



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

May 28, 2024

John Moylan
Site Vice President
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360

**SUBJECT: PILGRIM NUCLEAR POWER STATION – PREAPPLICATION READINESS
ASSESSMENT OF THE LICENSE TERMINATION PLAN**

Dear John Moylan:

By letter dated April 22, 2024 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24113A209), Holtec Decommissioning International, LLC (HDI) requested that the U.S. Nuclear Regulatory Commission (NRC) staff conduct a preapplication readiness assessment for the draft License Termination Plan (LTP) for the Pilgrim Nuclear Power Station (PNPS). HDI plans to submit the PNPS LTP in September 2024.

The NRC, through discussions with HDI, has determined that it would be appropriate to conduct a preapplication readiness assessment (hereinafter “readiness assessment”) in support of HDI’s recent request as part of the preapplication interactions on the PNPS LTP draft application. The NRC’s readiness assessment will take place in phases, as discussed in the attached readiness assessment plan, from May 2024 through August 2024.

The readiness assessment is not part of the NRC’s official acceptance review process. The readiness assessment of the PNPS LTP application will allow the NRC staff to understand the level of detail in the draft application and identify any major issues or information gaps between the draft application and the technical content required to be included in the application submitted to the NRC. Therefore, the observations from the readiness assessment do not predetermine whether the application will be docketed. The attached readiness assessment plan provides the details and logistics of the upcoming readiness assessment activities.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning this matter or the upcoming readiness assessment, please contact me at (301) 415-3178 or via e-mail at Marlayna.Doell@nrc.gov.

Sincerely,



Signed by Doell, Marlayna
on 05/28/24

Marlayna V. Doell, Project Manager
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket Nos.: 50-293 and 72-1044
License No.: DPR-35

Attachment: Readiness Assessment Plan

cc w/attachment: Pilgrim ListServ

**PILGRIM NUCLEAR POWER STATION
PREAPPLICATION READINESS ASSESSMENT OF THE LICENSE TERMINATION PLAN**

Docket No. 50-293

LOCATION

The U.S. Nuclear Regulatory Commission (NRC) plans to conduct both an in-person and virtual readiness assessment review of the Pilgrim Nuclear Power Station (PNPS) draft License Termination Plan (LTP) in several phases from May 2024 through August 2024.

The virtual portions of the readiness assessment review will take place at the NRC offices leveraging a secure portal to review the information provided by the licensee, Holtec Decommissioning International, LLC (HDI). The in-person portions of the readiness assessment review will take place at the HDI offices for the PNPS site in Plymouth, Massachusetts.

PURPOSE

HDI has voluntarily agreed to engage with the NRC staff in a preapplication readiness assessment (hereinafter “readiness assessment”) of the PNPS draft LTP application before the application is submitted for a formal NRC review. The preapplication readiness assessment will allow the NRC staff to (1) identify information gaps between the draft application and the technical content required in the application submitted to the NRC, (2) identify major technical or policy issues that may adversely impact the docketing or technical review of the application, and (3) become familiar with the application, particularly in areas where HDI is proposing new concepts or novel decommissioning approaches. The NRC’s observations from the readiness assessment will inform HDI in finalizing the PNPS LTP application and also will assist the NRC staff in planning resources in preparation for the review once the LTP is formally submitted.

BACKGROUND

In a letter dated April 22, 2024 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24113A209), HDI stated that it plans to submit the PNPS LTP in September 2024. In agreement with HDI, the NRC has scheduled a readiness assessment of the draft PNPS LTP in several phases from May 2024 through August 2024. The readiness assessment will take place both virtually from the NRC offices and in person at the PNPS site.

SCOPE OF THE READINESS ASSESSMENT

The readiness assessment of the PNPS LTP draft application will focus on the major technical and regulatory topics identified from past reviews of LTP applications to be challenging review areas. Specific areas where the NRC staff plans to focus its readiness assessment review of the PNPS LTP and provide specific feedback to HDI include:

- site characterization information available to date and additional characterization plans
- identification of the remaining dismantlement activities at the site
- plans for remediation of soil, as well as above and below grade structures
- overall final status survey (FSS) design and details on the related activities
- the plan for the end use of the site, and how those assumptions are modeled in the dose compliance scenario being proposed in the PNPS LTP

- deselection of certain radionuclides of concern from the initial suite based on risk
- use of surrogate ratios for certain hard to detect radionuclides
- volumetric residual radioactivity considerations
- subsurface soil characterization and continuing characterization plans
- the approach used to survey and assess dose from discrete radioactive particles and areas with elevated measurement concentrations
- the approach and criteria used to survey and assess dose from subsurface residual radioactivity (e.g., subsurface soil excavations, reactor basement substructures, and materials planned for reuse)
- methods for surveying embedded and buried piping, as applicable
- methods for connecting events noted in the historical site assessment to subsurface and groundwater radionuclide characterization
- measurement and reporting of site-specific radionuclides of concern in groundwater
- development of the conceptual site model for groundwater flow and transport including the relationship of structures to the groundwater system
- ability of the groundwater monitoring network to fulfill the objectives of the FSS for dose due to existing groundwater contamination (residual radioactivity)
- support for assumptions related to background radioactivity in groundwater, if non-plant related radioactivity will be subtracted
- development of derived concentration guideline levels (DCGLs), including compliance and alternative exposure scenarios (e.g., less likely but plausible scenario assumptions)
- changes in the radiological controls implemented to control radiological contamination associated with the remaining decommissioning and remediation activities
- the description of the quality assurance program, to support both field survey work during characterization and FSS activities, as well as laboratory analysis work
- sufficiency of updates to the decommissioning cost model and the environmental report in support of the remaining decommissioning and dismantlement activities

The NRC staff will use the acceptance criteria contained in NUREG-1700, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans," Revision 2, and the readiness assessment review approach outlined in LIC-116, "Preapplication Readiness Assessment," to determine whether the information provided in the draft PNPS LTP appears sufficient to meet the NRC's acceptance standards. Several of the areas listed above are anticipated to be addressed in detail during the formal PNPS LTP review process, but the opportunity to provide a readiness assessment of this information will help ensure the NRC staff has a clearer understanding of the application when it is submitted.

