



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

January 2, 2020

Ms. Pamela B. Cowan
Senior Vice President
and Chief Operating Officer
Holtec Decommissioning International, LLC
Krishna P. Singh Technology Campus
1 Holtec Blvd.
Camden NJ 08104

SUBJECT: PILGRIM NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT
NO. 252 TO RENEWED FACILITY LICENSE RE: REMOVE CYBER SECURITY
PLAN LICENSE CONDITION (EPID L-2019-LLA-0098)

Dear Ms. Cowan:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 252 to Renewed Facility License No. DPR-35 for the Pilgrim Nuclear Power Station (Pilgrim), in response to Entergy Nuclear Operations, Inc.'s application dated April 25, 2019.

The amendment removes the Pilgrim Cyber Security Plan from Pilgrim License Condition 3.G. The amendment is provided as enclosure 1. The amendment is effective 10 months following the permanent cessation of power operations and shall be implemented within 30 days of the effective date.

A copy of the related Safety Evaluation is enclosed as enclosure 2. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* Notice.

Sincerely,

A handwritten signature in black ink that reads "Scott P Wall".

Scott P. Wall, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures:

1. Amendment No. 252 to Renewed License No. DPR-35
2. Safety Evaluation

Cc: Listserv



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HOLTEC DECOMMISSIONING INTERNATIONAL, LLC

HOLTEC PILGRIM, LLC

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

AMENDMENT TO RENEWED FACILITY LICENSE

Amendment No. 252
Renewed License No. DPR-35

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by Entergy Nuclear Operations, Inc.,¹ dated April 25, 2019, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will be maintained in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

¹ Effective August 26, 2019, Pilgrim Renewed Facility License No. DPR-35, and the general license for the Pilgrim Independent Spent Fuel Storage Installation was transferred from Entergy Nuclear Operations, Inc. (ENOI) to Holtec Pilgrim, LLC as the licensed owner and to Holtec Decommissioning International, LLC (HDI) as the licensed operator for decommissioning. In a letter dated August 22, 2019, HDI requested the NRC to continue all ongoing regulatory actions and reviews currently underway for Pilgrim. HDI has assumed responsibility for the continuation of these regulatory actions and reviews (Agencywide Documents Access and Management System Accession No. ML19234A357).

2. Accordingly, Renewed Facility License No. DPR-35 is amended by changes as indicated in the attachment to this license amendment, and paragraph 3.G. of Renewed Facility License No. DPR-35 is hereby amended to remove the second paragraph that reads:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 236, as supplemented by changes approved by Amendment Nos. 238, 241, 244, and 247.

3. This license amendment is effective 10 months following the permanent cessation of power operations and shall be implemented within 30 days of the effective date.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'NLS' followed by a flourish.

Nancy L. Salgado, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
License No. DPR-35

Date of Issuance: January 2, 2020

ATTACHMENT TO LICENSE AMENDMENT NO. 252

PILGRIM NUCLEAR POWER STATION

RENEWED FACILITY LICENSE NO. DPR-35

DOCKET NO. 50-293

Replace the following page of the Renewed Facility License with the attached revised page. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

Renewed Facility License No. DPR-35

Remove

Insert

-3-

-3-

provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. DELETED

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 250, are hereby incorporated in the renewed license. The licensee shall maintain the facility in accordance with the Permanently Defueled Technical Specifications.

C. Records

HDI shall keep facility records in accordance with the requirements of the Technical Specifications.

D. DELETED

E. DELETED

F. DELETED

G. Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Pilgrim Nuclear Power Station Physical Security, Training and Qualification, and Safeguards Contingency Plan, Revision 0" submitted by letter dated October 13, 2004, as supplemented by letter dated May 15, 2006.



