



10 CFR 50.75

10 CFR 50.82

March 31, 2020

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Oyster Creek Nuclear Generating Station  
Renewed Facility Operating License No. DPR-16  
NRC Docket No. 50-219 and 72-15

Pilgrim Nuclear Power Station  
Renewed Facility Operating License No. DPR-35  
NRC Docket No. 50-293 and 72-1044

Subject: Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations

- Reference:
- [1] Letter Exelon Generation Corporation to US NRC, "Oyster Creek, Application for Order Approving Direct Transfer of Renewed Facility Operating License and General License and Proposed Conforming License Amendment," dated August 31, 2018 (ML18243A489)
  - [2] Letter from Entergy Nuclear Operations, Inc. to US NRC, "Application for Order Consenting to Direct and Indirect Transfers of Control of Licenses and Approving Conforming License Amendment; Notification of Amendment to Decommissioning Trust Agreement; and Request for Exemption from 10 CFR 50.82 (a)(8)(i)(A), Pilgrim Nuclear Power Station," dated November 16, 2018 (ML18320A031)
  - [3] Letter from US NRC to Exelon Generation Company, LLC, "Order Approving Transfer of the Oyster Creek Nuclear Generating Station and Conforming License Amendment," dated June 20, 2019 (ML19095A458)
  - [4] Letter from US NRC to Entergy Nuclear Operations, Inc., "Pilgrim Nuclear Power Station—Order Approving Direct and Indirect Transfer of License and Conforming Amendment," dated August 22, 2019 (ML19170A101)



- [5] Letter, Holtec Decommissioning International, LLC to US NRC, "Notification of Revised Post-Shutdown Decommissioning Activities Report and Revised Site-Specific Decommissioning Cost Estimate for Oyster Creek Nuclear Generating Station," September 28, 2018 (ML18275A116)
- [6] Letter, Holtec Decommissioning International, LLC to US NRC, "Notification of Revised Post-Shutdown Decommissioning Activities Report and Revised Site-Specific Decommissioning Cost Estimate for Pilgrim Nuclear Power Station," November 16, 2018 (ML18320A040)

In accordance with 10 CFR 50.75(f)(1), 10 CFR 50.82(a)(8)(v), 10 CFR 50.82(a)(8)(vi), and 10 CFR 50.82(a)(8)(vii), Holtec Decommissioning International, LLC (HDI) is submitting the annual status of decommissioning funding, status of funding for managing irradiated fuel, and the financial assurance report for Oyster Creek Nuclear Generating Station (Oyster Creek) and Pilgrim Nuclear Power Station (Pilgrim). The annual decommissioning funding assurance reports for the period ending December 31, 2019 for Oyster Creek and Pilgrim are provided in Enclosures 1 and 2 to this letter respectively. The Attachment to this letter provides the methodology used to calculate the formula cost amount per 10 CFR 50.75(c).

On July 1, 2019, Oyster Creek was transferred to Oyster Creek Environmental Protection, LLC (OCEP) as the licensed owner and HDI as the licensed operator for decommissioning (References 1 and 3). On August 27, 2019, Pilgrim was transferred to Holtec Pilgrim, LLC (Holtec Pilgrim) as the licensed owner and HDI as the licensed operator for decommissioning (References 2 and 4). HDI prepared and submitted revised Post-Shutdown Decommissioning Activities Reports (PSDARs) including revised Site-Specific Decommissioning Cost Estimates (DCEs) for each of these sites (References 5 and 6).

The decommissioning funding assurance amount and the funding assurance for spent fuel management for each site is based on site-specific decommissioning cost estimates developed in accordance with 10 CFR 50.82(a) (References 5 and 6). The HDI revised PSDAR and DCE for each site are based on a transition to the DECON decommissioning status following license transfer allowing for the prompt decommissioning of each site and the unrestricted release of all portions of the site other than the ISFSI sooner than was planned by the previous site owners.

The HDI PSDARs describe the selected methods HDI plans to use for the decontamination, dismantlement, spent fuel management and site restoration of each site. The site-specific DCEs also include the estimated costs to decommission the Independent Spent Fuel Storage Installations (ISFSIs) following spent fuel and Greater than Class C (GTCC) waste removal from the site. References 5 and 6 provide the project scope and schedule along with the associated cost estimate for each site. The project scope includes efforts to remove fuel from the spent fuel pool and place it into long-term, dry cask storage at the ISFSI.



