

NUCLEAR REGULATORY COMMISSION

Docket No. 50-293

Holtec Decommissioning International, LLC

Pilgrim Nuclear Power Station

Exemption

I. Background.

By letter dated November 10, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15328A053), Entergy Nuclear Operations, Inc. (ENOI), submitted a notification to the U.S. Nuclear Regulatory Commission (NRC) indicating that it would permanently shut down Pilgrim Nuclear Power Station (Pilgrim) no later than June 1, 2019. By letter dated June 10, 2019 (ADAMS Accession No. ML19161A033), ENOI submitted to the NRC a certification in accordance with § 50.82(a)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR), stating that Pilgrim permanently ceased power operations on May 31, 2019, and that as of June 9, 2019, all fuel had been permanently removed from the Pilgrim reactor vessel and placed in the spent fuel pool. Accordingly, pursuant to 10 CFR 50.82(a)(2), the Pilgrim renewed facility operating license no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel. By letter dated November 16, 2018 (ADAMS Accession No. ML18320A036), ENOI submitted the updated Pilgrim spent fuel management plan (SFMP) pursuant to 10 CFR 50.54(bb) and preliminary decommissioning cost estimate (DCE). By letter dated November 16, 2018 (ADAMS Accession No. ML18320A034), as supplemented by letter dated January 9, 2019 (ADAMS Accession No. ML19015A020) and letter dated July 29, 2019 (ADAMS Accession No. ML19210E470), ENOI submitted a post-shutdown decommissioning activities report (PSDAR) and the site-specific DCE for Pilgrim.

By letter dated November 16, 2018 (ADAMS Accession No. ML18320A031), ENOI, on behalf of itself and Entergy Nuclear Generation Company (ENGCO) (to be known as Holtec Pilgrim, LLC (Holtec Pilgrim)), Holtec International (Holtec), and Holtec Decommissioning International (HDI) submitted a license transfer application (LTA) requesting that the NRC consent to the direct transfer of ENOI's operating authority to HDI and the indirect transfer of control of the Pilgrim Renewed Facility Operating License and the General License for the Pilgrim Independent Spent Fuel Storage Installation (ISFSI) to Holtec. By letter dated November 16, 2018 (ADAMS Accession No. ML18320A040), HDI submitted a "Notification of Revised Post-Shutdown Decommissioning Activities Report and Revised Site-Specific Decommissioning Cost Estimate for Pilgrim Nuclear Power Station" (revised PSDAR), to notify the NRC of changes to accelerate the schedule for the prompt decommissioning (i.e., the DECON method for decommissioning) of Pilgrim and unrestricted release of all portions of the site (excluding the ISFSI) within 8 years after the license transfer.

Under the proposed transfers, Holtec Pilgrim will own the Pilgrim nuclear facility and will have responsibility for Pilgrim as its licensed owner. Holtec Pilgrim will enter into an agreement for decommissioning services with HDI, with HDI acting as Holtec Pilgrim's agent and with Holtec Pilgrim paying for all HDI expenses related to decommissioning, spent fuel management, and site restoration. Accordingly, HDI will become the licensed operator for decommissioning.

II. Request/Action.

The requested exemption from 10 CFR 50.82(a)(8)(i)(A) would permit Holtec Pilgrim and HDI to use funds from the Pilgrim Decommissioning Trust Fund (DTF) for spent fuel management and site restoration activities in accordance with HDI's site-specific DCE for Pilgrim. HDI submitted a revised site-specific DCE for Pilgrim by letter dated November 16, 2018, as part of the revised PSDAR. A similar exemption request from Entergy

was approved by the NRC for Pilgrim by letter dated July 22, 2019 (ADAMS Accession No. ML19162A334).