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 252

TO RENEWED FACILITY LICENSE NO. DPR-35

HOLTEC DECOMMISSIONING INTERNATIONAL, LLC

HOLTEC PILGRIM, LLC

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1.0 INTRODUCTION

By letter dated November 10, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15328A053), pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.82(a)(1)(i), Entergy Nuclear Operations, Inc. (ENOI) provided formal notification to the U.S. Nuclear Regulatory Commission (NRC, or the Commission) that it planned to permanently cease power operations at Pilgrim Nuclear Power Station (Pilgrim) no later than June 1, 2019. ENOI permanently ceased power operations at Pilgrim on May 31, 2019. By letter dated June 10, 2019 (ADAMS Accession No. ML19161A033), ENOI certified that all fuel was permanently removed from the Pilgrim reactor and placed in the spent fuel pool (SFP) on June 9, 2019. Based on the docketing of these certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, as specified in 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for Pilgrim no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel. Spent fuel is currently stored onsite at the Pilgrim facility in the SFP and a dry cask independent spent fuel storage installation (ISFSI). Effective August 26, 2019 (ADAMS Accession No. ML19239A037), Pilgrim Renewed Facility License (RFL) No. DPR-35, and the general license for the Pilgrim ISFSI was transferred from ENOI to Holtec Pilgrim, LLC as the licensed owner and to Holtec Decommissioning International, LLC (HDI, or the licensee) as the licensed operator for decommissioning. In a letter dated August 22, 2019 (ADAMS Accession No. ML19234A357), the NRC was informed in a joint letter from ENOI and HDI that HDI requested the NRC continue all ongoing regulatory actions and reviews currently underway by the NRC for Pilgrim. Since the license transfer, HDI assumed responsibility for the continuation of these regulatory actions and reviews.

By letter dated April 25, 2019 (ADAMS Accession No. ML19115A225), ENOI requested a license amendment to RFL No. DPR-35 for Pilgrim. The proposed license amendment would remove reference to the Cyber Security Plan (CSP) and update the associated License Condition 3.G (hereafter, the "cyber security license condition") in the renewed facility license. This will allow HDI to terminate the Pilgrim CSP and associated activities at the site. The

proposed change is based on Pilgrim's lowered risk profile for possible accidents or offsite radiological release due to its permanently defueled status and the continued radioactive decay of the remaining spent fuel.

The NRC staff initially reviewed and approved the licensee's original Cyber Security Plan (CSP) implementation schedule by Amendment No. 236 dated July 22, 2011 (ADAMS Accession No. ML11152A043), to RFL DPR-35 concurrent with the incorporation of the CSP into the facility's current licensing basis. The NRC staff then reviewed and approved the licensee's current CSP implementation schedule by Amendment No. 238 dated November 19, 2015 (ADAMS Accession No. ML12261A130). The NRC staff then reviewed and approved ENOI's request to initially extend the CSP Milestone 8 (MS8) implementation date from December 15, 2014, to June 6, 2016, with Amendment No. 241 dated December 11, 2014 (ADAMS Accession No. ML14336A661). The NRC staff then reviewed and approved ENOI's request to extend the MS8 implementation date from June 6, 2016, to December 15, 2017, with License Amendment No. 244, by letter dated June 6, 2016 (ADAMS Accession No. ML16082A460). NRC issued Amendment No. 247 dated December 15, 2017 (ADAMS Accession No. ML17289A060) to extend the full implementation date of the Pilgrim MS8 implementation date from December 15, 2017, to December 31, 2020.

2.0 REGULATORY EVALUATION

The NRC staff considered the following regulatory requirements and guidance during its review of the April 25, 2019 license amendment application to remove the Pilgrim CSP license condition:

