



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO REQUEST FOR DIRECT AND INDIRECT TRANSFERS OF CONTROL OF  
RENEWED FACILITY OPERATING LICENSE NO. DPR-35 AND THE GENERAL LICENSE  
FOR THE INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
FROM ENTERGY NUCLEAR GENERATION COMPANY AND  
ENTERGY NUCLEAR OPERATIONS, INC.  
TO HOLTEC PILGRIM, LLC AND HOLTEC DECOMMISSIONING INTERNATIONAL, LLC  
PILGRIM NUCLEAR POWER STATION  
DOCKET NOS. 50-293 AND 72-1044

1.0 INTRODUCTION

By application dated November 16, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18320A031), as supplemented by letters dated November 16, 2018, April 17, and July 29, 2019 (ADAMS Accession Nos. ML18320A040, ML19109A177, and ML19210E470, respectively), Entergy Nuclear Operations, Inc. (ENOI), on behalf of itself and Entergy Nuclear Generation Company (ENGCO) (to be known as Holtec Pilgrim, LLC), Holtec International (Holtec), and Holtec Decommissioning International, LLC (HDI), (hereinafter referred to as "Applicants"), requested that the U.S. Nuclear Regulatory Commission (NRC) consent to the following actions:

- (1) the direct transfer of ENOI's operating authority to HDI, and
- (2) the indirect transfer of control of the Renewed Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station (Pilgrim), as well as the general license for the Pilgrim Independent Spent Fuel Storage Installation (ISFSI), to Holtec.

The Applicants also requested that the NRC approve a conforming administrative amendment to the facility licenses, to reflect the proposed direct transfer of the licenses from ENOI to HDI and the planned name change for ENGCO, from ENGCO to Holtec Pilgrim, LLC (Holtec Pilgrim). The supplements dated April 17, and July 29, 2019, provided additional information that clarified the application and did not expand the scope of the application as originally noticed in the *Federal Register* (FR) on January 31, 2019 (84 FR 816).

## 2.0 REGULATORY EVALUATION

### 2.1 Background

By letter dated November 10, 2015 (ADAMS Accession No. ML15328A053), ENOI notified the NRC of its intent to permanently cease operations at Pilgrim no later than June 1, 2019. By letter dated June 10, 2019 (ADAMS Accession No. ML19161A033), ENOI certified to the NRC that power operations ceased at Pilgrim on May 31, 2019, and fuel was permanently removed from the reactor vessel and placed in the spent fuel pool (SFP) on June 9, 2019. Pursuant to 10 CFR 50.82(a)(2), upon docketing of the certifications of permanent cessation of power operations and permanent removal of fuel from the reactor vessel in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.82(a)(1)(i) and (ii), and the license under 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel.

By letter dated November 16, 2018, ENOI submitted the Pilgrim Post-Shutdown Decommissioning Activities Report (PSDAR) (ADAMS Accession No. ML18320A034), which describes ENOI's plan to utilize the SAFSTOR method for decommissioning. In accordance with ENOI's SAFSTOR decommissioning approach, license termination would occur in 2079 and site restoration would be completed by 2080. The Applicants stated that the license transfer is being sought to effectuate a transaction under which Holtec Pilgrim will own the Pilgrim facility, including the ISFSI, pursuant to the terms of the Equity Purchase and Sale Agreement (EPSA), and HDI will assume the licensed responsibility for maintaining and decommissioning the facility, as the decommissioning operator of Pilgrim. The Applicants further stated that the transfer is desirable, because it will result in the prompt decommissioning of Pilgrim, consistent with the DECON method for decommissioning, as described in HDI's revised PSDAR, dated November 16, 2018 (ADAMS Accession No. ML18320A040). In accordance with HDI's DECON decommissioning approach, the release of all portions of the site other than the ISFSI will occur on an accelerated schedule, within approximately 8 years of the license transfer.

### 2.2 Pilgrim License Transfer and Equity Sale

According to the Applicants, approval of both the direct and indirect transfers is being sought pursuant to a transaction under which 100 percent of the equity interests in ENGCO will be transferred to Holtec based upon the terms of an EPSA, dated July 30, 2018 (the nonproprietary, publicly available version can be found as Attachment B at ADAMS Accession No. ML18320A031). Holtec Pilgrim will own the Pilgrim nuclear facility pursuant to the terms of the EPSA, 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.

HDI will contract with Comprehensive Decommissioning International, LLC (CDI), a company jointly formed and owned by Holtec and SNC-Lavalin Group, as the decommissioning general contractor. CDI will perform day-to-day activities at the site, including decommissioning activities, subject to HDI's direct oversight and control as the licensed decommissioning operator. Pursuant to the terms of the EPSA, closing of the transaction cannot occur until the satisfaction of several conditions, including ENOI's certification pursuant to 10 CFR 50.82(a)(1)(ii) that fuel has been permanently removed from the reactor vessel, which,

as noted above, was submitted to the NRC on June 10, 2019, shortly after permanent cessation of operations. Attachments 1A and 1B, "Corporate Structure - Pilgrim License Transfer and Equity Sale," of the application include simplified organization charts reflecting the current and post-transfer organizations.

### 2.3 Revised Post-Shutdown Decommissioning Activities Report

In support of its license transfer application, Holtec submitted to the NRC a revised PSDAR for Pilgrim on November 16, 2018 (ADAMS Accession No. ML18320A040), to notify the NRC of changes in the actions and schedules previously described in the ENOI PSDAR. The revised PSDAR updates the information previously provided by ENOI on November 16, 2018 (ADAMS Accession No. ML18320A034), as required by 10 CFR 50.82(a)(7). The revised PSDAR is based and contingent upon NRC approval of this license transfer, and ENGCO being acquired by Holtec, pursuant to the terms of the EPSA. On December 17, 2018 (ADAMS Accession No. ML18333A240), the NRC notified ENOI that the staff is treating the revised PSDAR submittal, dated November 16, 2018, as a supplement to the Pilgrim license transfer application, also dated November 16, 2018, until such time as the NRC makes a regulatory decision on the Pilgrim license transfer application. The NRC staff reviewed the revised PSDAR only to determine whether Holtec Pilgrim and HDI are financially and technically qualified to hold the license for Pilgrim and the general license for the Pilgrim ISFSI, as described in the application, and to engage in the proposed maintenance and decommissioning activities associated with the Pilgrim site.

### 2.4 Regulations and Guidance

As described in the application, the proposed transaction constitutes a direct transfer of authority to conduct licensed activities at Pilgrim to HDI and the indirect transfer of control of the Renewed Facility Operating License No. DPR-35 for Pilgrim as well as the general license for the Pilgrim ISFSI, to Holtec, which requires prior NRC approval. For transfers of control of a license, the NRC must find that the transfer of the license is otherwise consistent with the applicable provisions of the law, NRC regulations, and orders issued by the Commission.

The request for approval of the transfers of the Pilgrim licenses was made pursuant to 10 CFR 50.80(a), which states, in part:

No license for a production or utilization facility..., or any right thereunder, shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission gives its consent in writing.

In addition, the regulations in 10 CFR 50.80(b) and (c) apply. The regulation at 10 CFR 50.80(b) states, in part:

- (1) An application for transfer of a license shall include:
  - (i) For a construction permit or operating license under this part, as much of the information described in §§ 50.33 and 50.34 of this part with respect to the identity and technical and financial qualifications of the proposed transferee as would be required by those sections if the application were for an initial license.

In addition, 10 CFR 50.80(c) states, in part:

...the Commission will approve an application for the transfer of a license, if the Commission determines: (1) That the proposed transferee is qualified to be the holder of the license; and (2) That transfer of the license is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

In 10 CFR 50.40, "Common Standards," the NRC states, in part:

In determining that a construction permit or operating license in this part...will be issued to an applicant, the Commission will be guided by the following considerations:

...  
(b) The applicant for a construction permit, operating license...is technically and financially qualified to engage in the proposed activities in accordance with the regulations in this chapter.

In 10 CFR 50.34(b)(6), the NRC requires that applicants provide certain information on facility operation. It requires, in part, that the information provided by the applicants include the following:

- (i) The applicant's organizational structure, allocations or responsibilities and authorities, and personnel qualification requirements.
- (ii) Managerial and administrative controls to be used to assure safe operation.

In 10 CFR 50.34(b)(7), the NRC requires applicants for an operating license to provide the following information in the final safety analysis report:

The technical qualifications of the applicant to engage in the proposed activities in accordance with the regulations in this chapter.

With respect to the requested conforming amendment, 10 CFR 50.90, "Application for Amendment of License, Construction Permit, or Early Site Permit," states, in part:

Whenever a holder of a license, including a construction permit and operating license under this part..., desires to amend the license or permit, application for an amendment must be filed with the Commission..., fully describing the changes desired, and following as far as applicable, the form prescribed for original applications.

Furthermore, 10 CFR 2.1315 states the following, in part:

- (a) Unless otherwise determined by the Commission with regard to a specific application, the Commission has determined that any amendment to the license of a utilization facility or the license of an Independent Spent Fuel Storage Installation which does no more than conform the license to reflect the transfer action, involves respectively, "no significant hazards consideration"

- (b) Where administrative license amendments are necessary to reflect an approved transfer, such amendments will be included in the order that approves the transfer.

In 10 CFR 50.33(a) through (d), the NRC requires applicants to provide information including the name of the applicant, address of the applicant, description of the business or occupation, corporate structure of the applicant, citizenship of the applicant, and foreign ownership and control of the applicant, as applicable.

In addition, 10 CFR 50.33(f) states, in part:

Except for an electric utility applicant for a license to operate a utilization facility of the type described in § 50.21(b) or § 50.22, [each application shall state] information sufficient to demonstrate to the Commission the financial qualification of the applicant to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought.

The NRC staff applies guidance in NUREG-1577, Revision 1, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," issued February 1999 (ADAMS Accession No. ML013330264), to evaluate the financial qualifications of applicants to carry out the activities for which the permit or license is sought.

In 10 CFR 50.54(bb), the NRC requires, in part, that a licensee submit, for NRC review and preliminary approval, the program by which the licensee intends to manage and provide funding for the management of all irradiated fuel, also known as spent fuel, at the reactor following permanent cessation of operation of the reactor until title to the spent fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository.

In accordance with 10 CFR 50.2, "Definitions," the term "decommission" means 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.

In 10 CFR 50.33(k)(1), the NRC requires that applicants provide information, in the form of a report, as described in 10 CFR 50.75, "Reporting and Recordkeeping for Decommissioning Planning," indicating how reasonable assurance will be provided that funds will be available to decommission the facility.

10 CFR 50.75 specifies how a licensee will provide reasonable assurance that funds will be available for the decommissioning process. Specifically, 10 CFR 50.75(b) requires that each power reactor applicant for an operating license submit a decommissioning report, as required by 10 CFR 50.33(k). 10 CFR 50.75(b) also requires decommissioning financial assurance be provided in an amount not less than the minimum formula amount in 50.75(c). In 10 CFR 50.75(e), the NRC includes the methods acceptable to the agency for providing decommissioning financial assurance. Finally, 10 CFR 50.75(h) provides additional requirements on the management of decommissioning trust funds (DTFs).

In 10 CFR 50.82(a)(8)(i), the NRC states that licensees may use DTFs under the following conditions:

- (A) The withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in § 50.2;
- (B) The expenditure would not reduce the value of the decommissioning trust below an amount necessary to place and maintain the reactor in a safe storage condition if unforeseen conditions or expenses arise and;
- (C) The withdrawals would not inhibit the ability of the licensee to complete funding of any shortfalls in the decommissioning trust needed to ensure the availability of funds to ultimately release the site and terminate the license.

In 10 CFR 50.82(a)(8)(v), the NRC requires power reactor licensees that have permanently ceased operations to provide to the NRC annually, by March 31, a decommissioning financial assurance status report.