HDI's decommissioning management strategy for Oyster Creek and Pilgrim, including scope, schedule and cost estimates, were provided in the DECON Post-Shutdown Decommissioning Activities Reports (PSDARs) that were submitted to NRC in support of the respective applications for license transfer (References 5 and 6). NRC review of HDI's decommissioning management strategy, schedule and cost estimates as well as associated funding assurance was accomplished to support NRC approval of the transfer of the Oyster Creek and Pilgrim licenses to OCEP and Holtec Pilgrim as the licensed owner respectively and HDI as the licensed operator. Since the site transfers occurred in mid-year, the decommissioning funding, irradiated fuel management funding, and financial assurance status provided in Enclosures 1 and 2 cover the time period from July 1, 2019 through December 31, 2019 for Oyster Creek and August 27, 2019 through December 31, 2019 for Pilgrim. The Beginning of Year Fund Amount is the amount in the Nuclear Decommissioning Trust (NDT) on the date of license transfer for each site net of current tax liabilities. The costs expenditures and reimbursements documented in Enclosures 1 and 2 provide HDI's costs and reimbursements made since the transfer dates for each site.

The estimates provided in Enclosures 1 and 2, using the December 31, 2019 trust fund balances, indicate that Oyster Creek and Pilgrim have met the NRC's funding requirements. Accordingly, HDI concludes that no further action is required at this time to demonstrate adequate funding assurance for decommissioning the Oyster Creek and Pilgrim sites.

There are no regulatory commitments contained within this letter

If you should require any further information, please contact me at (856) 797-0900 x 3813.

Sincerely,

**Andrea L. Sterdis**  
Digitally signed by Andrea L. Sterdis  
DN: cn=Andrea L. Sterdis, c=US,  
o=HDI, ou=Holtec  
Decommissioning International,  
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Telephone (856) 797-0900

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Enclosures:

- (1) Annual Decommissioning Funding Assurance and Spent Fuel Management Report for Oyster Creek Nuclear Generating Station
- (2) Annual Decommissioning Funding Assurance and Spent Fuel Management Report for Pilgrim Nuclear Power Station

Attachment: Methodology Used to Calculate the Formula Cost Amount per 10 CFR 50.75(c)

cc: USNRC Regional Administrator, Region I  
USNRC Project Manager, NMSS Oyster Creek  
USNRC Project Manager, NMSS Pilgrim  
Massachusetts Emergency Management Agency (MEMA), Director  
New Jersey Bureau of Nuclear Engineering, Assistant Director Radiation Protection  
Element

**ENCLOSURE 1**

**Holtec Decommissioning International  
Oyster Creek Nuclear Generating Station  
Annual Decommissioning Funding and Spent Fuel Management  
Status and Financial Assurance Report  
As of December 31, 2019**

**(9 Pages)**

**Holtec Decommissioning International  
Oyster Creek Nuclear Power Station  
Annual Decommissioning Funding and Spent Fuel Management  
Status and Financial Assurance Report  
As of December 31, 2019**

As required by 10 CFR 50.75(f) and 50.82(a)(8), Holtec Decommissioning International (HDI) reports the following information for Oyster Creek Nuclear Generating Station:

**A. Formula Cost Amount per 10 CFR 50.75(c)**

Pursuant to 10 CFR 50.75(c), the 2020 estimated NRC formula cost is \$620,909,950. HDI does not use this calculation for any decommissioning cost estimates or evaluations.

**B. Current Decommissioning Cost Estimate**

The required minimum funding assurance amount for Oyster Creek as of December 31, 2019 is based on the site-specific Decommissioning Cost Estimate (DCE) developed in accordance with 10 CFR 50.82(a) (and submitted and reviewed as part of the approval of the license transfer application (Reference 1)). Additional reporting requirements are documented on Table 1 of this Enclosure. Table 1 provides HDI revised total estimate information as required by 10 CFR 50.82. The revised total estimate to complete decommissioning for the Oyster Creek site is **\$822M** (in 2019 dollars). Of that total cost estimate, the revised estimate for license termination expenses is **\$521M**, the current separate estimate of spent fuel management costs is **\$261M** and the current separate estimate for site restoration costs is **\$40M**.

