



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

November 12, 2021

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. 05000293/2021003

Dear Mr. Trice:

On September 29, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed its quarterly inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shutdown Pilgrim Nuclear Power Station (PNPS). On-site focused topical inspections using five inspection procedures were conducted on July 19 – 22, August 23, September 1, and September 20 - 23, 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 September 29, 2021, 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 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 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 05000293/2021003
w/Attachment

cc w/encl: Distribution via ListServ

HOLTEC DECOMMISSIONING INTERNATIONAL, LLC, PILGRIM NUCLEAR POWER STATION
 - NRC INSPECTION REPORT NO. 05000293/2021003, DATED NOVEMBER 12, 2021

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SUNSI Review Complete: HAnagnostopoulos

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| NAME | HAnagnostopoulos/ha | | OMBailey/OMB | | ADimitriadis/axd | | | | |
| DATE | 10/28/2021 | | 10/28/2021 | | 11/12/2021 | | | | |

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Docket No. 05000293

License No. DPR-35

Report No. 05000293/2021003

Licensee: Holtec Decommissioning International, LLC (HDI)

Facility: Pilgrim Nuclear Power Station (PNPS)

Location: Plymouth, Massachusetts

Inspection Period: July 1, 2021 to September 29, 2021

Topical Inspection Dates: July 19 – 22, August 23, September 1, and September 20 - 23, 2021

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

Briana DeBoer, 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 Security

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. 05000293/2021003

An announced routine decommissioning inspection was completed at Pilgrim Nuclear Power Station (PNPS) on September 29, 2021. Additional inspection activities were conducted remotely during the inspection period as a consequence of the COVID-19 public health emergency (PHE). The inspection included an evaluation of the safety screening, safety review, onsite management review, engineering change processes, the fire protection program, maintenance program, and the available results for site radiological and non-radiological characterization. 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 shutdown nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

Additionally, the inspection period included a review and observation of the independent spent fuel storage installation (ISFSI) dry cask activities. The NRC's program for overseeing the spent operation of dry storage of spent fuel at an ISFSI is described in IMC 2690, "Inspection Program for Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations and for 10 Code of Federal Regulations (CFR) Part 71 Transportation Packagings."

Based on the results of this inspection, no violations of NRC requirements 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). PNPS is in the active decommissioning phase with fuel in the spent fuel pool as described in IMC 2561.

2.0 Decommissioning Performance and Status Review

2.1 Inspection Procedures 37801, 64704, 71801

a. Inspection Scope

The inspectors examined the scope and conduct of the onsite safety review committee processes, procedures, and activities. This included a review to determine if the program was adequate in identifying changes to the licensing basis that may result from plant modifications. The inspectors examined the program for screening and reviewing safety evaluations under 10 CFR 50.59. The inspectors reviewed a sampling of design change packages to determine if such changes adequately considered the licensing basis for the facility.

The inspectors reviewed recent changes to the fire protection program and discussed future program modifications with the site's fire protection program engineer. The inspectors walked-down fire zones for the turbine building 51' elevation, the reactor building 91' elevation, and the reactor building 117' elevation to determine if existing plant conditions were aligned with the requirements of the fire hazards analysis and the fire protection plan. This included examination of select fire detection systems and fire barriers. The inspectors reviewed the most recent HDI audit of the fire protection program and made observations associated with implementation of the program for the control of combustible materials and ignition sources in the reactor building.

The inspectors reviewed a listing of open maintenance work requests to evaluate the scope and significance of any backlog of work. The inspectors evaluated whether maintenance and surveillance had been conducted at the appropriate frequency, including preventative maintenance.

The inspectors reviewed the results of site radiological and non-radiological characterization as-is currently available. Additionally, the inspectors conducted walkdowns of the onsite radiological characterization laboratory facilities, examined equipment, and directly inspected several soil sampling locations in the field.

The inspectors conducted indoor and outdoor plant walk-downs to assess the material condition of structures, of equipment, and of general housekeeping. The inspectors observed work on the refueling floor, including preparations for welding the lid on a multi-purpose dry fuel storage cannister (MPC) and the handling of a loaded HI-STORM fuel storage module outside of the reactor building.

The inspectors reviewed the site staffing levels as of this inspection period and discussed the plans for onsite shift staffing. The inspectors also reviewed the most recent decommissioning cost estimate, as provided by HDI, to determine if it was in accordance with the requirements outlined in 10 CFR 50.75.

During the entirety of the inspection period, the inspectors reviewed operations status reports and lists of daily issue reports, attended weekly status update calls with site management, and attended select HDI project monthly update meetings.

b. Observations and Findings

The inspectors noted that engineering changes and associated 10 CFR 50.59 evaluations were detailed and comprehensive.