In addition, 10 CFR 50.82(a)(8)(vii) provides, in part, for the licensee's annual submittal to the NRC, a report on the status of its funding for managing spent fuel.

In addressing foreign ownership, control, or domination (FOCD) issues, Section 103d of the Atomic Energy Act of 1954, as amended (AEA), provides for the following, in relevant part:

No license may be issued to...any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

The NRC's regulation in 10 CFR 50.38, "Ineligibility of Certain Applicants," is the regulatory provision that implements the FOCD provision of the AEA. Specifically, 10 CFR 50.38 states, in part:

[A]ny corporation, or other entity which the Commission knows or has reason to believe is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, shall be ineligible to apply for and obtain a license.

The NRC staff evaluates license transfer applications in a manner consistent with the guidance provided in the "Final Standard Review Plan on Foreign Ownership, Control, or Domination," as published in the *Federal Register* on September 28, 1999 (64 FR 52357), to determine whether the applicant is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

The NRC staff also reviews information that relates to nuclear onsite property damage insurance requirements under 10 CFR 50.54(w) and the Price-Anderson insurance and indemnity requirements under Section 170 of the AEA and 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements."

With respect to the transfer of control of a license for an ISFSI, 10 CFR 72.50(a) states as follows:

No license or any part included in a license issued under this part for an ISFSI or MRS [monitored retrievable storage facility] shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission gives its consent in writing.

The NRC staff considered the following regulatory guidance in its review of the proposed transfer:

- NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Chapter 13, "Conduct of Operations," Section 13.1.1, "Management and Technical Support Organization," Revision 6, issued August 2016 (ADAMS Accession No. ML15005A449), provides guidance for the review of changes to the technical organization or personnel qualifications proposed as a result of an operating license transfer. Specifically, Section I.4, "Review of Operating License Transfers," states that the applicant for transfer of an operating license should provide a description of the organization to support plant operations, which should include (1) organizational charts of the corporate-level management and technical support organizations, emphasizing the changes to be made as a result of the transfer, (2) the relationship of the nuclear-oriented parts of the organization to the rest of the corporate organization, and (3) description of the specific provisions which have been made for uninterrupted technical support for operations.
- NUREG-0800, Chapter 13, Section 13.1.2–13.1.3, "Operating Organization," Revision 7, issued August 2017 (ADAMS Accession No. ML15007A296), provides guidance for the review of a changes to the operating organization proposed as a result of an operating license transfer.
- NUREG-1713, "Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors" (ADAMS Accession No. ML043510113), provides a list of items for which decommissioning trust funds can be used. The bases for NUREG-1713 can be found in two NUREGs that reference decommissioning at a pressurized water reactor and a boiling water reactor: NUREG/CR-5884, "Revised Analyses of Decommissioning for the Reference Pressurized Water Reactor Power Station (ADAMS Accession No. ML14008A187) and NUREG/CR-6174, "Revised Analyses of Decommissioning for the Reference Boiling Water Reactor Power Station" (ADAMS Accession No. ML14008A186). The Pilgrim facility employed a General Electric boiling-water reactor nuclear steam supply system. As such, NUREG/CR-6174 applies.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Financial Qualifications

In complying with the general corporate information requirements of 10 CFR 50.33, "Contents of Applications; General Information" (sections a through d), the Applicants state that Holtec Pilgrim (the proposed licensed owner after the license transfer and equity sale) will be a direct, wholly owned subsidiary of Nuclear Asset Management Company, LLC, (NAMCo), which will be a direct, wholly owned subsidiary of Holtec Power, Inc. (Holtec Power). HDI will be a direct,

wholly owned subsidiary of Holtec Power, and Holtec Power will be a direct, wholly owned subsidiary of Holtec. CDI, although jointly formed and owned by Holtec and SNC-Lavalin Group as previously discussed, will be the decommissioning general manager after the license transfer and equity sale and will have no direct or indirect ownership or licensing authority at Pilgrim.

Figures 1 and 2 of the application dated November 16, 2018, reflect the corporate ownership structure, including identification of the licensed owner and licensed operator, before and after the license transfer and equity sale. In summary, upon completion of the license transfer and equity sale transaction, Holtec Pilgrim will be the licensed owner of Pilgrim and HDI will be the licensed operator of Pilgrim.

The general corporate information required by 10 CFR 50.33(d)(3) includes identification of principal officers and directors of the Applicants, including those of Holtec, Holtec Power, NAMCo, Holtec Pilgrim, and HDI. Holtec will be the ultimate parent company of the proposed licensed entities. Holtec is a privately held corporation and is controlled by its Board of Directors, all of whom are U.S. citizens. It is owned by its shareholders as follows: (1) The Great Banyan Trust, 36.33-percent ownership interest, and (2) Multi-Decades Trust, 63.67-percent ownership interest. Dr. Krishna Singh of Holtec controls these trusts. As previously noted, by letter dated November 10, 2015, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), the current licensee, ENOI, stated that Pilgrim will permanently cease operations no later than June 1, 2019. On May 31, 2019, ENOI permanently ceased operations at Pilgrim. The current licensee, ENOI, submitted a letter dated June 10, 2019 (ADAMS Accession No. ML19161A033), certifying the permanent cessation of operations and permanent removal of fuel from the reactor vessel.

HDI (proposed licensed operator for decommissioning) will not be authorized under the facility license to operate or load fuel in the reactor pursuant to the terms of 10 CFR 50.82(a)(2) and will not conduct reactor operations contemplated by the financial qualifications provisions of 10 CFR 50.33(f)(2). Rather, all of HDI's licensed activities will involve possession of radioactive material in connection with maintaining the safe condition of the plant, radiological decommissioning of the Pilgrim site (including the ISFSI), license termination, and operational responsibilities associated with spent fuel management. Thus, following the proposed direct and indirect transfers, Holtec Pilgrim (the proposed licensed owner) will maintain the existing DTF and will be responsible for funding all the expenses associated with radiological decommissioning and operational costs for spent fuel management. Accordingly, as described in this safety evaluation, the NRC staff's review of HDI and Holtec Pilgrim's financial qualifications and decommissioning financial assurance pursuant to 10 CFR 50.33(f), 10 CFR 50.33(k)(1), 10 CFR 50.75, and 10 CFR 50.82(a), includes an analysis of the projected costs for decommissioning the facility and terminating the license, and managing spent fuel until the U.S. Department of Energy (DOE) takes title and possession of the fuel.

For a facility in decommissioning, a licensee is required to execute financial plans for spent fuel management under 10 CFR 50.54(bb) and report annually on the status of funding dedicated towards radiological decommissioning and spent fuel management under 10 CFR 50.82(a)(8)(v) to (vii).

As stated in the application, Holtec Pilgrim will provide the financial assurance required by 10 CFR 50.75, 10 CFR 50.82(a)(8)(vi), and 10 CFR 72.30(b) and (c) for decommissioning Pilgrim, including the ISFSI, using the prepayment method in accordance with 10 CFR 50.75(e)(1)(i) and 10 CFR 72.30, "Financial Assurance and Recordkeeping for Decommissioning." Holtec Pilgrim will retain the Pilgrim DTF, which, as of October 31, 2018,



contained \$1,051,722,466 (as documented in the Pilgrim Updated Spent Fuel Management Plan submitted by ENOI on November 16, 2018). Under the terms of the EPSA, the after-tax market value of the DTF must be no less than \$1.030 billion at closing, subject to an adjustment that will not impact Holtec Pilgrim's or HDI's financial qualifications, as discussed in the EPSA. Accordingly, staff's evaluation of the adequacy of the Applicants' financial qualifications considered the more conservative value of \$1.030 billion. Further analysis of the Applicants' decommissioning funding resources is provided in the next section.

### 3.2 Radiological Decommissioning

As noted above, pursuant to 10 CFR 50.2, "decommission" means 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. The existing DTF for Pilgrim was created in compliance with 10 CFR 50.75, and the funds within the trust were collected while the facility was operating. As described below, the NRC staff's review of decommissioning financial assurance assesses whether the Applicants have provided reasonable assurance that funds will be available to cover estimated costs for radiological decommissioning of Pilgrim and its ISFSI.

Separate from and in parallel with this application, the Applicants submitted the HDI revised PSDAR<sup>1</sup> reflecting plans for decommissioning and spent fuel management following the proposed transfer of the licenses. Specifically, the HDI revised PSDAR contains the following:

- a description of the planned decommissioning activities along with a schedule for their accomplishment;
- a discussion that provides the reasons for concluding that the environmental impacts associated with site-specific decommissioning activities will be bounded by previously issued environmental impact statements; and
- a site-specific decommissioning cost estimate (DCE), including the costs for projected spent fuel management, license termination, and site restoration.

The HDI revised PSDAR reflects HDI's plan to complete the immediate and accelerated decommissioning of the non-ISFSI portions of the Pilgrim site within approximately 8 years after the proposed transfer is approved. The ENOI PSDAR reflected the current licensee's decommissioning plan for Pilgrim to be completed by ENOI and ENGSC within a 60-year period using the SAFSTOR method. The HDI revised PSDAR also contains the most recent decommissioning cost estimate and spent fuel management plans pursuant to 10 CFR 50.82, "Termination of License."

Under the HDI revised PSDAR, as compared to the ENOI PSDAR, the proposed change in decommissioning method from SAFSTOR to DECON results in an approximate 50-year acceleration of the site closure, and a site-specific DCE that reflects reductions in license termination costs of approximately \$595 million, and an increase in spent fuel management costs of approximately \$81 million.

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<sup>1</sup> The staff notes that the NRC does not review the PSDAR for approval; however, for the purpose of this license transfer request, the staff relied on the revised PSDAR as a reference for the HDI's decommissioning plans and site-specific decommissioning cost estimate.

Following partial site release scheduled for 2025, and removal of spent fuel and GTCC waste from the site, HDI plans to decommission the ISFSI, terminate its NRC license, and release the site for unrestricted use in 2063. In accordance with the specific requirements of 10 CFR 72.30 for ISFSI decommissioning, the cost estimate for decommissioning the ISFSI reflects: 1) the cost of HDI's decommissioning contractor performing the decommissioning activities; 2) a contingency allowance of 25%; and 3) the cost of meeting the criteria for unrestricted use. The cost summary for decommissioning the ISFSI is presented in Appendix A of the HDI revised PSDAR.

As part of its review of the application, the staff reviewed the revised site-specific DCE for Pilgrim included with the HDI revised PSDAR to ensure that it contains the appropriate information. Pursuant to NUREG-1713, "Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors," for decommissioning planning purposes, this information includes:

- A description of the decommissioning cost estimating methodology
- A description of the overall decommissioning project annual expenses
- A summary decommissioning cost estimate by major activity and phase
- A schedule of the major decommissioning activities
- A summary of the radiological D&D management with support staff levels
- An estimate of the radioactive waste volume

NUREG-1713 also states that if the amount of the site-specific cost estimate is less than the certification formula amount, a licensee must provide adequate justification for the difference.

In its evaluation of HDI's site-specific DCE, the staff noted that the DCE relies on estimated Pilgrim site-specific radiological decommissioning costs of \$592,553,000, which is lower than the 10 CFR 50.75(c) minimum formula amount of \$633,267,558, as reported by ENOI in its March 28, 2019, decommissioning funding status report (ADAMS Accession No. ML19087A318). The application dated November 16, 2018, states that the required DTF value at closing (\$1.030 billion) exceeds the minimum financial assurance required by 10 CFR 50.75(b)—which, in turn, requires decommissioning financial assurance be provided in an amount not less than the minimum formula amount in 50.75(c).<sup>2</sup> However, the application 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 site-specific radiological decommissioning cost estimate value of \$592,553,000 that is less than the 10 CFR 50.75(c) minimum formula amount of \$633,267,558.