The 10 CFR 50.82(a)(8)(i)(A) requirement restricts the use of DTF withdrawals to expenses for legitimate decommissioning activities consistent with the definition of decommissioning that appears in 10 CFR 50.2. The definition of “decommission” in 10 CFR 50.2 reads as follows:

to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

- (1) Release of the property for unrestricted use and termination of the license;
- or
- (2) Release of the property under restricted conditions and termination of the license.

This definition does not include activities associated with spent fuel management or site restoration activities. Therefore, an exemption from 10 CFR 50.82(a)(8)(i)(A) is needed to allow Holtec Pilgrim and HDI to use funds from the DTF for spent fuel management and site restoration activities.

Similar to 10 CFR 50.82(a)(8)(i)(A), provisions of 10 CFR 50.75(h)(1)(iv) and (h)(2) dictate that with certain exceptions, disbursements from nuclear decommissioning trusts “are restricted to decommissioning expenses.” However, in accordance with 10 CFR 50.75(h)(5), these provisions do not apply to “any licensee that as of December 24, 2003, has existing license conditions relating to decommissioning trust agreements, so long as the licensee does not elect to amend those license conditions.” The operating license for Pilgrim included “existing license conditions relating to decommissioning trust agreements” on December 24, 2003, and as such, Pilgrim is exempt from the provisions of sections (h)(1) through (h)(3) of 10 CFR 50.75, pursuant to the terms of 10 CFR 50.75(h)(5).

III. Discussion.

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 (1) when the exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security; and (2) when any of the special circumstances listed in 10 CFR 50.12(a)(2) are present. These special circumstances include, among other things:

(a) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule; and

(b) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated.

A. Authorized by Law

The requested exemption from 10 CFR 50.82(a)(8)(i)(A) would allow Holtec Pilgrim and HDI to use a portion of the funds from the DTF for spent fuel management and site restoration activities at Pilgrim in the same manner that withdrawals are made under 10 CFR 50.82(a)(8) for radiological decommissioning activities. As stated above, 10 CFR 50.12 allows the NRC to grant exemptions from the requirements of 10 CFR Part 50 when the exemptions are authorized by law. The NRC staff has determined, as explained further below, that there is reasonable assurance of adequate funding for radiological decommissioning because the Applicants' use of the DTF for activities associated with spent fuel management and site restoration will not negatively impact the availability of funding for radiological decommissioning. Accordingly, the exemption is authorized by law because granting the licensee's proposed exemption will not

result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

B. No Undue Risk to Public Health and Safety

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A) is to provide reasonable assurance that adequate funds will be available for the radiological decommissioning of power reactors and license termination. As explained in further detail in Section D below, based on NRC staff's review of HDI's revised site-specific DCE and the staff's independent cash flow analysis contained in Attachment 1 to the NRC staff's safety evaluation for the associated LTA (ADAMS Accession No. ML19170A250), the NRC staff finds that the use of the Pilgrim DTF for spent fuel management and site restoration activities at Pilgrim will not adversely impact Holtec Pilgrim and HDI's ability to terminate the Pilgrim license (*i.e.*, complete radiological decommissioning) as planned, consistent with the schedule and costs contained in the revised PSDAR.

Furthermore, withdrawals from the DTF for spent fuel management and site restoration are still constrained by the provisions of 10 CFR 50.82(a)(8)(i)(B) – (C) and are reviewable under the annual reporting requirements of 10 CFR 50.82(a)(8)(v) – (vii).

There are no new accident precursors created by using the DTF in the proposed manner. Thus, the probability of postulated accidents is not increased. Also, based on the above, the consequences of postulated accidents are not increased. No changes are being made in the types or amounts of effluents that may be released offsite. There is no significant increase in occupational or public radiation exposure. Therefore, the requested exemption will not present an undue risk to the public health and safety.

C. Consistent with the Common Defense and Security

The requested exemption would allow Holtec Pilgrim and HDI to use funds from the Pilgrim DTF for spent fuel management and site restoration activities at Pilgrim. Spent fuel management under 10 CFR 50.54(bb) is an integral part of the planned decommissioning and

license termination process and will not adversely affect Holtec Pilgrim and HDI's ability to physically secure the site or protect special nuclear material. This change to enable the use of a portion of the funds from the DTF for spent fuel management and site restoration activities has no relation to security issues. Therefore, the common defense and security is not impacted by the requested exemption.