**C. Current Decommissioning Fund Balance**

The Oyster Creek Nuclear Decommissioning Trust (NDT) fund balance as of December 31, 2019 was \$826M. This amount represents the market value of the NDT fund as of December 31, 2019 net of any material current income tax liability on realized gains, interest, dividends and other income of the trust. No additional amounts remain to be collected. The trust fund amount is the total available for decommissioning including costs of license termination decommissioning, spent fuel management, and site restoration activities. The total is provided because HDI received an exemption from 10 CFR 50.82(a)(8)(i)(A) to allow the Oyster Creek Trust fund to be used for site irradiated fuel management and site restoration costs (Reference 2).

**D. Assumptions Used Regarding Rates of Escalation for Decommissioning Costs, Earnings on Funds, and Other Factors Used in Funding Projections**

HDI has assumed a 2% real rate of return as allowed by 10 CFR 50.75(e)(1)(i).

**E. Rates used to Inflate Decommissioning Costs**

The estimates in the 2018 HDI Oyster Creek Revised PSDAR/Decommissioning Cost Estimate (DCE) (Reference 3) were provided in 2018 dollars. The estimates in the 2018 DCE have been inflated to 2019 dollars in the estimates provided in Table 1. The Bureau of Labor Statistics data provided the basis for the decommissioning cost estimate inflation rate forecast. Decommissioning costs are inflated using a weighted average of BLS indices for Labor, Energy, Consumer Price Index, Materials, and Equipment. For Burial inflation factor, HDI utilized NUREG-

## Enclosure 1

### Page E1-3 of E1-9

1307, Revision 17. HDI has used a factor of 1.02 to calculate the inflation to 2019 dollars. This is conservative as it does not credit the fixed price contracts.

#### **F. Current ISFSI Decommissioning Cost**

As shown in Table 1, the current detailed site-specific Independent Spent Fuel Storage Installation (ISFSI) decommissioning cost estimate is \$4.014M (2019 dollars). The ISFSI estimated costs are based on the estimated costs provided in the HDI Revised PSDAR/DCE (Reference 3) inflated using published inflation indices as previously discussed in item (E).

#### **G. Decommissioning Financial Assurance**

Financial assurance for decommissioning is provided by the prepayment method, coupled with an external trust fund, in accordance with 10 CFR 50.75(e)(1)(i) and 10 CFR 72.30(e)(1) as approved by NRC in their approval of the license transfer to Oyster Creek Environmental Protection (OCEP) and HDI.

#### **H. Changes in the Decommissioning Funding Plan Trust Agreement**

As part of the license transfer and sale of the Oyster Creek site to OCEP, a new trust agreement was established, effective July 1, 2019.

Please refer to Tables 1 and 2 of this Enclosure for additional required reporting data.

Table 2 provides a cash flow analysis using the revised decommissioning cost estimates developed by HDI. This cash flow analysis demonstrates that the Oyster Creek decommissioning trust fund is sufficiently funded to cover costs as estimated for the license termination, spent fuel management and site restoration activities necessary to complete safe and compliant decommissioning of the site.

In addition, HDI has included an updated schedule that reflects the current decommissioning plan. Figure 1 provides the revised schedule. The schedule revisions reflect actual work progress, further work planning, subcontract execution, and optimization since HDI assumed control of the site activities in July 2019. The estimate to complete and cash flow analyses provided in Table 1 confirm that these schedule revisions are not significant as defined in 10 CFR 50.82 (a)(7). HDI also has confirmed that the changes to the schedule remain bounded by the environmental evaluation included in the HDI Oyster Creek PSDAR (Reference 3).