By letter dated July 29, 2019 (ADAMS Accession No. ML19210E470), the Applicants provided their justification for using a total site-specific radiological decommissioning cost estimate value that is less than the minimum formula amount. Specifically, HDI stated that the HDI site-specific DCE is a more reliable and precise estimate of decommissioning costs because it is based on

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<sup>2</sup> Throughout this SE, the staff refers to the amount specified in the table of minimum amounts in 10 CFR 50.75(c) as the 10 CFR 50.75(c) minimum formula amount.

Pilgrim site-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) formula amount, which is based on generic inputs. Additionally, in both the November 16, 2018, application and the July 29, 2019, supplement, the Applicants stated that the HDI Pilgrim site-specific DCE was reviewed against the estimates of costs associated with license termination (radiological decommissioning) in NUREG/CR-6174, benchmarked against nine comparable decommissioning projects, and compared with costs for similar radioactive decommissioning activities at seven boiling water reactors.

As part of its review of the Applicants' justification for relying on estimated site-specific radiological decommissioning costs of \$592,553,000, the 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, "Revised Analyses of Decommissioning for the Reference Boiling Water Reactor Power Station":

- 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 \$592,553,000 with the site-specific costs of comparable decommissioning projects.

Based on the review of the Pilgrim site-specific radiological decommissioning costs of \$592,553,000, as compared to NUREG/CR-6174, the staff concludes that the Applicants' 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 Applicants' Pilgrim site-specific radiological decommissioning costs of \$592,553,000 is reasonable.

Therefore, based on (1) its review of the Applicants' justification for relying on a site-specific DCE that is less than the minimum formula amount, (2) its review of the HDI site-specific DCE, in accordance with NUREG-1713 and NUREG/CR-6174, and (3) a comparison to the original ENOI PSDAR and site-specific DCE, the staff finds that HDI's site-specific DCE, which uses \$592,553,000 for the estimated site-specific radiological decommissioning costs for Pilgrim, is reasonable. As such, the staff used the value of \$592,553,000 for radiological decommissioning costs when it conducted its independent cash flow analysis, as described below.

### 3.2.1 Decommissioning Funding Assurance

ENOI's March 28, 2019, annual report 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),<sup>3</sup> as well as estimated costs for radiological decommissioning, spent fuel management, and site restoration of Pilgrim, all to be funded using the DTF. HDI stated that this beginning DTF balance reflects the fund value post-closure of the asset sale. Furthermore, the application states that the 2019 HDI costs include estimated pre-closure and post-closure costs.

In their application dated November 16, 2018, the Applicants provided financial projections for the duration of the Pilgrim decommissioning project, including the amount of the decommissioning trust funds in the DTF. The application also included a cash flow analysis that assumes a DTF balance of approximately \$1.030 billion, as well as estimated costs for radiological decommissioning, including the Pilgrim ISFSI (~\$592 million), spent fuel management (~\$501 million), and site restoration of Pilgrim (~\$40 million), all to be funded using the DTF. With respect to the adequacy of funding for the radiological decommissioning of Pilgrim and the Pilgrim ISFSI, the staff reviewed the application, including the HDI site-specific DCE for the facility, planned decommissioning activities, the opening DTF balance of \$1.030 billion, and projected trust growth. The staff used the opening DTF balance of \$1.030 billion based on the terms of the EPSA, which states that the after-tax market value of the DTF must be no less than \$1.030 billion at time of transaction closing. As discussed above, the staff used \$592,553,000 for radiological decommissioning costs. 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, the Applicants stated they also used a 2% real-rate of return. However, in Table 1 of the November 16, 2018, application, the Applicants noted that the Year Ending DTF Balance is after-taxes. Therefore, in its cost analysis, the staff found that Table 1 reflects an actual 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 the HDI's site-specific DCE, the staff used the more conservative 1.42% real-rate of return. These considerations were included in the staff's independent cash flow analysis, which is contained in Attachment 1 to this safety evaluation.

As noted above, HDI's site-specific DCE relies on estimated radiological decommissioning costs of \$592,553,000, which is lower than the 10 CFR 50.75(c) minimum formula amount of \$633,267,558. 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 minimum formula amount of \$633,267,558. In Attachment 1 of the July 29, 2019, supplement, the Applicants 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. Therefore, for purposes of this safety evaluation, the staff relies on the cash flow analysis in Attachment 1 to support its finding that the funds in the DTF are expected to be available and sufficient to cover the estimated costs of \$592,553,000 for the radiological decommissioning of the facility (including the ISFSI).

In Enclosure 2 of the November 16, 2018 application, pursuant to 10 CFR 50.12, "Specific exemptions," the Applicants requested an exemption from 10 CFR 50.82(a)(8)(i)(A) to allow Holtec Pilgrim and HDI to use of a portion of the funds from the Pilgrim DTF for the management of spent fuel and site restoration activities. The staff's analysis of this regulatory

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<sup>3</sup> 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.

exemption (ADAMS Accession No. ML19192A083) was performed separate from this safety evaluation and, on August 22, 2019, the staff approved the exemption request. This exemption is being issued simultaneously with this license transfer; it will only apply to Holtec Pilgrim and HDI after the Applicants have completed the license transfer transaction and the NRC has issued the conforming amendment reflecting the license transfers.

In its review of the exemption, the NRC staff concluded that reasonable assurance exists that adequate funds will be available in the DTF to complete radiological decommissioning. The NRC staff considered its findings from its evaluation of the exemption in its analysis of this proposed license transfer, which supports the NRC staff's conclusion that the Applicants' use of the DTF for activities associated with spent fuel management and site restoration, will not negatively impact availability of funding for radiological decommissioning. The NRC staff's independent cash flow analysis, as contained in Attachment 1 to this safety evaluation, supports these findings.

### 3.2.2 Radiological Decommissioning Conclusion

Based on this review, in consideration of the above analysis and the NRC staff's independent cash flow analysis in the Attachment 1 to this safety evaluation, the NRC staff finds that the Applicants have provided reasonable assurance of obtaining the funds necessary to cover estimated costs for decommissioning Pilgrim and its ISFSI in accordance with the requirements of 10 CFR 50.33(f), 10 CFR 50.33(k)(1), 10 CFR 50.75, and 10 CFR 50.82(a).

### 3.3 Spent Fuel Management

After the closing of the proposed transaction, Holtec Pilgrim will continue to hold title to the spent nuclear fuel at Pilgrim and will continue to maintain the DOE Standard Contract, including all rights and obligations under that contract (see Section 3.5, "Standard Contract for Disposal of Spent Nuclear Fuel," of this safety evaluation, for further discussion on this topic).

With regard to spent fuel removal from the Pilgrim site, HDI indicated in its PSDAR that its plan for spent fuel removal is consistent with ENOI's previously submitted spent fuel management plan (ADAMS Accession No. ML18320A036), as approved by the NRC staff (ADAMS Accession No ML19122A199), in that fuel is expected to be removed beginning in 2030. This plan remains dependent upon the DOE's ability to remove spent fuel from the site in a timely manner. According to the Pilgrim spent fuel management plan, assuming the DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority and that the DOE begins removing spent fuel from commercial facilities in 2025 with an annual capacity of 3,000 metric tons of uranium, spent fuel is projected to remain at the Pilgrim site for approximately 43 years after the termination of operations in 2019. Any delay in transfer of fuel to DOE or decrease in the rate of acceptance will correspondingly prolong the transfer process and result in spent fuel remaining at the site longer than anticipated. Accordingly, in Section 3.2 of Enclosure 1, "PNPS Site-Specific Decommissioning Cost Estimate," of HDI's Pilgrim PSDAR, HDI based its cost assumptions on fuel removal from Pilgrim in 2030 through 2062. The NRC staff accepts these assumptions with regard to the final disposition of Pilgrim spent fuel as DOE, according to the Nuclear Waste Policy Act of 1982, is authorized to ultimately enter into contracts with owners and generators of commercial spent nuclear fuel to begin taking title to (legal ownership of) spent nuclear fuel. Spent fuel storage operations will continue at the site, independent of decommissioning operations, until the transfer of the fuel to DOE is complete.

In its license transfer application, the Applicants provided their funding plan for spent fuel management costs, which included using excess DTFs for spent fuel management. The NRC staff discusses its review of the Applicants' funding plan for spent fuel management costs below.

### 3.3.1 Exemption To Use Decommissioning Trust Fund for Spent Fuel Management

Because Holtec Pilgrim and HDI will rely on the DTF to provide funding for spent fuel management and site restoration costs, the Applicants requested an exemption from 10 CFR 50.82(a)(8)(i)(A) to allow Holtec Pilgrim and HDI to use funds from the DTF for these activities. As mentioned above, the staff's analysis of this regulatory exemption was performed separate from this safety evaluation and, on August 22, 2019 (ADAMS Accession No. ML19192A083), the NRC approved this exemption for Holtec Pilgrim and HDI. This exemption is being issued simultaneously with this license transfer; it will only apply to Holtec Pilgrim and HDI after the Applicants have completed the license transfer transaction and the NRC has issued the conforming amendment reflecting the license transfers.

In its review of the exemption, the NRC staff concluded that reasonable assurance exists that adequate funds will be available in the DTF to complete radiological decommissioning. The NRC staff considered its findings from its evaluation of the exemption in its analysis of this proposed license transfer, which supports the NRC staff's conclusion that the use of the DTF for activities associated with spent fuel management will not negatively impact availability of funding for radiological decommissioning. The NRC staff's independent cash flow analysis, as shown in Attachment 1 to this safety evaluation, supports these findings.

Therefore, based on its evaluation, the staff finds that the use of excess funds from the DTF for spent fuel management provides a reasonable source of funding to cover the costs associated with spent fuel management.

### 3.3.2 Spent Fuel Management Conclusion

The staff reviewed estimates for major spent fuel management activities and funding requirements. Based on its review, the staff concludes that the activities and associated costs of the Pilgrim spent fuel management plan appear reasonable, and as noted above, the staff accepts the assumptions in the Pilgrim spent fuel management plan with regard to the final disposition of Pilgrim's spent fuel by DOE. In addition, the staff does not have new information that challenges the preliminary approval of the Pilgrim spent fuel management plan previously granted by the NRC.

Pertaining to the HDI's plan to fund spent fuel management activities from the DTF, the NRC staff reviewed HDI's site-specific DCE for the facility, planned decommissioning activities and funding associated with those activities, and use of the DTF for spent fuel management (about \$501 million) through 2063. With an opening DTF balance of \$1.030 billion (2019\$), and a projected DTF growth rate of 1.42-percent real rate of return on annual balances as assumed by HDI, the NRC staff finds that funds are expected to be available to pay for the radiological decommissioning of the facility (including the ISFSI), spent fuel management, and site restoration, as allowed by the approval of the regulatory exemption. Attachment 1 to this safety evaluation report contains the NRC staff's independent cash flow analysis.

The NRC staff notes that Holtec Pilgrim expects to recover spent fuel management costs it will incur from the DOE through litigation or settlement of its claims. Holtec Pilgrim did not declare

DOE reimbursements for consideration in this license application. As such, the staff did not factor in potential DOE reimbursements as part of its independent cash flow analysis.

Based on its review, and in consideration of the above analysis describing the Applicants' financial plans for managing spent fuel, the NRC staff finds that the Applicants have reasonable assurance of obtaining the funds necessary to cover estimated costs for spent fuel management in accordance with 10 CFR 50.33(f) and 10 CFR 50.54(bb).

### 3.4 Financial Qualifications Conclusion

As described above, the NRC staff reviewed the application in its evaluation of the Applicants' financial qualifications, funding for the decommissioning of Pilgrim, and funding for spent fuel management at Pilgrim. Based on its evaluation as described above and shown in its independent cash flow analysis in Attachment 1, the NRC staff concludes that the funds in the DTF are expected to be available and sufficient to cover the estimated costs for the radiological decommissioning of the facility (including the ISFSI). Therefore, the NRC staff concludes that the Applicants have provided reasonable assurance of obtaining the funds necessary to cover estimated costs for decommissioning Pilgrim in accordance with the requirements of 10 CFR 50.33(f), 10 CFR 50.33(k)(1), 10 CFR 50.75, and 10 CFR 50.82(a).