D. Special Circumstances

Special circumstances, in accordance with 10 CFR 50.12(a)(2)(ii), are present whenever application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the regulation.

The underlying purpose of 10 CFR 50.82(a)(8)(i)(A), which restricts withdrawals from DTFs to expenses for radiological decommissioning activities, is to provide reasonable assurance that adequate funds will be available for radiological decommissioning of power reactors and license termination. Strict application of this requirement would prohibit the withdrawal of funds from the Pilgrim DTF for spent fuel management and site restoration activities, until final radiological decommissioning at Pilgrim has been completed.

ENOI's March 28, 2019, annual report (ADAMS Accession No. ML19087A318) on the status of decommissioning funding for Pilgrim reports a DTF balance of approximately \$1.028 billion as of December 31, 2018, and approximately \$1.043 billion as of February 28, 2019. The cash flow analysis in Table 1 of the November 16, 2018, application is based on a beginning DTF balance of \$1.030 billion (following closure of the equity sale in 2019).¹ HDI states that this beginning DTF balance reflects the fund value post-closure of the asset sale. Furthermore, the application states that the 2019 costs include estimated pre-closure and post-closure costs. In the NRC staff's analysis provided in its safety evaluation for

¹ The terms of the Equity Purchase and Sales Agreement describes the after-tax market value of the DTF must be no less than \$1.030 billion at time of transaction closing.

the LTA, the staff used the opening DTF balance of \$1.030 billion as the money available to cover radiological decommissioning, spent fuel management, and site restoration costs.

The analysis in the November 16, 2018 revised PSDAR, projects the total radiological decommissioning cost of Pilgrim to be approximately \$593 million in 2018 dollars which is lower than the 10 CFR 50.75(c) minimum formula amount of approximately \$633 million. The revised PSDAR estimated decommissioning costs are consistent with the estimated costs for radiological decommissioning, including ISFSI decommissioning costs, provided in the November 16, 2018 request for exemptions. However, the LTA and the exemption request did not provide any explanation for the difference in funding levels for radiological decommissioning costs between the site-specific DCE and the 10 CFR 50.75(c) minimum formula amount. Therefore, the staff sought supplemental information from the Applicants in a request for additional information (RAI) dated July 26, 2019, (ADAMS Accession No. ML19207B366). The RAI requested, among other things, that the Applicants provide justification for using a radiological decommissioning cost estimate value that is less than the 10 CFR 50.75(c) minimum formula amount.

On July 29, 2019 (ADAMS Accession No. ML19210E470), HDI provided its justification, stating that the HDI site-specific DCE is a more reliable and precise estimate of decommissioning cost because it is based on Pilgrim-specific plant data and historical information, actual site conditions, regulatory requirements applicable to Pilgrim, and actual pricing information, as compared to the 10 CFR 50.75(c) minimum formula amount, which is based on generic inputs. Additionally, in both the November 16, 2018 application and the July 29, 2019 supplement, HDI states that its site-specific DCE was reviewed against the estimates of costs associated with license termination (radiological decommissioning) in NUREG/CR-6174, "Revised Analyses of Decommissioning for the Reference Boiling Water Reactor Power Station" (ADAMS Accession No. ML14008A186), benchmarked against nine comparable decommissioning projects, and compared with costs from similar activities at seven

boiling water reactors. Accordingly, as part of its review, the NRC staff compared the Pilgrim site-specific radiological decommissioning costs with the estimated activities of the four periods associated with the DECON decommissioning method as outlined in NUREG/CR-6174:

- 1) Pre-shutdown planning/engineering and regulatory reviews,
- 2) Plant deactivation and preparation for storage,
- 3) A period of plant safe storage with concurrent operations in the spent fuel pool until the pool inventory is zero, and
- 4) Decontamination and dismantlement of the radioactive portions of the plant, leading to license termination.