#### **References:**

- 1) Letter from US NRC to Exelon Generation Company, LLC, "Order Approving Transfer of the Oyster Creek Nuclear Generating Station and Conforming License Amendment," dated June 20, 2019 (ML19095A458)
- 2) Letter from US NRC to Exelon Generation Company, LLC, "Oyster Creek Nuclear Power Station— Issuance of Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv)" dated June 20, 2019 (ML19113A204)
- 3) Letter, Holtec Decommissioning International, LLC to US NRC, "Notification of Revised Post-Shutdown Decommissioning Activities Report and Revised Site-Specific Decommissioning Cost Estimate for Oyster Creek Nuclear Generating Station," September 28, 2018 (ML18275A116)

**TABLE 1**

**Holtec Decommissioning International**  
**Oyster Creek Nuclear Generating Station**  
**Annual Decommissioning Financial Assurance and**  
**Spent Fuel Management Report**



Enclosure 1



ENCLOSURE 1

Table 1

Holtec Decommissioning International  
Oyster Creek Nuclear Generating Station

Summary Information as of December 31, 2019  
10 CFR 50.82(a)(8)(v)-(vii)

**Decommissioning Trust Fund Balance 10 CFR 50.75 (f)(1) and 10 CFR 50.82(a)(8)(v)(A)**

Year	Type of Trust	Fund Balance (2019 \$)	Comments
2019	Decommissioning Trust	\$826M	As of 12/31/2019; net of tax liabilities

**Other Financial Assurance Methods Being Relied Upon 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(B)**

NONE

**HDI Decommissioning Expenditures 10 CFR 50.82(a)(8)(v)(A) Since License Transfer**

Year	License Termination	Spent Fuel Mgmt	Site Restoration	Total	Comments
2019	\$54M	\$8M	\$0M	\$62M	2019 Costs in as-Spent Dollars

**Prior Year Expenditures Variance to Total HDI Estimated Cost 10 CFR 50.82(a)(8)(v)(B)**

Year	License Termination	Spent Fuel Mgmt	Site Restoration	Total	Comments
2019 Estimated	\$95M	\$2M	\$3M	\$99M	
2019 Actual	\$54M	\$8M	\$0M	\$62M	

Variance:

HDI has revised the estimated decommissioning costs (including the license termination, spent fuel management and site restoration costs) to reflect detailed project planning, contracting and site-specific information. The revised estimates have been inflated from 2018 dollars to December 31, 2019 dollars.

**Remaining Decommissioning Estimated Cost 10 CFR 50.82(a)(8)(v)(B) / (vii)(B)**

Year	License Termination	Spent Fuel	Site Restoration	Total	Comments
2020	\$521M	\$261M	\$40M	\$822M	Estimated in 2019 Dollars

**Decommissioning Criteria Upon Which the Estimate is Based 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(B)**

DECON

**Any Modification to Method of Providing Financial Assurance 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(C)**

NONE

**Any Material Changes to Trust Agreement Since Previous Report 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(D)**

No material changes. See item (H) in Enclosure 1

**Need for Additional Financial Assurance 10 CFR 50.75 (f)(1) and 10 CFR 50.82(a)(8)(v)(C)**

NONE

**TABLE 2**

**Holtec Decommissioning International**  
**Oyster Creek Nuclear Generating Station**  
**Annual Decommissioning Cash Flow Analysis**

Table 2

Oyster Creek Nuclear Generating Station - DECON Method								
Annual Cash Flow in Millions of 2019 Dollars								
Year	License Termination Cost	Spent Fuel Management Cost	Site Restoration Cost	Total Costs	Beginning of Year NDT Balance	Withdrawals	NDT Earnings <sup>1</sup>	Year Ending NDT Balance
2020	89	71	17	178	826 <sup>2</sup>	(190) <sup>3</sup>	13	649
2021	72	53	6	131	649	(131)	10	528
2022	84	4	2	90	528	(90)	9	447
2023	129	3	0	132	447	(132)	6	321
2024	125	3	13	141	321	(151)	4	184
2025	10	9	1	19	184	(19)	3	168
2026	0	8	0	8	168	(8)	3	163
2027	0	8	0	8	163	(8)	3	158
2028	0	8	0	8	158	(8)	3	154
2029	0	8	0	8	154	(8)	3	149
2030	0	8	0	8	149	(8)	3	144
2031	0	8	0	8	144	(8)	3	139
2032	0	8	0	8	139	(8)	3	133
2033	9	27	0	36	133	(36)	2	99
2034	2	27	0	29	99	(29)	1	71
2035	1	9	1	11	71	(11)	1	61
<b>Total<sup>4</sup></b>	<b>521</b>	<b>261</b>	<b>40</b>	<b>822</b>		<b>(835)</b>	<b>70</b>	