- The regulation under 10 CFR 73.54, "Protection of digital computer and communication systems and networks," requires that as of November 23, 2009, each licensee currently licensed to operate a nuclear power plant under 10 CFR Part 50 submit a cyber security plan for Commission review and approval.
- SECY-12-0088, "The Nuclear Regulatory Commission Cyber Security Roadmap," dated June 25, 2012 (ADAMS Accession No. ML12135A050), states, in part, that "[b]y regulation, dry cask storage in [independent spent fuel storage installations] allows spent fuel that has already been cooled in the spent fuel pool for 1 year to be surrounded by inert gas inside a storage cask. Licensees that are subject to 10 CFR 72.212, 'Conditions of General License Issued Under § 72.210,' (i.e., licenses limited to storage of spent fuel in casks) must also comply with specific portions of 10 CFR 73.55, ['Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage'] requirements for physical security and the ASM [additional security measure] Orders, but are not subject to the provisions of 10 CFR 73.54, which specifically applies to operating reactors and COL (combined operating license) applicants."
- A memorandum dated December 5, 2016, from the NRC Executive Director for Operations, "Cyber Security Requirements for Decommissioning Nuclear Power Plants" (ADAMS Accession No. ML16172A284) was prepared to inform the Commission as to how the staff intended to apply 10 CFR 73.54, "Protection of digital computer and communications systems and networks," to nuclear power reactor licensees who have transitioned from an operating status to a decommissioning status.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Requested Change

In its request dated April 25, 2019, ENOI requested the removal of the existing cyber security license condition from the Pilgrim renewed facility license and removal of the commitment to fully implement the CSP by the MS8 commitment date of December 31, 2020.

In that request, ENOI stated that following permanent shutdown of Pilgrim and removal of spent fuel from the reactor, the spectrum of possible accidents are significantly reduced, and the risk of an offsite radiological release is significantly lower for a permanently defueled reactor. ENOI asserted that the only design-basis accident that could potentially result in an offsite radiological release at Pilgrim is the fuel handling accident which is predicated on spent fuel being stored in the spent fuel pool (SFP). ENOI stated that spent fuel at Pilgrim is currently stored in both the SFP and the independent spent fuel storage installation (ISFSI). ENOI asserted in this configuration, the spectrum of possible accident transients and accidents is significantly reduced compared to an operating nuclear power reactor.

ENOI performed an analysis that concluded that 46 days after shutdown, the radiological consequence of the fuel handling accident would not exceed the limits established by the U.S. Environmental Protection Agency's (EPA) Protective Action Guides (PAGs) at the exclusion area boundary. ENOI asserted that once Pilgrim has been permanently shut down for greater than 46 days, the possibility of an offsite radiological release from a design basis accident that could exceed the EPA PAGs is significantly reduced. ENOI's analysis concluded that after sufficient cooling time following cessation of reactor operations, there is little chance that the spent fuel in the SFP could heat up to clad ignition temperature within 10 hours, which is sufficient time for mitigation strategies to prevent spent fuel heat-up damage.

ENOI further noted that this rationale is similar to the rationale used to justify a reduction of emergency preparedness requirements during decommissioning (as detailed in NUREG-1738, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants," February 2001 (ADAMS Accession No. ML010430066)), and is documented in safety evaluations associated with decommissioning plant emergency preparedness exemption requests.

By letter dated June 10, 2019 (ADAMS Accession No. ML19161A033), and as supplemented by letters dated November 30, December 4, 2018, February 14, and February 18, 2019 (ADAMS Accession Nos. ML18338A205, ML18341A219, ML19050A298, and ML19056A260, respectively), ENOI submitted an analysis to the NRC of the adiabatic heatup of spent fuel scenario in support of requested exemptions from specific requirements of 10 CFR 50.47 and Appendix E to 10 CFR Part 50 for certain emergency planning requirements as appropriate for a decommissioning facility. The analysis was reviewed and approved by the NRC staff who found that after 10 months, more than 10 hours would be available before an offsite release might occur. Therefore, the effective date of the exemption to the emergency planning requirements at Pilgrim was modified to 10 months following the permanent cessation of power operations (ADAMS Accession No. ML19142A060). The conclusion that resulted from the NRC staff's analysis was that due to the length of time it would take for the adiabatic heat-up to occur, there is ample time for the licensee to respond to any partial draindown event that might cause such an occurrence by restoring cooling or makeup, or providing spray. As a result, the likelihood that such a scenario would progress to a zirconium fire is not deemed credible.