The NRC staff also compared the Pilgrim site-specific estimated radiological decommissioning costs of approximately \$593 million with the site-specific costs of similar decommissioning projects.

Based on the review of the Pilgrim site-specific radiological decommissioning costs of approximately \$593 million, as compared to NUREG/CR-6174, the staff concludes that HDI's method for developing the Pilgrim site-specific radiological decommissioning cost estimate is reasonable. Further, when compared to radiological decommissioning costs associated with similar decommissioning projects, the staff finds that the HDI's Pilgrim site-specific radiological decommissioning costs of approximately \$593 million is reasonable.

As such, the staff used the value of approximately \$593 million for radiological decommissioning costs when it conducted its independent cash flow analysis. As allowed by 10 CFR 50.75(e)(1)(ii), the staff began its cost analysis using a 2% real rate of return on annual balances. In its application dated November 16, 2018, HDI states they also used a 2% real rate of return. However, in Table 1 of the November 16, 2018, application, HDI noted that the Year Ending DTF Balance is after-taxes. Therefore, in its cost analysis, the staff found that Table 1 reflects an actual annual real rate of return of 1.42%. The staff notes that this is conservative to the 2% annual real rate of return allowed by 10 CFR 50.75(e)(1)(ii). To be consistent in

validating HDI's site-specific DCE, the staff used the more conservative 1.42% annual real rate of return. The staff's independent cash flow analysis is contained in Attachment 1 to the NRC staff's safety evaluation for the associated LTA.

As noted above, HDI's site-specific DCE relies on estimated radiological decommissioning costs of approximately \$593 million, which is lower than the 10 CFR 50.75(c) minimum formula amount of approximately \$633 million. In its RAI dated July 26, 2019, the staff requested a justification for this lower amount and, in case the Applicants' failed to provide sufficient justification, the staff also requested that the Applicants provide a revised decommissioning cash flow analysis using the higher minimum formula amount of \$633,267,558. In Attachment 1 of the July 29, 2019, supplement, HDI provided the requested revised cash flow analysis. Although the staff completed a separate, independent cash flow analysis to validate this revised cash flow analysis, ultimately, as noted above, the staff determined that HDI's site-specific DCE, which uses \$592,553,000 for the estimated site-specific radiological decommissioning costs for Pilgrim, is reasonable and sufficiently justified.

Based on its evaluation above and the cash flow analysis contained in Attachment 1 to the NRC staff's safety evaluation for the associated LTA, the staff finds that the funds in the DTF are expected to be available and sufficient to cover the estimated costs of approximately \$593 million for the radiological decommissioning of the facility (including the ISFSI). Therefore, the NRC staff finds that HDI has provided reasonable assurance that adequate funds will be available for the radiological decommissioning of Pilgrim, even with the disbursement of funds from the DTF for spent fuel management and site restoration activities. Consequently, the NRC staff concludes that application of the 10 CFR 50.82(a)(8)(i)(A) requirement that funds from the DTF only be used for radiological decommissioning activities and not for spent fuel management and site restoration activities is not necessary to achieve the underlying purpose of the rule; thus, special circumstances are present supporting approval of the exemption request.