INFORMATION NECESSARY FOR THE READINESS ASSESSMENT

As previously discussed with HDI, the following should be available as needed to support the readiness assessment: full copies of the draft PNPS LTP application as specific chapters are completed, all supporting topical reports, all major supporting technical reports, examples of important calculations, and staff who can answer questions related to these documents.

READINESS ASSESSMENT TEAM

The following table shows the technical review areas and the responsible technical staff.

Review Area	Reviewer(s)
General LTP structure and timeframe, regulatory considerations, and identification of the license and site boundary requirements	Marlayna Doell
Remaining dismantlement activities and plans for site and structure remediation	Marlayna Doell
Site characterization, initial survey area classifications, identification of radionuclides of concern, and continuing characterization, as well as FSS planning and as low as reasonably achievable considerations	Gregory Chapman and Nathan Fuguet
Approach for addressing compliance with the radiological criteria for license termination and DCGL development	Karen Pinkston
Hydrogeological and groundwater considerations for decommissioning and establishing the final compliance scenario	Randall Fedors
Updates to the site-specific estimate of remaining decommissioning costs to assure adequate funding remains available	Emil Tabakov
Supplement to the environmental report to discuss significant changes associated with the proposed termination activities	Isaac Johnston

LOGISTICS

The PNPS LTP readiness assessment will take place both virtually from the NRC offices and in person at the PNPS site. It is scheduled to begin in May 2024 and conclude in August 2024. Periodic debriefings between the NRC and HDI staff will take place as needed during this interval. The readiness assessment will take place in phases based on the availability of complete chapters of the draft PNPS LTP for NRC staff review.

The tentative schedule, which is subject to change based on the availability of NRC resources and the timeliness and quality of interactions between the NRC and HDI staff, for these readiness assessment review phases, including a PNPS site visit, is as follows:

Draft PNPS LTP Chapter/Topic	General Readiness Assessment Period
Review of Chapter 1, "General Information," of the draft PNPS LTP	May 20-31, 2024
Review of Chapter 3, "Identification of Remaining Site Dismantlement Activities," of the draft PNPS LTP	June 3-14, 2024
Review of Chapter 4, "Remediation Plans," of the draft PNPS LTP	June 17-28, 2024
One week site visit to discuss initial PNPS LTP observations, site characterization, and ongoing remediation activities	June 24-28, 2024
Review of Chapter 7, "Update to the Site-Specific Decommissioning Costs," of the draft PNPS LTP	July 1-12, 2024

Review of Chapter 8, "Supplement of the Environmental Report," of the draft PNPS LTP	July 1-12, 2024
Review of Chapter 5, "Final Status Survey Plans," of the draft PNPS LTP	July 8-19, 2024
Review of Chapter 2, "Site Characterization," of the draft PNPS LTP	July 22-August 2, 2024
Review of Chapter 6, "Compliance with the Radiological Criteria for License Termination," of the draft PNPS LTP	August 5-23, 2024
Public meeting to discuss the outcome of the draft PNPS LTP readiness assessment and the final NRC staff observations	August 28, 2024
Closeout of the draft PNPS LTP readiness assessment and documentation of the NRC staff's observations in a public memorandum	September 13, 2024

The NRC technical staff will charge time to the following fee-billable cost activity code number: 05000293/L-2024-LRM-0067 – Pilgrim – License Termination Plan Preapplication Readiness Assessment Activities. The staff will observe appropriate handling and protection of proprietary or safeguards information, or both, throughout the readiness assessment.

READINESS ASSESSMENT OBSERVATIONS

The NRC will send the readiness assessment observations, including any identified technical concerns or major information gaps, to HDI in a publicly available report that will also summarize the final scope of the readiness assessment. The NRC staff's expectation is that HDI will consider the observations from the readiness assessment while finalizing the PNPS LTP application and will reevaluate the application submission date based on its evaluation of the time to address the readiness assessment observations.

REFERENCES

1. Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors," Revision 2 (ML19128A067).
2. NUREG-1700, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans," Revision 2 (ML18116A124).
3. NUREG-1757, Volume 2, "Consolidated Decommissioning Guidance: Characterization, Survey, and Determination of Radiological Criteria – Final Report," Revision 2 (ML22194A859).
4. NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," Revision 1 (ML003761445 and ML003761454).
5. DUWP-ISG-02, "Draft Interim Staff Guidance: Radiological Survey and Dose Modeling of the Subsurface To Support License Termination" (ML23177A008).

Pilgrim Nuclear Power Station - Preapplication Readiness Assessment Plan for the Holtec
Decommissioning International License Termination Plan DATE May 28, 2024

DISTRIBUTION:

ADAMS Accession No.: ML24129A104; Ltr ML24129A104

OFFICE	NMSS/DUWP/RDB	R-I/EAGLT	NMSS/DUWP/RDB	
NAME	MDoell <i>MD</i>	NWarnek <i>NW</i>	MDoell <i>MD</i>	
DATE	May 15, 2024	May 28, 2024	May 28, 2024	

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