for Calibrating Ion Chamber Survey Meters, 20-042 Addendum 06
Radiological Evaluation – Instructions for Calibrating Telepole Survey Meters, 20-042 Addendum 08
Radiological Evaluation – Instructions for Calibrating Electronic Dosimeters, 20-042 Addendum 16
Radiological Survey Forms Radiological Evaluation – Instructions for Calibrating Ion Chamber Survey Meters, 20-042 Addendum 06
Radiological Work Permit 2021144, Revision 3
Radiological Work Permit 2021145, Revision 0
Radiological Work Permit 2021147, Revision 0
Self-Assessment / Audit Report 2021-1, “Industry Standards Comparison: Industry vs PNPS,” dated 1/31/2021
Segmented Component Tracking Worksheets, separator riser segment surveys, cassette #18
Telepole Calibration Data Sheet, S/N 6608-181, dated 2/5/2021

LIST OF ACRONYMS USED

ADAMS	Agency-wide Document and Access Management System
COC	Certificate of Compliance
CFR	Code of Federal Regulations
ENOI	Entergy Nuclear Operations, Inc
GPO	Government Printing Office
HDI	Holtec Decommissioning International, LLC
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Issue Report
ISFSI	Independent Spent Fuel Storage Installation
MPC	Multi-Purpose Canister
NRC	U.S. Nuclear Regulatory Commission
PHE	Public Health Emergency
PNPS	Pilgrim Nuclear Power Station
RP	Radiation Protection
TS	Technical Specifications