The inspectors observed a high level of coordination between the onsite fire protection engineer, the onsite Fire Marshall, and the local Plymouth Fire Department. This included onsite tours and an evaluation of equipment capabilities. The inspectors determined that fire detection systems, fire suppression equipment, and fire barriers had been adequately maintained. The inspectors reviewed permits for the control of hot work (i.e., work that could present a source of ignition to combustible materials in the immediate area) and permits for transient combustible materials that were posted in the reactor building on the 117' elevation and the 91' elevation. The inspectors found that these permits were expired or warranted an update with more current information. The inspectors found no immediate safety concerns related to the permits or work being conducted in these areas.

The inspectors determined that the maintenance backlog was minimal, manageable, and that items important to safety were appropriately prioritized and tracked. The senior manager for Work Management identified that the database of open work orders reflected a larger number of items than required because certain items were no longer required (based upon the plant conditions) and would need to be purged from the database system.

c. Conclusions

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

2.2 Inspection Procedure 60854

a. Inspection Scope

The inspectors observed a dry-run involving the transfer of a mock HI-STORM from the independent spent fuel storage Installation (ISFSI) I pad to the ISFSI II pad. This was performed prior to the transfer of loaded HI-STORMs, from ISFSI I pad, to ISFSI II pad.

b. Observations and Findings

On August 23, 2021, the inspectors observed a recording of dry-run activities that took place on August 21, 2021, involving the movement of a mock HI-STORM from the ISFSI I pad to the ISFSI II pad. The inspectors observed key ISFSI pad activities including: HI-STORM pick-up from ISFSI I pad by a vertical cask transporter (VCT), installation of the seismic ring on the HI-STORM, securing the HI-STORM and seismic ring to the HI-PORT, HI-PORT travel up the haul path to the ISFSI II pad, and HI-STORM transfer on the ISFSI II pad via use of a VCT. During performance of these activities, the inspectors verified that procedure use, communication, and coordination of ISFSI activities met established regulatory requirements and site procedures.

c. Conclusions

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

2.3 Inspection Procedure 60855

a. Inspection Scope

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.

b. Findings

On July 19-22, 2021, the inspectors observed and evaluated Pilgrim's ISFSI activities associated with cask 32. On September 1, 2021, the inspectors observed transfer and storage of an existing HI-STORM stored on the ISFSI I pad to the ISFSI II pad. 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.

The inspectors observed fuel assemblies loaded into the MPC, which included a review of fuel selection and fuel loading verification. 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. The inspectors also observed movement activities including stack-up, MPC transfer, and HI-STORM movement along the haul path to ISFSI II pad. During performance of these activities, the inspectors verified that procedure use, communication, and coordination of ISFSI activities met established regulatory requirements and 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.

The inspectors performed a walk-down of the heavy haul path and toured the ISFSI I and ISFSI II pads to assess the material condition of the pads and HI-STORM systems currently loaded on the pads. The inspectors also verified that transient combustibles were not stored on the ISFSI pad or in the vicinity of the loaded dry cask storage systems. The inspectors confirmed that transient combustible material entry onto the ISFSI pad was controlled in accordance with site procedures.

The inspectors noted that the ISFSI project had used the Holtec Site Services quality assurance program, a contract service providing services to Holtec Decommissioning International (the licensee for the Pilgrim site). The division of roles and responsibilities for quality assurance of the ISFSI project will be examined in more detail by the NRC inspectors in future inspections.

c. Conclusions

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

3.0 Exit Meeting Summary

On September 29, 2021, 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. LeFrancois – Engineering Manager
G. Couch, ISFSI Project Coordinator
C. Hayes, ISFSI Pool to Pad Manager
L. Johnson, ISFSI Cask Load Supervisor
K. Niyogi, Technical Director – Nuclear Consultants International (NCI)
M. Lawson, Radiation Protection Manager
M. Dagnello – Senior Manager for Work Management
J. Tabor – Operations Shift Manager
M. Thornhill – Certified Health Physicist
A. Steward – RP Supervisor
F. McGinnis, Regulatory Assurance Specialist

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Evaluations

50.59 Evaluation Form #3413 for EC PNP-2020-034
50.59 Evaluation Form #3414 for EC PNP-2020-043
Engineering Changes EC-2021-048, EC-20210032, EC-2021-034, EC-2021-041
HI-2104743, Evaluation of Fire and Explosion Hazards at Pilgrim Power Station
HI-2188391, Pilgrim Approach Apron Analysis
HI-2188849, Pilgrim Haul Path Section 1 Qualification for VCT/HI-PORT Cask Transfer
HI-2188518, Pilgrim Underground Utility Evaluation
HI-2200265, Evaluation of Fire from HI-PORT / VCT on HI-STORM for Pilgrim
HI-2200372, Seismic Stability Analysis of HI-STORM on HI-PORT at Pilgrim
PNH-CS 004-00, Haul Path Pavement Evaluation
RRTI-2877-017
RRTI-2877-023
RRTI-2877-025
RRTI-2877-026
RRTI-2877-027
Transient Combustible Evaluation 20-10
Transient Combustible Evaluation 20-13
Transient Combustible Evaluation 2021-002.1
Transient Combustible Evaluation 21-01
Transient Combustible Evaluation 21-02