<sup>1</sup> NDT earnings reflect an assumed 2% Real Rate of Return (RRR)

<sup>2</sup> 2020 Beginning of Year NDT Balance is net of realized tax liabilities

<sup>3</sup> The 2020 NDT Withdrawal Amount includes \$13M for the reimbursement of HDI's 2019 expenses that were non reimbursed in 2019.

<sup>4</sup> Columns may not add due to rounding

**Figure 1**

**Holtec Decommissioning International**  
**Oyster Creek Nuclear Generating Station**  
**Decommissioning Schedule Timeline**



**ENCLOSURE 2**

**Holtec Decommissioning International  
Pilgrim Nuclear Power Station  
Annual Decommissioning Funding and Spent Fuel Management  
Status and Financial Assurance Report  
As of December 31, 2019**

**(10 Pages)**

**Holtec Decommissioning International  
Pilgrim Nuclear Power Station  
Annual Decommissioning Funding and Spent Fuel Management  
Status and Financial Assurance Report  
As of December 31, 2019**

As required by 10 CFR 50.75(f) and 50.82(a)(8), Holtec Decommissioning International (HDI) reports the following information for Pilgrim Nuclear Power Station:

**A. Formula Cost Amount per 10 CFR 50.75(c)**

Pursuant to 10 CFR 50.75(c), the 2020 estimated NRC formula cost is \$640,214,515. HDI does not use this calculation for any decommissioning cost estimates or evaluations.

**B. Current Decommissioning Cost Estimate**

The required minimum funding assurance amount for Pilgrim as of December 31, 2019 is based on the site-specific Decommissioning Cost Estimate (DCE) developed in accordance with 10 CFR 50.82(a) (and submitted and reviewed as part of the approval of the license transfer application (Reference 1)). Additional reporting requirements are documented on Table 1 of this Enclosure. Table 1 provides HDI revised total estimate information as required by 10 CFR 50.82. The revised total estimate to complete decommissioning for the Pilgrim site is **\$1,031M** (in 2019 dollars). Of that total cost estimate, the revised estimate for license termination expenses is **\$548M**, the current separate estimate of spent fuel management costs is **\$443M** and the current separate estimate for site restoration costs is **\$40M**.

**C. Current Decommissioning Fund Balance**

The Pilgrim Nuclear Decommissioning Trust (NDT) fund balance as of December 31, 2019 was \$979M. This amount represents the market value of the NDT fund as of December 31, 2019 net of any material current income tax liability on realized gains, interest, dividends and other income of the trust. No additional amounts remain to be collected. The trust fund amount is the total available for decommissioning including costs of license termination decommissioning, spent fuel management, and site restoration activities. The total is provided because HDI received an exemption from 10 CFR 50.82(a)(8)(i)(A) to allow the Pilgrim Trust fund to be used for site spent fuel management and site restoration costs (Reference 2).

**D. Assumptions Used Regarding Rates of Escalation for Decommissioning Costs, Earnings on Funds, and Other Factors Used in Funding Projections**

HDI has assumed a 2% real rate of return as allowed by 10 CFR 50.75(3)(1)(i).

**E. Rates used to Inflate Decommissioning Costs**

The estimates in the 2018 HDI Pilgrim Revised PSDAR/Decommissioning Cost Estimate (DCE) (Reference 3) were provided in 2018 dollars. The estimates in the 2018 DCE have been inflated to 2019 dollars in the estimates provided in Table 1. The Bureau of Labor Statistics data provided the basis for the decommissioning cost estimate inflation rate forecast. Decommissioning costs are inflated using a weighted average of BLS indices for Labor, Energy, Consumer Price Index, Materials, and Equipment. For Burial inflation factor, HDI utilized NUREG-

## Enclosure 2

### Page E2-3 of E2-10

1307, Revision 17. HDI has used a factor of 1.02 to calculate the inflation to 2019 dollars. This is conservative as it does not credit the fixed price contracts.