In addition, based on its evaluation above of the Applicants' funding plans for managing spent fuel, including the exemption to use DTF for spent fuel management, as supported by the NRC staff's independent cash flow analysis in Attachment 1, the NRC staff finds that the Applicants have provided reasonable assurance of obtaining the funds necessary to cover estimated costs for spent fuel management in accordance with the requirements of 10 CFR 50.33(f) and 10 CFR 50.54(bb).

Accordingly, considering the foregoing evaluation, the NRC staff finds that Holtec Pilgrim and HDI are financially qualified to hold the Pilgrim License No. DPR-35, and the general license for the Pilgrim ISFSI, as proposed.

### 3.5 Standard Contract for Disposal of Spent Nuclear Fuel

As stated by the Applicants, Holtec Pilgrim will continue to hold title to the spent nuclear fuel at Pilgrim and will continue to maintain the DOE Standard Contract, including all rights and obligations under that contract. The previous owner, Boston Edison Company, and the United States of America, represented by the DOE, entered into this Standard Contract, No. DE-CR01-83NE44368, dated June 17, 1983, to govern the disposal of the spent nuclear fuel generated at Pilgrim.

### 3.6 Antitrust Review

The AEA does not require or authorize antitrust reviews of post-operating license transfer applications (Kansas Gas and Electric Co., et al. (Wolf Creek Generating Station, Unit 1), CLI-99-19, 49 NRC 441 (1999)). This application postdates the issuance of the operating license for the unit under consideration in this safety evaluation and, therefore, no antitrust review is required or authorized.

### 3.7 Foreign Ownership, Control, or Domination

Sections 103d and 104d of the AEA prohibit the NRC from issuing a license for a nuclear power plant to “any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.” The NRC’s regulation, 10 CFR 50.38, contains language to implement this prohibition.

According to the Applicants, Holtec is a privately held corporation and is controlled by its Board of Directors, all of whom are U.S. citizens. The directors are ultimately appointed by Holtec’s owners, who are trust companies organized in the State of Florida and are controlled by U.S. citizens. Holtec has been U.S.-owned since its inception in 1986 without any non-U.S. control or domination. Holtec Power, NAMCo, Holtec Pilgrim, and HDI are all directly or indirectly under Holtec’s control, and all of the directors and executive committee members as identified in Attachment C to the application are U.S. citizens. Although Holtec performs work in foreign countries, the contractual arrangements to provide products and services do not result in any FOCD of the Holtec organization or its subsidiaries or contracts. The activities conducted in foreign countries are ultimately controlled by U.S. citizens.

Further, the Applicants state that, as the licensed entity with possession of and responsibility for direct oversight, control, and decommissioning of Pilgrim, HDI will act for itself and on behalf of Holtec Pilgrim, as its agent. Neither HDI nor Holtec Pilgrim is acting as the agent or representative of any other entity in the proposed transfer of the licenses. The Applicants also state that CDI is jointly owned by HDI and SNC-Lavalin. HDI, as the majority owner of CDI, controls CDI. SNC-Lavalin, a company based in Montreal, Quebec, Canada, is a publicly traded company on the Toronto Stock Exchange. CDI’s role is defined as the decommissioning general contractor under a contract between HDI and CDI. CDI will not be the licensed owner or operator of the plant and will not have direct access to the Pilgrim DTFs. CDI will perform decommissioning activities pursuant to its contract with HDI, subject to HDI’s direct oversight and control. There is no prohibition against a company with foreign minority ownership performing licensed activities at U.S. nuclear reactors. Therefore, notwithstanding CDI’s foreign minority ownership and engagement as the decommissioning operations contractor, Holtec and the licensee entities proposed for Pilgrim will not be owned, controlled, or dominated by any foreign person.

Based on this information, the NRC staff finds that the direct and indirect transfer of the facility licenses to Holtec, Holtec Pilgrim, and HDI, as proposed in the application, does not raise any issues related to FOCD within the meaning of the AEA and NRC regulations. In light of the above and pursuant to Sections 103d and 104d of the AEA and 10 CFR 50.38, the NRC staff concludes that it does not know, or have reason to believe, that any of the Applicants or their respective owners will be owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, as a result of the direct or indirect license transfers.

### 3.8 Nuclear Insurance and Indemnity

Pursuant to the requirements of the Price-Anderson Act (Section 170 of the AEA) and the NRC’s implementing regulations in 10 CFR Part 140, the current indemnity agreement must be modified to reflect that, after the proposed license transfers take effect, Holtec Pilgrim (licensed owner) and HDI (licensed operator for decommissioning) will be the sole licensees for Pilgrim for purposes of decommissioning the site. Consistent with NRC practice, the NRC staff will require Holtec Pilgrim and HDI to provide and maintain onsite property insurance as specified in 10 CFR 50.54(w). Holtec Pilgrim and HDI are also required to provide evidence that they have



obtained the appropriate amount of insurance in accordance with 10 CFR 140.11(a)(4), which will be effective concurrent with the date of the license transfers and amended indemnity agreement. Therefore, the order approving the transfer will be conditioned as follows:

Prior to the closing of the license transfer, Holtec Pilgrim and HDI shall provide the Directors of NRC's Office of Nuclear Material Safety and Safeguards (NMSS) and Office of Nuclear Reactor Regulation (NRR) satisfactory documentary evidence that they have obtained the appropriate amount of insurance required of a licensee under 10 CFR 140.11(a)(4) and 10 CFR 50.54(w) of the Commission's regulations.

Based on the above, the NRC staff concludes that the proposed license transfer, as conditioned, satisfies the nuclear insurance and indemnity requirements of 10 CFR Part 140 and 10 CFR Part 50.

### 3.9 Financial Conclusions

Based on the foregoing, and subject to the conditions described herein, the NRC staff concludes that Holtec Pilgrim and HDI are financially qualified to be the holders of the Pilgrim license as owner and decommissioning operator, respectively, and of the general license for the Pilgrim ISFSI, as described in the application, and to engage in the proposed maintenance and decommissioning activities associated with the Pilgrim site. The NRC staff has concluded, based on the considerations discussed above, that (1) the proposed transferees are financially qualified to be the holders of license DPR-35 and (2) the proposed direct and indirect license transfers are otherwise consistent with the applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

Additionally, the NRC staff finds that the Applicants have satisfied the NRC's decommissioning funding assurance requirements and the applicable onsite and offsite insurance requirements as conditioned. Further, the NRC staff finds that the Applicants are not owned, controlled, or dominated by a foreign entity.

### 3.10 Management and Technical Support Organization

By application dated November 16, 2018, the Applicants requested that the NRC consent to the license transfer for the purpose of implementing expedited decommissioning at Pilgrim. Figure 2 of the application shows the planned ownership structure following the proposed transfer. Holtec International is the ultimate parent company of Holtec Pilgrim and HDI. Holtec Power is a direct, wholly owned subsidiary of Holtec International. Holtec Pilgrim will be a direct, wholly owned subsidiary of NAMCo, which, in turn, is a direct, wholly owned subsidiary of Holtec Power. HDI is also a direct, wholly owned subsidiary of Holtec Power.

As stated in the application, following NRC approval of the transfers, 100 percent of the equity interests in ENGCO will be transferred to Holtec pursuant to the terms of an EPSA. ENGCO will change its name to Holtec Pilgrim, but the same legal entity will continue to exist before and after the proposed transfer. After the closing of the transaction and license transfer, ENGCO, renamed Holtec Pilgrim, will continue to own Pilgrim, as well as its associated assets and title to spent nuclear fuel. Upon closing the proposed transaction, HDI will assume licensed responsibility as the decommissioning operator of Pilgrim, and Holtec Pilgrim will assume licensed responsibility as the owner of Pilgrim. Holtec Pilgrim will enter into a decommissioning operator services agreement with HDI, which will provide for HDI to act as Holtec Pilgrim's

agent and for Holtec Pilgrim to pay HDI's costs for post-shutdown operations, including decommissioning, spent fuel management, and site restoration costs. HDI's licensed activities will involve possessing and disposing of radioactive material, maintaining the facility in a safe condition (including handling, storing, controlling, and maintaining the spent fuel), decommissioning and decontaminating the facility, and maintaining the ISFSI until it can be decommissioned.

The Applicants further stated, in Sections 2 and 5.C of Enclosure 1 to the application dated November 16, 2018, that HDI will contract with CDI, a company jointly formed and owned by Holtec and SNC-Lavalin, as the decommissioning general contractor, subject to HDI's direct oversight and control as the decommissioning licensed operator. HDI will become Pilgrim's licensed operator for decommissioning, and CDI will perform day-to-day licensed activities at the site, including decommissioning activities, pursuant to the Decommissioning General Contractor Agreement between HDI and CDI, subject to HDI's direct oversight and control as the decommissioning licensed operator. The application further specified that CDI will subcontract with industry vendors who have "demonstrated expertise in dismantlement and decommissioning in the nuclear field." HDI and CDI will select subcontractors using an industry vendor evaluation and selection vetting process, with key criteria for selection that include recent experience, technical capability to perform tasks, safety record, prior record of adherence to quality, and history of any adverse NRC notices, such as notices of violation or confirmatory action letters.

Section 5.B of the application described HDI's responsibilities as the licensed operator, to include the following:

- meeting all duties and obligations of the decommissioning operator licensee, including continuing compliance with the ISFSI Certificate of Compliance, licensing basis, and regulatory commitments and requirements
- possessing and disposing of radioactive material
- maintaining the facility in a safe condition, including the storage, control, and protection of the spent fuel in the pool and on the ISFSI, until the ISFSI is decommissioned
- establishing and implementing processes to ensure compliance with the licenses and NRC regulations, and retaining decisionmaking authority for any issues related to compliance with the licenses and NRC regulations
- overseeing the development and submittal of licensing actions required to support ongoing decommissioning activities
- making necessary modifications to the emergency preparedness and security plans and responses to NRC orders on security
- performing the functions necessary to fulfill the quality assurance requirements of the Pilgrim technical specifications (TS) and as specified in the Pilgrim Quality Assurance Program Manual (QAPM) in place at the time of license transfer
- providing oversight of CDI, including quality assurance, safety, and security

The application described HDI as being structured in a manner that is similar to the corporate organization that exists in many current nuclear industry utilities with a fleet of operating units, including the current Pilgrim structure. HDI plans to fill the onsite HDI position of Pilgrim Site Vice President with an incumbent Pilgrim senior manager.