By granting the exemption to 10 CFR 50.82(a)(8)(i)(A), withdrawals from the DTF for spent fuel management and site restoration activities, consistent with the licensee's submittal dated November 16, 2018, are authorized. As stated previously, the NRC staff has determined that there are sufficient funds in the DTF to complete radiological decommissioning activities as well as to conduct spent fuel management and site restoration activities consistent with the revised PSDAR, DCE, SFMP, and the November 16, 2018, exemption request. Pursuant to the requirements in 10 CFR 50.82(a)(8)(v) and (vii), licensees are required to monitor and annually report to the NRC the status of the DTF and the licensee's funding for managing spent fuel. These reports provide the NRC staff with awareness of, and the ability to take action on, any actual or potential funding deficiencies. Additionally, 10 CFR 50.82(a)(8)(vi) requires that the annual financial assurance status report must include additional financial assurance to cover the estimated cost of completion if the sum of the balance of any remaining decommissioning funds, plus earnings on such funds calculated at not greater than a 2% real rate of return, together with the amount provided by other financial assurance methods being relied upon, does not cover the estimated cost to complete the decommissioning. The requested exemption would not allow the withdrawal of funds from the DTF for any other purpose that is not currently authorized in the regulations without prior approval from the NRC.

Special circumstances, in accordance with 10 CFR 50.12(a)(2)(iii), are present whenever compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. HDI states that the DTF contains funds in excess of the estimated costs of radiological decommissioning and that these excess funds are needed for spent fuel management and site restoration activities. The NRC does not preclude the use of funds from the decommissioning trust in excess of those needed for radiological decommissioning for other purposes, such as spent fuel management or site restoration activities (see NRC Regulatory Issue Summary 2001-07, Rev. 1, "10 CFR 50.75 Reporting and

Recordkeeping for Decommissioning Planning,” dated January 8, 2009 (ADAMS Accession No. ML083440158), and Regulatory Guide 1.184, Revision 1, “Decommissioning of Nuclear Power Reactors,” dated October 2013 (ADAMS Accession No. ML13144A840)). Preventing access to those excess funds in the DTF because spent fuel management and site restoration activities are not associated with radiological decommissioning would create an unnecessary financial burden without any corresponding safety benefit. The adequacy of the DTF to cover the cost of activities associated with spent fuel management and site restoration, in addition to radiological decommissioning, is supported by the site-specific DCE. If the licensee cannot use its DTF for spent fuel management and site restoration activities, it would need to obtain additional funding that would not be recoverable from the DTF, or the licensee would have to modify its decommissioning approach and methods. The NRC staff concludes that either outcome would impose an unnecessary and undue burden significantly in excess of that contemplated when 10 CFR 50.82(a)(8)(i)(A) was adopted.

The underlying purposes of 10 CFR 50.82(a)(8)(i)(A) would be achieved by allowing Holtec Pilgrim and HDI to use a portion of the Pilgrim DTF for spent fuel management and site restoration activities, and compliance with the regulation would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulations were adopted. Thus, the special circumstances required by 10 CFR 50.12(a)(2)(ii) and 10 CFR 50.12(a)(2)(iii) exist and support the approval of the requested exemption.

E. Environmental Considerations

In accordance with 10 CFR 51.31(a), the Commission has determined that the granting of the exemption will not have a significant effect on the quality of the human environment (see Environmental Assessment and Finding of No Significant Impact published in the Federal Register on August 20, 2019 (84 FR 43186)).

IV. Conclusions.

In consideration of the above, the NRC staff finds that the proposed exemption confirms the adequacy of funding in the Pilgrim DTF to complete radiological decommissioning of the site and to terminate the license and also to cover estimated spent fuel management and site restoration activities. The NRC staff also finds that there is reasonable assurance that adequate funds are available in the DTF to complete all activities associated with radiological decommissioning.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants Holtec Pilgrim and HDI an exemption from 10 CFR 50.82(a)(8)(i)(A) to allow them to use of a portion of the funds from the Pilgrim DTF for spent fuel management and site restoration activities consistent with the revised PSDAR and site-specific DCE dated November 16, 2018.

These exemptions are effective upon the NRC's issuance of a conforming license amendment reflecting HDI and Holtec Pilgrim as the licensees for Pilgrim, following NRC approval of the license transfer application and the Applicants' completion of the transaction.

Dated at Rockville, Maryland, this 22nd day of August, 2019.

For the Nuclear Regulatory Commission.

/RA/

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