Field Condition Reports (FCR)

FCR 28771111 FCR28771112 FCR28771114 FCR28771143

Issue Reports

| | | | |
|-----------|-----------|-----------|-----------|
| PIL-01517 | PIL-01550 | PIL-02965 | PIL-03142 |
| PIL-03397 | PIL-03410 | PIL-03411 | PIL-03414 |
| PIL-03447 | PIL-03448 | PIL-03649 | PIL-03657 |

Procedures

DSP-RA-002, "Safety Review Committee", Revision 0
DSP-WC-DC-100, Decommissioning Work Control Process, Revision 0
Holtec International Quality Assurance Manual, Rev 14
HPP-2877-0200, MPC Loading at Pilgrim, Revision 5
HPP-2877-0300, MPC Sealing, Drying, and Backfilling at Pilgrim, Revision 6
HPP-2877-0400, MPC Stackup and Transfer at Pilgrim, Revision 3
HPP-2877-0500, MPC Transport at Pilgrim, Revision 4
HPP-2877-0500, MPC Transport at Pilgrim, Revision 5 DRAFT
HPP-2877-0700, Response to Abnormal Conditions at Pilgrim, Revision 2
HPP-2877-0900, Temperature Monitoring at Pilgrim, Revision 1
HPP-10201-0001, NCI Oversight Procedure for MPC Loading Operation at Pilgrim Station, Revision 0
HQP-10.0, Control of Inspection Activities, Revision 9
P-EN-DC-161, "Control of Combustibles", Revision 21
P-EN-DC-127, "Control of Hot Work and Ignition Sources", Revision 21
P-EN-DC-330, "Fire Protection Program", Revision 8
P-EN-LI-100, "Process Applicability Determination", Revision 30
P-EN-LI-101, "10 CFR 50.59 Evaluations", Revision 17
P-EN-OM-119, "Independent Safety Review", Revision 21
P-EN-QV-100, Conduct of Nuclear Oversight at Pilgrim, Revision 15
P-EN-RE-210, BWR MPC Cask Fuel Verification, Revision 5
Procedure No. 5.5.2, "Special Fire Procedure", Revision 62

Miscellaneous

Audit AP-QA-09-2020-PNP-1, "Fire Protection Audit", dated 9/24/2020
BWR MPC Cask Fuel Verification for MPC #692 dated June 28, 2021
HI-2188761, Loading Plan Report for Pilgrim, Revision 4
HI-2200844, Project 10201, NCI Proprietary
Hot Work Permit 2021-27
Independent Safety Review Record, P-EN-OM-119, "HDI Fleet DQAP Rev 0 and Associated 10 CFR 50.54a Evaluation", dated 7/30/2020
Independent Safety Review Record, P-EN-OM-119, "50.59 Evaluation for B/C Waste Storage Facility", dated 11/12/2020
Independent Safety Review Record, P-EN-OM-119, "Pilgrim QAPM Rev. 3 Including Retitle to DQAP – Rev. 1 and Associated 10 CFR 50.54a Evaluation"
Letter, "Holtec Decommissioning International Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations, dated 3/31/2021
List, 10 CFR 50.59 reviews (CY 2014 to present)
List, engineering changes for CY 2020 and 2021
List, Issue Reports related to fire protection
List, maintenance backlog by Issue Report number (with priority codes)
List, maintenance work priorities by Issue Report number, dated 9/22/2021
List, Pilgrim QA Audits for CY2021
List, procedure revisions for CY2020 and 2021

Miscellaneous (Cont'd)

Matrix, qualification list for safety review screenings and evaluations
“Pilgrim Nuclear Power Station Defueled Safety Analysis Report”, Revision 1
Process Applicability Determination Form, Attachment 9.1, “7.3.48, Airborne Effluent Monitoring of the Turbine Deck and Reactor Feed Pump, Rev #33”
Process Applicability Determination Form, Attachment 9.1, “7.4.48, Calibration of the Turbine Building Gaseous Effluent Monitors (GEMS), Rev#12”
Process Applicability Determination Form, Attachment 9.1, “7.4.49, Operation of GEMS, Rev #18”
Radiological Survey Form, Survey Log # 2021-0804, Map # 181, dated July 6, 2021
Radiological Survey Form, Survey Log # 2021-0413, Map # 180, dated April 14, 2021
“Updated Fire Hazards Analysis”, Engineering Report No. 89XM-1-ER-Q, Revision 21

LIST OF ACRONYMS USED

| | |
|-------|---|
| ADAMS | Agency-wide Document and Access Management System |
| CFR | Code of Federal Regulations |
| CoC | Certification of Compliance |
| DOE | U.S. Department of Energy |
| DSAR | Decommissioning Safety Analysis Report |
| 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 |
| TS | Technical Specifications |
| VCT | Vertical Cask Transporter |