The Applicants provided a combined organizational chart of the Pilgrim organization in Figure A-1 of the application, depicting the relationships between HDI as the decommissioning licensed operator and CDI and the decommissioning general contractor. Further, Sections 5.B and 5.C of Enclosure 1 to the application, dated November 16, 2018, contain information about the roles and responsibilities of HDI and CDI senior management, respectively. The planned HDI senior management organization will comprise Holtec personnel and will include the following:

- The HDI President and Chief Nuclear Officer (CNO) will report directly to the Holtec Executive Committee. The HDI President and CNO will be responsible for overseeing the safety, operation, and decommissioning of nuclear sites maintained by HDI, including Pilgrim.
- The HDI Vice President for Quality Assurance and Nuclear Oversight will report to the HDI President and CNO and will be responsible for providing quality assurance oversight for nuclear sites maintained by HDI, including Pilgrim. The responsibilities of the HDI Vice President for Quality Assurance and Nuclear Oversight include quality assurance oversight for the movement of fuel and the transportation of radioactive waste.
- The HDI Senior Vice President and Chief Operating Officer (COO) will report to the HDI President and CNO and will be responsible for providing oversight of the decommissioning activities performed by CDI at nuclear sites maintained by HDI, including fuel management, security, and emergency preparedness.
- The HDI Pilgrim Site Vice President will report to the HDI Senior Vice President and COO and will be responsible for providing day-to-day onsite leadership and direction of safe decommissioning activities at the site. In addition, the HDI Pilgrim Site Vice President will be responsible for assuring compliance with the licenses, including the TS, ISFSI Certificate of Compliance, and any other regulatory requirements and commitments.
- The HDI Vice President for Licensing will report to the HDI Senior Vice President and COO and will be responsible for providing licensing oversight for the decommissioning of nuclear sites maintained by HDI, including Pilgrim.
- The HDI Vice President for Technical Support will report to the HDI Senior Vice President and COO and will be responsible for providing technical support in the areas of health and safety, the environment, radiation protection, and decommissioning improvements at nuclear sites maintained by HDI, including Pilgrim.
- The CDI Pilgrim Decommissioning General Manager will report to the HDI Pilgrim Site Vice President; will lead the CDI team; and will maintain responsibility for overall management, performance, nuclear safety, quality assurance, and employee safety. The CDI Pilgrim Decommissioning General Manager will also report to the CDI Vice President for Corporate Operations, who, in turn, reports directly to the CDI Chief Executive Officer. The following organizations and their respective managers will be

reporting to the CDI Pilgrim Decommissioning General Manager: Decommissioning Deputy General Manager, Regulatory Affairs Manager, Spent Fuel Manager, Radiation Protection Manager, Waste Manager, Decommissioning Projects Manager, and Project Controls Manager. In addition, the incumbent ENOI Pilgrim Decommissioning Organization personnel at the time of license transfer who accept offers of employment will be integrated into the CDI site organization. They will continue to be located at Pilgrim and will include staff from the plant operations, emergency planning, and security organizations, with their roles and responsibilities based largely on their pretransfer roles and responsibilities. Incumbent staffing levels will be based on the permanent shutdown and defueled status of Pilgrim immediately before the license transfer.

By letter dated August 31, 2018 (ADAMS Accession No. ML18243A489), Exelon Generation Company, LLC (Exelon Generation), Oyster Creek Environmental Protection, LLC, and HDI submitted an application for order approving direct transfer of the operating license for Oyster Creek Nuclear Generating Station (Oyster Creek) from Exelon Generation to Oyster Creek Environmental Protection as the licensed owner and to HDI as the licensed decommissioning operator, for NRC's approval. The application stated that HDI, as licensed operator, will provide the overall management of decommissioning activities at Oyster Creek. The NRC approved the license transfer request for Oyster Creek on June 20, 2019 (ADAMS Accession No. ML19095A454). HDI became the licensed decommissioning operator for Oyster Creek on July 1, 2019 (ADAMS Accession No. ML19164A157).

During its review of the instant license transfer application, the NRC staff noted that, should the license transfer for Pilgrim be approved, HDI would be responsible for conducting licensed activities at two sites simultaneously (Pilgrim and Oyster Creek), including possession and disposition of radioactive material, maintenance of the facilities in a safe condition (including storage, control, and maintenance of the spent fuel), decommissioning and decontamination of the facilities, and maintenance of the ISFSIs until they can be decommissioned. Therefore, by letter dated March 21, 2019 (ADAMS Accession No. ML19086A349), the NRC staff submitted a request for additional information, asking that the Applicants provide information that justifies that HDI's management and technical support organization will have sufficient resources (i.e., corporate structure, management and technical support organization staff capacities, internal procedures) to conduct licensed activities at multiple sites. By letter dated April 17, 2019 (ADAMS Accession No. ML19109A177), HDI responded that it would use a fleet model to manage and conduct the decommissioning of its shutdown nuclear power plants. The fleet model will provide for efficiency by establishing standard processes, procedures, and approaches at the corporate level and at the decommissioning sites, similar to the model used by many operating fleets. In addition, each of HDI's decommissioning sites will have a dedicated leadership reporting to the same HDI corporate executive team and sufficient technical support from the CDI site organizations, mostly made up of experienced incumbents and supplemented as needed by additional Holtec and SNC-Lavalin resources. HDI further stated that it will implement governance procedures at both the HDI corporate level and at the site level. As decommissioning progresses at the sites, HDI will make changes to the site governance documents, with the overall goal of standardizing such documents across the HDI fleet as much as practicable, to allow efficiency in oversight and the application of site-specific lessons learned and operating experience to other sites in the HDI fleet. The executive leadership team at the HDI corporate level will oversee the safety, operation, and decommissioning at the Oyster Creek and Pilgrim sites. The executive leadership team consists of the HDI Vice President for Licensing, Treasurer and Nuclear Decommissioning Trust Fund Management, Vice President for Technical Support, Senior Vice President and COO, Vice President for Quality Assurance and Nuclear Oversight, President and CNO, and the Holtec

Executive Committee. HDI stated that the corporate HDI and CDI executive team is structured and staffed in anticipation of supporting planning and decommissioning activities at multiple sites, with the capacity to expand as needed.

The Applicants further stated in the application dated November 16, 2018, that CDI will support HDI's responsibility to maintain the facility in compliance with the licenses and NRC regulations by performing licensed activities and decommissioning safely and securely. HDI will retain ultimate decision-making authority and will provide direct governance and oversight of CDI's performance, thereby fulfilling its licensed responsibilities as the decommissioning licensed operator. Holtec senior staff will manage HDI to provide the requisite managerial capabilities and decision-making authority within the licensed organization, while a combination of Holtec and Atkins personnel (see below) who have commercial nuclear experience, including experience in spent fuel handling and decommissioning, will staff CDI. As of the transaction closing, CDI will become the employer of ENOI's employees in the Pilgrim decommissioning organization, with the exception of an incumbent senior manager at Pilgrim, who will be employed by HDI.

As stated in Sections 5.C, 5.D, and 8.D of Enclosure 1 to the letter, CDI will perform the day-to-day activities at the site to maintain compliance with the licenses and NRC regulations, subject to HDI's direct oversight and control as the licensed operator. After the closing of the transaction and license transfer, ENGCO, renamed Holtec Pilgrim, will continue to own Pilgrim and its associated assets that will be needed to maintain Pilgrim and the site in accordance with NRC requirements and the facility licenses. In addition to the structures and equipment, these assets will include the necessary books, records, safety and maintenance manuals, and engineering construction documents. HDI plans to adopt the current NRC-approved ENOI programs, procedures, and work instructions applicable to Pilgrim, and HDI and CDI will continue to work in accordance with those documents following the license transfer. The existing Pilgrim programs and procedures at the time of transfer, including the emergency plan, physical security and cybersecurity plans, fire protection program, radiological protection, certified fuel handler training, and quality assurance program will also be implemented by HDI and CDI, after license transfer. Upon closing of the transaction, HDI will assume authority and responsibility for the functions necessary to fulfill the quality assurance requirements of the Pilgrim TS and as specified in the Pilgrim QAPM in place at the time of license transfer. The Pilgrim QAPM will be added as an appendix to the Holtec quality assurance program and specified as applicable to the Pilgrim site.

### 3.10.1 Strategic Partner Experience and Expertise

As stated in the application, HDI will draw on the experience and expertise of its parent company, Holtec, and its contractor, CDI. Under HDI's direct oversight and control, CDI will perform the day-to-day licensed activities at the site, including decommissioning the plant, pursuant to a Decommissioning General Contractor Agreement between HDI and CDI. A combination of Holtec and SNC-Lavalin personnel who have commercial nuclear experience, including experience in spent fuel handling and decommissioning, will staff CDI. In addition to employees transferred from Holtec and SNC-Lavalin, CDI staffing will include ENOI's Pilgrim decommissioning organization incumbent staff who, at the time of the license transfer, will be integrated into the CDI decommissioning organization, in a manner consistent with their experience and previous positions at Pilgrim.

The information below briefly describes the experience and expertise of HDI and each of its strategic partners.

HDI is an indirect, wholly owned subsidiary of Holtec. The senior management of HDI comprises Holtec personnel. HDI is structured to serve as a fully resourced organization to directly oversee and manage licensed decommissioning operations and the dismantlement of a nuclear power plant that has ceased operation. HDI has the expertise to oversee all licensed activities following reactor defueling, including the transfer of spent fuel from the SFP to the ISFSI, security, and emergency preparedness.

Holtec has extensive experience in designing, manufacturing, and installing capital equipment, as well as providing services to operating commercial power plants. Holtec also possesses in-house capabilities to design, engineer, analyze, construct, and deploy spent fuel. Holtec possesses both technical resources and experience with nuclear decommissioning, spent fuel handling equipment, transport of nuclear fuel, and wet and dry spent fuel storage systems and components.

CDI is a company jointly owned by HDI and Kentz USA Inc., an SNC-Lavalin subsidiary. HDI owns the majority of CDI. As stated in the application, the CDI staff will comprise a combination of Holtec and SNC-Lavalin personnel who have commercial nuclear experience, including experience in spent fuel handling and decommissioning, and enhanced by the addition of incumbents from the ENOI Pilgrim decommissioning organization who will transition to HDI following the license transfer. The CDI staff will also include Atkins personnel who have decommissioning expertise and experience.

SNC-Lavalin, one of CDI's joint owners, is an engineering and construction company. SNC-Lavalin is also the current owner and the original equipment manufacturer of CANDU reactor technology. SNC-Lavalin acquired Atkins in July 2017, which then became a wholly owned subsidiary of SNC-Lavalin. Atkins is a design, engineering, and project management consultancy company, based in the United Kingdom. Atkins has been involved in the nuclear cleanup, decommissioning, and environmental remediation of nuclear waste storage sites since the late 1980s, working with Sellafield Ltd (formerly British Nuclear Fuels Limited) and managing the fleet of 22 Magnox reactors, through operation and into decommissioning in the United Kingdom. In addition, in 2016, Atkins acquired the EnergySolutions' Projects, Products, and Technology (PP&T) division, which was responsible for decommissioning the Zion Nuclear Generating Station. In addition, British Nuclear Fuels Limited, which is now owned by Atkins through its acquisition of EnergySolutions PP&T, had a significant role in the decommissioning of Big Rock Point, including the removal of the large components and reactor vessel.

### 3.10.2 Management and Technical Support Organization Conclusion

The Applicants provided organizational charts of the corporate-level management and technical support organizations and described changes they will make as a result of the proposed transfer. The Applicants described the relationship of the nuclear-oriented parts of the organization to the rest of the corporate organization. The Applicants explained that HDI will be using a fleet model approach to ensure that the management and technical support organizations will have sufficient resources to conduct licensed activities at multiple sites. The Applicants described several provisions that they will make for uninterrupted support of technical operations, which include (1) plans to adopt the current NRC-approved ENOI policies, programs, procedures, and work instructions applicable to Pilgrim, and to continue to work in accordance with those documents following the license transfer, and (2) plans for the decommissioning general contractor, CDI, to employ the ENOI Pilgrim decommissioning organization's incumbent staff.

Based on its review of the application for license transfer, the NRC staff finds that the Applicants provided reasonable assurance that the requirements of 10 CFR 50.34(b)(7) and 10 CFR 50.80 regarding the technical qualifications of HDI to engage in the proposed activities have been met. In addition, the staff finds that HDI is technically qualified to be the holder of the license and that the transfer of the license is otherwise consistent with the applicable provisions of law, regulations, and orders issued by the Commission. Accordingly, the staff concludes that the proposed HDI management and technical support organization will adequately support the proposed maintenance and decommissioning activities at Pilgrim.

### 3.11 Operating Organization

As stated in the application, CDI will establish a site decommissioning organization. CDI plans to employ ENOI's Pilgrim decommissioning organization personnel at the site at the time of the transaction closing, with the exception of one incumbent senior manager, who will become an HDI employee as the Site Vice President in charge of the site-based organization.

The application stated that staffing levels at the time of transfer will be fully compliant with the requirements of facility licenses and NRC regulations. HDI will ensure that vacated positions previously filled by incumbent employees are backfilled with qualified personnel, subject to a determination of the need to fill the position. In all cases, the individuals will be qualified for Pilgrim's programs and procedures.