ENOI also asserted there is a reduced cyber security risk due, in part, to the fact there are fewer critical digital assets at a decommissioning reactor in comparison to the number of critical digital assets at an operating reactor. The licensee stated that once spent fuel is moved from the reactor vessel and placed in the spent fuel pool, the digital computers and communication systems and networks that require cyber protection are primarily those associated with security and emergency preparedness functions, and those safety systems that support operation of the spent fuel pool. Once the spent fuel has sufficiently decayed, the potential consequences of a cyber-attack are significantly reduced.

3.2 NRC Staff Evaluation of Requested Change

The NRC staff evaluated the ENOI's application using the regulatory requirements and guidance cited in Section 2.0 of this safety evaluation. The Cyber Security Rule, as contained in 10 CFR 73.54, applies to licensees currently licensed to operate a nuclear power plant. The NRC staff has determined that 10 CFR 73.54 does not apply to reactor licensees that have submitted certifications of permanent cessation of operations and permanent removal of fuel under 10 CFR 50.82(a)(1) or 10 CFR 52.110(a)(1), and whose certifications have been docketed by the NRC. Since the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel have been docketed, pursuant to 10 CFR 50.82(a)(2), the Pilgrim license no longer authorizes use of the facility for power operation or emplacement or retention of fuel into the reactor vessel. Therefore, the NRC staff has determined that the Cyber Security Rule at 10 CFR 73.54 no longer applies to Pilgrim.

ENOI further determined that, after 46 days from permanent shutdown the fuel will have cooled in the SFP for a sufficient amount of time such that no design-basis accident could have radiological consequences that exceed the EPA PAGs. ENOI completed site-specific analyses supporting the conclusion that a zirconium fire would be highly unlikely in the event of a beyond-design-basis draindown scenario. The NRC staff's previous reviews and approvals of ENOI's associated analyses and the results are included in letter to HDI dated December 18, 2019 (ADAMS Accession No. ML19142A043). The NRC staff previously verified analysis and calculations provided by ENOI that 10 months following permanent cessation of power operations, the spent fuel has decayed beyond the minimum cooling time that would allow sufficient time (10 hours) to mitigate an SFP drain down in the adiabatic case. Accordingly, if a cyber-attack were to result in the draining of the SFP, the consequences of a cyber-attack 10 months after permanent shutdown would be much lower than while the plant was operating or the fuel in the SPF was not as cool.

Based on its review of ENOI's submissions, the NRC staff concludes that ENOI's request to remove the existing cyber security license condition from Pilgrim Renewed Facility License DPR-35 is acceptable and consistent with maintaining adequate protection of the public health and safety and the common defense and security.

3.3 Revision to License Condition Paragraph 3.G

By letter dated April 25, 2019, ENOI proposed to modify Paragraph 3.G of Renewed Facility License No. DPR-35 to remove the license condition requiring the licensee to fully implement and maintain in effect all provisions of the NRC-approved CSP.

The license condition in Paragraph 3.G of Renewed Facility License No. DPR-35, for Pilgrim is modified to delete the following statement:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 236, as supplemented by a change approved by Amendment Nos. 238, 241, 244, and 247.

This modification will take effect 10 months following the permanent cessation of power operations.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC notified the Commonwealth of Massachusetts official of the proposed amendment on November 12, 2019. The Commonwealth official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment relates solely to safeguards matters and does not involve any significant construction impacts. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on July 16, 2019 (84 FR 33986). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(12). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. Coker, NSIR/DPCP/CSB

Date: January 2, 2020

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 NO. 252 TO RENEWED FACILITY LICENSE RE: REMOVE CYBER SECURITY
 PLAN LICENSE CONDITION (EPID L-2019-LLA-0098) DATED
 JANUARY 2, 2020.

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