The staffing and qualification requirements for the current operating organization at Pilgrim were previously found to be acceptable, as approved in Amendment No. 246 to Renewed Facility Operating License No. DPR-35 (ADAMS Accession No ML17066A130), consistent with the permanent cessation of operations and permanent removal of fuel from the reactor vessel. These staffing and qualification requirements detailed, among others, the responsibilities of a plant manager and a control room supervisor and stipulated that the minimum shift crew composition include at least one control room supervisor, who must be a Certified Fuel Handler, and one Non-Certified Operator. In addition, the facility staff qualifications are required to be maintained as stated in Section 5.3 of the TS. The proposed changes to the license as described in Enclosure 1, Attachment A, to the application letter do not affect the staffing or qualifications requirements as approved in Amendment No. 246.

In Enclosure 1, Attachment C, to the letter, the Applicants provided résumés of several key personnel with responsibilities of regulatory significance, including, among others, those of the HDI President and CNO, HDI Senior Vice President and COO, HDI Vice President for Quality Assurance and Nuclear Oversight, HDI Vice President for Licensing, and HDI Vice President for Technical Support. The résumés provided information on the experience of individuals who will occupy the aforementioned key positions in the areas of spent fuel management, decommissioning, nuclear safety, licensing and regulatory affairs, engineering and operations, and quality assurance.

#### 3.11.1 Operating Organization Conclusion

Based on its evaluation, the NRC staff concludes that the onsite organization will adequately support the proposed maintenance and decommissioning activities at Pilgrim in accordance with 10 CFR 50.34(b)(7) that requires Applicants to provide the technical qualifications to engage in the proposed activities, and 10 CFR 50.80(c) that requires the proposed license transferee to be

qualified to be the holder of the license, and is otherwise consistent with the applicable provisions of law, regulations, and orders issued by the Commission.

### 3.12 Technical Qualification Conclusion

The Applicants have described the management and technical support organization, as well as the onsite operating organization, that would be responsible for the maintenance and decommissioning of Pilgrim after the proposed transfer of licensed authority to HDI. Based on its evaluation as described above, the NRC staff concludes that (1) HDI will have an acceptable management organization, (2) HDI will retain an onsite organization capable of safely conducting decommissioning activities, and (3) HDI will have the technically qualified resources and experience to support the safe maintenance and decommissioning of the Pilgrim site after the transfer of licensed authority from ENOI to HDI. The staff also determined that the Applicants provided reasonable assurance that they have met the relevant requirements of 10 CFR 50.34(b)(7) and 10 CFR 50.80 to engage in the proposed activities. Accordingly, in light of the foregoing evaluation, the staff finds that HDI is technically qualified to hold Pilgrim License No. DPR-35, and the general license for the Pilgrim ISFSI, as proposed.

### 3.13 Conforming License Amendment

#### 3.13.1 Technical Specifications

The Applicants requested a conforming amendment to Renewed Facility Operating License No. DPR-35 for Pilgrim. The NRC staff notes that TS page 4.0-1 is in effect with an administrative change to Section 4.1, "Site Location," and recognizes that Section 4.3, "Fuel Storage," is also on the same TS page. On April 7, 2016, the NRC issued Generic Letter (GL) 2016-01, "Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools" (ADAMS Accession No. ML16097A169), to address the degradation of neutron-absorbing materials in wet storage systems for reactor fuel at power and nonpower reactors. The generic letter requested that licensees provide information to allow the NRC staff to verify continued compliance through effective monitoring to identify and mitigate any degradation or deformation of neutron-absorbing materials credited for criticality control in SFPs.

By letter dated November 3, 2016 (ADAMS Accession No. ML16319A131), as supplemented by letter dated February 8, 2018 (ADAMS Accession No. ML18039A843), Entergy responded to GL 2016-01 for Pilgrim. In Entergy's response to GL 2016-01, as supplemented, the licensee also noted that 2016 testing on the Boraflex installed in the SFP at Pilgrim showed that some of the Boraflex was no longer bounded by the nuclear criticality safety analysis of record. This resulted in the licensee implementing corrective actions to manage Boraflex degradation and maintain subcriticality in the SFP. On September 26, 2018, the NRC issued a letter to Entergy on the closeout of GL 2016-01. The letter states that the NRC staff found interim corrective actions taken to be adequate and that the licensee-identified nonconservative TS would be resolved in accordance with Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," dated December 29, 1998 (ADAMS Accession No. ML031110108). The GL 2016-01 issue affects TS Section 4.3.

By letter dated September 13, 2018 (ADAMS No. ML18260A085), as supplemented by letters dated January 10, February 8, and March 14, 2019 (ADAMS Nos. ML19016A135, ML19044A574, and ML19079A158), ENOI submitted a license amendment request to revise the Pilgrim Renewed Facility Operating License and associated TS to permanently defueled TS consistent with the permanent cessation of reactor operation and permanent defueling of the



reactor. The NRC staff is addressing changes to TS Section 4.3 as part of its review of the license amendment request, dated September 13, 2018.

As described in the November 16, 2018, application, HDI will assume licensed responsibility for Pilgrim through a direct transfer of ENOI's responsibility for licensed activities at Pilgrim to HDI. Upon closing of the proposed license transfer and issuance of the conforming amendment, HDI would assume responsibility for compliance with the current licensing basis, including regulatory commitments that exist at the closing of the transaction between the Applicants, and would implement any changes under applicable regulatory requirements and practices. Additionally, HDI would assume responsibility for open licensing actions previously submitted by ENOI. As stated previously, the NRC staff determined that HDI will be technically qualified to support the safe maintenance and decommissioning of the Pilgrim site; this includes issues pertaining to the SFP.

### 3.13.2 Final No Significant Hazards Consideration

Under the Atomic Energy Act of 1954, as amended, and the NRC's regulations, the NRC staff may issue and make an amendment immediately effective, notwithstanding the pendency before the Commission of a request for a hearing from any person, in advance of the holding and completion of any required hearing, where it has made a final determination that no significant hazards consideration is involved.

On February 20, 2019 (ADAMS Accession No. ML19051A114), the Commonwealth of Massachusetts filed a request for a hearing and petition for leave to intervene challenging the proposed license transfer. On February 20, 2019 (ADAMS Accession No. ML19051A019), Pilgrim Watch also filed a request for a hearing and petition for leave to challenging the proposed license transfer. On April 24, 2019 (ADAMS Accession No. ML19114A519), the Commonwealth of Massachusetts filed a motion to supplement its motion to intervene and request for hearing with new information. On April 26, 2019 (ADAMS Accession No. ML19116A162) and May 9, 2019 (ADAMS Accession No. ML19129A473), Pilgrim Watch filed motions to supplement its motion to intervene and request for hearing with new information. On July 16, 2019 (ADAMS Accession No. ML19197A330), Pilgrim Watch submitted a motion to file a new contention. On August 1, 2019 (ADAMS Accession No. ML19213A313), the Commonwealth of Massachusetts filed a motion to stay the license transfer proceeding for 90 days to permit the completion of settlement negotiations. These requests are currently pending before the Commission.

As provided in 10 CFR 2.1315, unless otherwise determined by the Commission with regard to a specific application, the Commission has determined that any amendment to the license of a utilization facility or to the license of an ISFSI, which does no more than conform the license to reflect the transfer action involves no significant hazards consideration. No contrary determination has been made with respect to this specific application.

### 3.13.3 Conforming License Amendment Conclusion

The conforming amendment requested by the Applicants does not affect TS Section 4.3. Further, the Applicants requested no physical or operational changes to the facility. The proposed conforming amendment only reflects the proposed license transfer action. The conforming amendment involves no safety question and is administrative in nature. Accordingly, the proposed amendment is acceptable.

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the proposed action will not endanger public health and safety, (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 public health and safety.

### 3.14 Public Comments

The NRC published a notice of consideration of the approval of transfer of license and conforming amendment in the *Federal Register* on January 31, 2019 (84 FR 816). The notice included an opportunity to provide written comment and stated that the NRC would participate in a public meeting at Hotel 1620 in Plymouth, Massachusetts, on January 15, 2019. The announcement also noted that NRC personnel at the public meeting would take oral or written comments on the application for the proposed license transfer and the associated proposed HDI revised PSDAR. The public meeting record (ADAMS Accession No. ML19017A173) summarizes the oral comments; the presentation slides are available in ADAMS under Accession Nos. ML19008A494, ML19009A171, and ML19009A343; and a transcript of the public meeting is available at ADAMS Accession No. ML19029A025.

The NRC received written comments from the public in response to the FR notice. These comments are publicly available in ADAMS under Accession Nos. ML19032A073, ML19046A017, ML19057A188, ML19057A190, ML19057A569, ML19059A023, ML19060A227, ML19060A228, ML19064B330, ML19064B331, ML19064B332, ML19064B345, ML19065A180, ML19065A187, ML19065A188, ML19065A192, ML19065A193, ML19065A196, ML19065A198, ML19065A257, ML19065A258, ML19070A161, ML19070A162, ML19070A164, ML19070A165, ML19070A166, ML19070A167, ML19070A168, ML19070A169, ML19070A170, ML19070A171, ML19070A172, ML19070A174, ML19070A175, ML19070A176, ML19070A177, ML19072A312, ML19072A314.

Of the comments received, 4 were out of scope, 8 favored granting the license transfer, 18 supported the hearing requests from the Commonwealth of Massachusetts and Pilgrim Watch, and 9 expressed concerns.

Several questions and comments came from the general public at the public meeting. The themes of the written questions and comments overlapped with the oral questions and comments. The questions and comments had the following themes:

- concerns about the responsibility for any decommissioning fund shortfalls and the financial integrity or other qualifications of Holtec and its partners
- use of the site after decommissioning
- concerns about continued storage of spent fuel after decommissioning, transportation of spent fuel and radioactive waste, and the destination of spent fuel once it is removed from the site
- support for the timely review and approval of the license transfer and the immediate decommissioning of the facility
- concerns that support for the license transfer is partially based on proprietary information or incomplete cost information and that the work will have proper oversight

- concerns about the potential to turn parts of the facility to rubble and bury it on site
- concerns about unknown radiation ground contamination
- concerns about climate change affecting the site
- concerns about the reduction of emergency planning
- concerns about Entergy's current use of the DTF
- NRC communications and coordination on the review process
- concerns about the dry cask incident at San Onofre

The NRC staff reviewed the questions and comments made in the public meeting, along with the written comments received during the open comment period, and considered them in the review process. This safety evaluation of the license transfer request addresses the themes of the questions and comments that were within the scope of the NRC's review, such as concerns about decommissioning fund shortfalls and the financial integrity and the financial and technical qualifications of Holtec and its partners.

The NRC considers concerns about the environment to be out of scope for a license transfer review. Additionally, as indicated below, the NRC staff has determined that the license transfer and conforming amendment meet the eligibility criteria for the categorical exclusion set forth in 10 CFR 51.22(c)(21). Therefore, under 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the approval of the transfer application and conforming license amendment.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC notified the Commonwealth of Massachusetts official of the proposed license transfer and draft conforming amendment on August 13 and 14, 2019 (ADAMS Accession No. ML19226A396). The Commonwealth official responded on August 21, 2019 with written comments (ADAMS Accession No. ML19233A278).

As provided in 10 CFR 2.1315, unless otherwise determined by the Commission with regard to a specific application, the Commission has determined that any amendment to the license of a utilization facility or to the license of an ISFSI that does no more than conform the license to reflect the transfer action involves no significant hazards consideration. As noted above in Section 3.13.2, no contrary determination has been made with respect to this specific application. The NRC staff notes that the consultation requirements in 10 CFR 50.91(c) do not give the Commonwealth the right to veto or insist upon a postponement of the Commission's no significant hazards consideration determination. The staff has considered the comments and determined no changes to the safety evaluation were necessary.

At the request of the Commonwealth, the Commonwealth's comments are reprinted here in their entirety.

At the outset, the Commonwealth objects to the proposed action based on the procedural irregularities and disparate treatment of the Commonwealth during the consultation process as compared to other similarly situated states.

On August 13, 2019, the NRC State liaison contacted the Massachusetts Executive Office of Energy and Environmental Affairs with an offer for NRC Staff to consult with the Commonwealth about the Staff's proposed actions during a narrow two-hour window later that day. By mutual agreement, that "consultation" meeting was scheduled for 1:30 pm on August 13, 2019. Approximately twenty-minutes prior to that meeting, however, NRC Staff filed into the above referenced proceeding a "Notification," which informed the proceeding participants that Staff had notified the Commission that Staff intended to issue an order approving the license transfer application and Exemption Request on or about August 21, 2019.<sup>1</sup> Even though the NRC Staff had not yet consulted with the Commonwealth on that intended action, the Notification also indicated wrongly that NRC Staff had *already* notified the Commonwealth of the proposed actions. During the "consultation" call that *followed* the Notification's filing in the docket, the NRC Staff initially declined even to describe the contents of the just filed public Notification and refused to provide any details regarding what the anticipated approval Order would say or the findings underlying it in the anticipated SER. This conduct is not consistent with the NRC's state consultation requirements under, *inter alia*, 10 C.F.R. § 50.91 or the respect due to a sovereign state that has raised serious concerns about the requested actions. Nor is this a situation where an "emergency" would excuse the Staff's obligation to "make a good faith attempt to consult with" the Commonwealth of Massachusetts before NRC Staff or the Commission acts. See 10 C.F.R. § 50.91(b)(4).<sup>2</sup>

In another example of a lack of meaningful consultation, NRC Staff, on August 14, 2019, rejected the Commonwealth's request for fourteen days to provide to Staff the Commonwealth's written views on the proposed action prior to the Staff's taking any final action. Instead, in conflict with the state consultation process with the State of New Jersey for the recent transfer of Oyster Creek Nuclear Generating Station's operating license, NRC Staff informed the Commonwealth that it would have five business days (close of business on August 21, 2019) to offer any written comments to Staff on the intended actions. In support of its request for fourteen days, the Commonwealth had noted during its August 13 and August 14, 2019, conversations with NRC Staff that the Staff had just recently given the State of New Jersey fifteen days from the initial notification of the Staff's intention to approve the Oyster Creek license transfer application to submit an official written response to the Staff's proposed action.<sup>3</sup>

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<sup>1</sup> Notification of Significant Licensing Action (NSLA) (ADAMS Accession No. ML19225D006).

<sup>2</sup> The NRC Staff also argued that its obligation to consult with the Commonwealth was limited to the *conforming amendment* sought by the Applicants. The NRC requirements, however, do not so narrowly limit the state consultation process, and, in any event, NRC Staff's approach would undermine the very purpose of state consultation to solicit state input about the *substance* of proposed NRC actions that have the potential to pose environmental and public health risks to the state and its residents.

<sup>3</sup> *Safety Evaluation by the Office of Nuclear Reactor Regulation and Office of Nuclear Material Safety and Safeguards, Related Request for Direct Transfer of Control of Renewed Facility Operating License No. DPR-16 and the General License for the Independent Spent Fuel Storage Installation from Exelon Generation Company, LLC to*

Upon receipt of New Jersey's written response, NRC Staff then incorporated New Jersey's written response into the state consultation section of the SER.<sup>4</sup> During its conversations with NRC Staff, the Commonwealth requested that it receive the same treatment as NRC Staff afforded to New Jersey just over two months earlier. After NRC Staff rejected, on August 14, 2019, the Commonwealth's request for fourteen days to submit a written response, the Commonwealth asked NRC Staff whether there were extenuating circumstances that caused the Staff to give New Jersey fifteen days to respond but to reject the Commonwealth's request to be treated similarly. NRC Staff was unable to provide any justification and could not explain why it gave New Jersey fifteen days to respond. Instead, Staff said its internal guidance—Procedures for Handling License Transfers—dictates that Staff is to provide states five business days to respond after initial consultation. Those procedures, however, are silent on the amount of time NRC Staff should give a host state to submit comments on the Staff's intention to approve a license transfer application.<sup>5</sup> NRC Staff's failure to follow what appears to be the NRC's normal state consultation process and its unexplained disparate treatment of the Commonwealth as compared to the State of New Jersey renders its planned action arbitrary and capricious.

Given the NRC Staff's refusal to give the Commonwealth a reasonable amount of time to respond during the consultation process (again, at least the same amount of time it gave New Jersey), the Commonwealth incorporates by reference, as if fully set forth here, the contentions, arguments, and issues it has raised in its yet-to-be acted on Petition for Leave to Intervene and Hearing Request, Docket Nos. 50-293 & 72-1044, filed on February 20, 2019 (Petition); Reply in Support of Petition for Leave to Intervene and Hearing Request, Docket Nos. 50-293 & 72-1044, filed on April 1, 2019 (Reply); and Motion of the Commonwealth of Massachusetts to Supplement Its Petition with New Information, Docket Nos. 50-293 & 72-1044, filed on April 24, 2019. Consistent with the concerns raised in those filings, there are at least two substantive issues that require the NRC Staff to, at a minimum, re-evaluate its plan to approve the

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*Oyster Creek Environmental Protection, LLC and Holtec Decommissioning International, LLC* (Oyster Creek Nuclear Generating Station) (Jun. 20, 2019), Docket Nos. 50-219 & 72-15, at 20 (ADAMS Accession No. ML19095A457).

<sup>4</sup> *Id.* at 20.

<sup>5</sup> See generally *U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, NRR Office Instruction, Change Notice: Procedures for Handling License Transfers*, LIC-107, Revision 2 (Jun. 5, 2017) (hereinafter, *Procedures for Handling License Transfers*). Another Staff action in this matter was, however, inconsistent with the actual terms of that license transfer processing Instruction. While the Instruction provides that NRC Staff must give the *Commission* at least "5 work days" to object to issuance of the Staff approval order before it is issued, *id.* at 13, the Staff sent a notice to Entergy on August 15, 2019, which stated that Pilgrim's license had *already* been "issued to [Holtec]." Encl. at 2 *in* Ltr. from Scott P. Wall, Sr. Project Manager, NRC Plan Licensing Branch III, to Brian R. Sullivan, Site Vice President, Entergy (Aug. 15, 2019) (ADAMS Accession No. ML19191A006). That notice and its statement that the license had already been "issued" to Holtec was then published in the Federal Register on August 20, 2019. 84 Fed. Reg. 43,186, 43,186 col.3 (Aug. 20, 2019).

license transfer application and Exemption Request if not deny them outright. These two issues go to the heart of this matter—Holtec’s ability to satisfy the NRC’s financial and technical requirements for license transfer approval—and should make any regulator take the time to seriously question and evaluate the veracity of Holtec’s assertions, including awaiting the completion of an adjudicatory hearing on them to ensure that all issues have been fully aired and considered.

First, Holtec’s response to the NRC Staff’s July 26, 2019 Request for Additional Information (RAI) belies any claim that Holtec has satisfied the NRC’s financial qualification and assurance requirements for either the license transfer or the Exemption Request. In fact, after Holtec’s misleading response to that request is corrected, Holtec’s cash-flow analysis shows that Holtec will suffer a funding shortfall of more than \$50 million. In its original cash-flow analysis, Holtec claimed a year ending decommissioning trust fund balance of \$3.615 million for the year 2063 (projected end of project life).<sup>6</sup> In developing this analysis, Holtec used a license termination cost of \$592,553,322.<sup>7</sup> In response to NRC Staff’s RAI, Holtec completed a revised cash flow analysis based on the Minimum Formula Amount (MFA), as required by 10 C.F.R. § 50.75(c).<sup>8</sup> The revised MFA-based cash flow analysis increased the license termination cost by \$40,714,236 to a total of \$633,267,558.<sup>9</sup> Yet, despite the \$40 million plus cost increase, and a claim that it used the same assumptions in its revised analysis that it used in its original analysis, Holtec’s recent analysis provides a positive year-end trust balance of \$11,595,232.<sup>10</sup> In other words, despite increasing its costs, Holtec’s analysis results, inexplicably in a higher positive year-end balance. To derive this result in its revised analysis, Holtec appears to have excluded the tax impact on each year-end-earnings-balance that it accounted for in its original cash-flow analysis despite stating to NRC Staff that it included the tax impact.<sup>11</sup> When taxes are accounted for in the revised MFA-based cash-flow analysis, the analysis actually shows a funding shortfall of more than \$50 million.

Second, the misleading nature of Holtec’s RAI response appears to be part of a troubling pattern of behavior that raises serious questions about Holtec’s veracity, judgment, and technical qualifications to decommission a nuclear power

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<sup>6</sup> *Revised Post-Shutdown Decommissioning Activities Report and Revised Site-Specific Decommissioning Cost Estimate for Pilgrim Nuclear Power Station*, Enclosure 1, at 47 (Nov. 16, 2018) (ADAMS Accession No. ML18320A040).

<sup>7</sup> *Id.*

<sup>8</sup> *Response to NRC Request for Additional Information*, at E-4-5 and Enclosure (Jul. 29, 2019) (ADAMS Accession No. ML19210E470).

<sup>9</sup> *Id.* Holtec stated that its lower license termination cost estimate is more accurate because it includes site-specific data to Pilgrim, but, as NRC Staff explained in its RAI, Holtec’s cash-flow analysis does not comply with the NRC’s regulations and, for that reason, cannot be “more accurate.” And Holtec’s attack on that regulation, of course, constitutes an improper challenge to an NRC regulation. Moreover, a large Boiling Water Reactor, such as Pilgrim, has never been decommissioned in the United States. Additionally, as stated in the Commonwealth’s Petition and Reply, Holtec has not provided adequate details as to how its costs are realistic or related to Pilgrim.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

reactor. In October 2010, for example, the Tennessee Valley Authority (TVA) temporarily debarred Holtec and required the company to pay a \$2 million “administrative fee” based on the results of a criminal investigation into an alleged Holtec contract-bribery scheme.<sup>12</sup> The TVA employee, who, according to the TVA Inspector General’s Report, received \$54,000 in undisclosed payments funneled to the employee from Holtec to help Holtec secure a contract with TVA, pleaded guilty in 2007.<sup>13</sup> In a recorded telephone conversation between that employee and an individual who appears in the report to be a Holtec official, during which the employee asked the Holtec official for advice on how to handle the TVA Inspector General’s inquiry, the Holtec official informed the employee to tell the investigators that the employee did not “know anything about [the payments], other than the fact that your wife was in the business of doing consulting services and it was a payment retainer for that work.”<sup>14</sup> More recently, New Jersey’s Economic Development Authority (EDA) froze a \$260 million tax break secured by Holtec when it discovered that Holtec had falsely sworn on its tax break application that the company had never “been barred from doing business with a state or federal agency,”<sup>15</sup> even though, as noted above, TVA temporarily debarred Holtec in October 2010. On April 24, 2019, the NRC itself cited Holtec for two violations of NRC regulatory requirements.<sup>16</sup> And, Holtec’s business “partner” for its nuclear decommissioning venture, SNC-Lavalin, which Holtec has leaned on heavily to support its claimed technical capacity to undertake multiple complex decommissioning projects at the same time,<sup>17</sup> faces its own legal troubles having been caught-up in numerous alleged international

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<sup>12</sup> Office of the Inspector General, TVA, Semiannual Report 18 (Apr. 1, 2015 - Sept. 30, 2015), <https://oig.tva.gov/reports/semi59.pdf>; see also Office of the Inspector General, TVA, Semiannual Report 8 (Oct. 1, 2010 - Mar. 31, 2011), <https://oig.tva.gov/reports/semi50.pdf>.

<sup>13</sup> Office of Inspector General, TVA, Report of Administrative Inquiry 1 (Mar. 23, 2010), <https://www.politico.com/states/f/?id=0000016b-d7ca-d6eb-a96f-fffefba70001>; Andrew Seidman & Catherine Dunn, Holtec Funneled \$50,000 to Federal Employee in Bid to Win Contract, Inspector General Report says, *The Philadelphia Inquirer*, Jul. 9, 2019, <https://www.inquirer.com/business/holtec-tennessee-valley-authority-nj-tax-credit-investigation-20190709.html>.

<sup>14</sup> Office of Inspector General, TVA, Report of Administrative Inquiry 4 (Mar. 23, 2010), <https://www.politico.com/states/f/?id=0000016b-d7ca-d6eb-a96f-fffefba70001>.

<sup>15</sup> Nancy Solomon & Jeff Pillets, *Holtec’s \$260 Million Tax Break Frozen by NJ EDA*, WNYC News, June 4, 2019, <https://www.wnyc.org/story/holtecs-260-million-tax-break-frozen-eda/>; see also Ryan Hutchins, *Task Force Uncovers Bombshell Report on Holtec*, Politico, Jul. 10, 2019, <https://www.politico.com/newsletters/new-jersey-playbook/2019/07/10/task-forceuncovers-bombshell-report-on-holtec-454824>.

<sup>16</sup> Notice of Violation to Holtec International, NRC OE EA 18-51, 2019 WL 2004418 (Apr. 24, 2019) (ADAMS Accession No. ML19072A128).

<sup>17</sup> Applicants’ Answer Opposing the Commonwealth’s Mot. to Supplement its Petition with New Information at 8 (May 2, 2019); see also Holtec Response to NRC Request for Additional Information at Encl., p.2 (Apr. 17, 2019) (ADAMS Accession No. ML19109A177). In its RAI Response, for example, Holtec relies on the size of SNC-Lavalin’s workforce to support its assertion that it will have adequate support for its planned multi-reactor decommissioning endeavor, but SNC-Lavalin is currently restructuring its business and reducing its work force. Compare *id.* at E-2, with, e.g. *infra* note 19.

bribery scandals.<sup>18</sup> Of course, any serious criminal or regulatory actions taken against Holtec, or its partners or executives, will have the potential of further draining resources and hampering Holtec's ability to perform decommissioning in a timely, safe and fiscally responsible manner.<sup>19</sup>

Those issues would be problematic if Holtec's obligations were limited to Pilgrim. But, as NRC Staff is aware, they are not limited to Pilgrim. In fact, Holtec is planning to embark on an uncharted path of attempting to decommission six nuclear power reactors at four different nuclear generating stations in four different states. The unprecedented nature of this endeavor and the cumulative impacts on Holtec's capacity to follow through on those commitments makes this license transfer application and Exemption Request sui generis and outside, for that reason alone, the license transfer actions contemplated by the Commission when it adopted its Subpart M Procedures (10 C.F.R. sub. pt. M). Holtec's unprecedented plan exacerbates all of the issues and concerns raised above and in the Commonwealth's Petition, Reply, and Motion to Supplement, and, in connection with the history described above, demands a heightened degree of scrutiny by NRC Staff and the Commission before any final action is taken on the license transfer or Exemption requests. While Holtec may be comfortable attempting to do what has never been done before, that is cold comfort for the Commonwealth and its citizens who have to accept Holtec as its new resident and the risks that accompany it all before the Commonwealth has an opportunity to present its views in an adjudicatory hearing. That concern is made all the worse by the fact that Holtec has asked the NRC to delete a pre-existing license condition upon which the public and the Commonwealth have relied that requires the Pilgrim licensee to have access to a \$50 million contingency fund for, among other things, "safe and prompt decommissioning." Renewed License No. DPR-35 at 4, ¶ J(4). Certainly, these facts preclude any "no significant hazards consideration" finding or reliance on a National Environmental Policy Act categorical exclusion since the proposed action does much more "than [simply] conform the license to reflect the transfer action." 10 C.F.R. § 2.1315. Indeed, granting the requested actions at Pilgrim and the other power stations will materially and significantly increase the risk to public health, safety, and the environment.

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<sup>18</sup> See, e.g., Richard L. Cassin, *Former SNC-Lavalin Chief Pleads Guilty in Bribery Case*, The FPCA Blog, Feb. 4, 2019, <https://www.fcpablog.com/blog/2019/2/4/former-snc-lavalinchief-pleads-guilty-in-bribery-case.html>; *SNC-Lavalin Opts for Judge-Only Trial in Corruption Case*, CBC News, June 28, 2019, <https://www.cbc.ca/news/canada/montreal/snc-lavalin-trialcorruption-bribery-judge-1.5193975>.

<sup>19</sup> Indeed, as the Commonwealth noted in its Reply in Support of its Motion to Supplement its Petition with New Information at 3 n.4 (May 9, 2019), SNC-Lavalin's legal troubles have had serious consequences for the company. Just recently, in fact, SNC-Lavalin made a dramatic cut to its dividend payments, lost half of its shareholder value this year, and announced a major restructuring and downsizing of its business. E.g., Shanti S. Nair, *SNC-Lavalin Cuts Dividend, Posts Wider-Than-Expected Loss as Costs Run High*, Reuters, Aug. 1, 2019, <https://www.reuters.com/article/us-snc-lavalin-results/snc-lavalin-cuts-dividend-posts-widerthan-expected-loss-as-costs-run-high-idUSKCN1UR4FQ>.



## 5.0 ENVIRONMENTAL CONSIDERATION

The subject application is for approval of a transfer of a license issued by the NRC and an associated conforming amendment required to reflect the approval of the transfer. Accordingly, the actions involved meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(21). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the approval of the transfer application and conforming license amendment.

## 6.0 CONCLUSION

Based on the foregoing, and subject to the conditions described herein, the NRC staff concludes that Holtec Pilgrim and HDI are financially qualified and HDI is technically qualified to hold the license for Pilgrim and the general license for the Pilgrim ISFSI, as described in the application, and engage in the proposed maintenance and decommissioning activities associated with the Pilgrim site. The NRC staff has concluded, based on the considerations discussed above, that (1) the proposed transferees are qualified to be the direct and indirect holders of Renewed Facility Operating License No. DPR-35 and (2) the direct and indirect transfer of the license is otherwise consistent with the applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

Additionally, the NRC staff finds that the Applicants have satisfied the NRC's decommissioning funding assurance requirements and the applicable onsite and offsite insurance requirements, as conditioned. Further, the NRC staff finds that the Applicants are not owned, controlled, or dominated by a foreign entity.

The NRC staff finds that proposed license transfer will be consistent with the requirements of the AEA and NRC regulations. The transfer of the licenses will not be inimical to the common defense and security and does not involve foreign ownership, control, or domination.

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Date:

Attachment:  
Closing Balance Calculations in Support  
of Applicants'/Transferee's PSDAR

**ATTACHMENT 1: Pilgrim Nuclear Power Station**  
**Closing Balance Calculations in Support of Applicants'/Transferee's Post-Shutdown**  
**Decommissioning Activities Report** (thousands of constant 2018 Dollars)  
*(reflects information from November 16, 2018, Entergy Nuclear Operations, Inc., and Holtec*  
*Decommissioning International submissions)*

Year	Opening DTF Balance	License Termination Costs <sup>d</sup>	Spent Fuel Management Costs	Site Restoration Costs	Interest Earned <sup>e</sup>	Closing Balance
2019 <sup>a</sup>	\$1,030,000	\$84,927	\$53,920	\$18	\$5,273	\$896,408
2020	\$896,408	\$79,292	\$84,905	\$28	\$10,397	\$742,579
2021	\$742,579	\$46,759	\$82,500	\$637	\$8,700	\$621,384
2022	\$621,384	\$103,197	\$3,332	\$23,630	\$6,975	\$498,200
2023	\$498,200	\$167,453	\$3,135	\$1,700	\$4,628	\$330,540
2024	\$330,540	\$95,694	\$3,225	\$9,236	\$3,158	\$225,543
2025 <sup>b</sup>	\$225,543	\$1,310	\$6,306	\$4,127	\$3,036	\$216,837
2026	\$216,837		\$5,952		\$2,995	\$213,879
2027	\$213,879		\$5,939		\$2,953	\$210,893
2028	\$210,893		\$5,952		\$2,910	\$207,851
2029	\$207,851		\$5,952		\$2,867	\$204,766
2030	\$204,766		\$7,212		\$2,805	\$200,359
2031	\$200,359		\$7,212		\$2,743	\$195,891
2032	\$195,891		\$7,212		\$2,679	\$191,358
2033	\$191,358		\$7,212		\$2,615	\$186,762
2034	\$186,762		\$7,193		\$2,550	\$182,119
2035	\$182,119		\$7,212		\$2,484	\$177,391
2036	\$177,391		\$7,230		\$2,416	\$172,577
2037	\$172,577		\$7,212		\$2,348	\$167,713
2038	\$167,713		\$7,193		\$2,279	\$162,800
2039	\$162,800		\$7,212		\$2,209	\$157,798
2040	\$157,798		\$7,212		\$2,138	\$152,724
2041	\$152,724		\$7,212		\$2,066	\$147,579
2042	\$147,579		\$7,212		\$1,993	\$142,361
2043	\$142,361		\$7,212		\$1,919	\$137,068
2044	\$137,068		\$7,212		\$1,844	\$131,701
2045	\$131,701		\$7,193		\$1,768	\$126,276
2046	\$126,276		\$7,212		\$1,691	\$120,755
2047	\$120,755		\$7,212		\$1,612	\$115,156
2048	\$115,156		\$7,230		\$1,533	\$109,458
2049	\$109,458		\$7,193		\$1,452	\$103,717
2050	\$103,717		\$7,212		\$1,370	\$97,876
2051	\$97,876		\$7,193		\$1,288	\$91,971

<b>ATTACHMENT 1: Pilgrim Nuclear Power Station</b> <b>Closing Balance Calculations in Support of Applicants'/Transferee's Post-Shutdown Decommissioning Activities Report</b> (thousands of constant 2018 dollars) <i>(reflects information from November 16, 2018, Entergy Nuclear Operations, Inc. (ENOI) and Holtec Decommissioning International submissions)</i>						
<b>Year</b>	<b>Opening DTF Balance</b>	<b>License Termination Costs <sup>d</sup></b>	<b>Spent Fuel Management Costs</b>	<b>Site Restoration Costs</b>	<b>Interest Earned <sup>e</sup></b>	<b>Closing Balance</b>
2052	\$91,971		\$7,230		\$1,203	\$85,944
2053	\$85,944		\$7,212		\$1,118	\$79,851
2054	\$79,851		\$7,212		\$1,031	\$73,671
2055	\$73,671		\$7,193		\$944	\$67,422
2056	\$67,422		\$7,212		\$855	\$61,065
2057	\$61,065		\$7,212		\$765	\$54,618
2058	\$54,618		\$7,212		\$673	\$48,080
2059	\$48,080		\$7,212		\$580	\$41,449
2060	\$41,449	\$4,296	\$7,212		\$425	\$30,367
2061	\$30,367	\$4,375	\$7,212		\$267	\$19,047
2062 <sup>c</sup>	\$19,047	\$4,358	\$7,193		\$106	\$7,602
2063	\$7,602	\$892	\$2,441	\$706	\$51	\$3,615
<b>Total</b>		<b>\$592,553</b>	<b>\$501,467</b>	<b>\$40,079</b>		

**a**—Reflects the value of the decommissioning trust fund (DTF) following closure of the equity sale, in 2019, from the current licensee to the Applicants, which does not include deductions for costs incurred by the current licensee, ENOI, before closure of the sale

**b**—Year in which the Pilgrim site meets partial site release criteria

**c**—Anticipated year in which the U.S. Department of Energy takes possession of spent fuel from the Pilgrim independent spent fuel storage installation (ISFSI)

**d**—Includes funding for ISFSI decommissioning

**e**—Based on Applicants' data, real rate of return applied by the Applicants is equal to approximately 1.42 percent, which considers growth of DTF net of taxes.