#### **F. Current ISFSI Decommissioning Cost**

As shown in Table 1, the current detailed site-specific Independent Spent Fuel Storage Installation (ISFSI) decommissioning cost estimate is \$4.267M (2019 dollars). The ISFSI estimated costs are based on the estimated costs provided in the HDI Revised PSDAR/DCE (Reference 3) inflated using published inflation indices as previously discussed in item (E).

#### **G. Decommissioning Financial Assurance**

Financial assurance for decommissioning is provided by the prepayment method, coupled with an external trust fund, in accordance with 10 CFR 50.75(e)(1)(i) and 10 CFR 72.30(e)(1) as approved by NRC in their approval of the license transfer to Holtec Pilgrim, LLC and HDI.

#### **H. Changes in the Decommissioning Funding Plan Trust Agreement**

Following the license transfer and sale of the Pilgrim site to Holtec Pilgrim, the trust fund agreement was renamed, effective March 10, 2020.

Please refer to Tables 1 and 2 of this Enclosure for additional required reporting data.

Table 2 provides a cash flow analysis using the revised decommissioning cost estimates developed by HDI. This cash flow analysis demonstrates that the Pilgrim decommissioning trust fund is sufficiently funded to cover costs as estimated for the license termination, spent fuel management and site restoration activities necessary to complete safe and compliant decommissioning of the site.

In addition, HDI has included an updated schedule that reflects the current decommissioning plan. Figure 1 provides the revised schedule. The schedule revisions reflect actual work progress, further work planning and flattening, subcontract execution, and optimization since HDI assumed control of the site activities in August 2019. The estimate to complete and cash flow analyses provided in Table 1 confirm that these schedule revisions are not significant as defined in 10 CFR 50.82 (a)(7). HDI also has confirmed that the changes to the schedule remain bounded by the environmental evaluation included in the HDI Pilgrim PSDAR (Reference 3).

#### **References:**


- 1) Letter from US NRC to Entergy Nuclear Operations, Inc, "Pilgrim Nuclear Power Station—Order Approving Direct and Indirect Transfer of License and Conforming Amendment," dated August 22, 2019 (ML19170A101)
- 2) Letter from US NRC to Entergy Nuclear Operations, Inc., "Pilgrim Nuclear Power Station—Request for Exemption from 10 CFR 50.82(a)(8)(i)(A) for Holtec Decommissioning International, LLC" dated August 22, 2019 (ML19192A083)
- 3) Letter, Holtec Decommissioning International, LLC to US NRC, "Notification of Revised Post-Shutdown Decommissioning Activities Report and Revised Site-Specific Decommissioning Cost Estimate for Pilgrim Nuclear Power Station," November 16, 2018 (ML18320A040)



**TABLE 1**

**Holtec Decommissioning International  
Pilgrim Nuclear Power Station  
Annual Decommissioning Financial Assurance and  
Spent Fuel Management Report**

Enclosure 2

 <div style="text-align: center;"> <p>ENCLOSURE 2</p> <p><b>Table 1</b></p> <p>Holtec Decommissioning International</p> <p>Pilgrim Nuclear Power Station</p> <p>Summary Information as of December 31, 2019</p> <p>10 CFR 50.82(a)(8)(v)-(vii)</p> </div>					
<b>Decommissioning Trust Fund Balance 10 CFR 50.75 (f)(1) and 10 CFR 50.82(a)(8)(v)(A)</b>					
Year	Type of Trust	Fund Balance (2019 \$)			Comments
2019	Decommissioning Trust	\$979M			As of 12/31/2019; net of tax liabilities
<b>Other Financial Assurance Methods Being Relied Upon 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(B)</b>					
NONE					
<b>HDI Decommissioning Expenditures 10 CFR 50.82(a)(8)(v)(A) Since License Transfer</b>					
Year	License Termination	Spent Fuel Mgmt	Site Restoration	Total	Comments
2019	\$45M	\$56M	\$0M	\$101M	2019 Costs in as-Spent Dollars
<b>Prior Year Expenditures Variance to Total HDI Estimated Cost 10 CFR 50.82(a)(8)(v)(B)</b>					
Year	License Termination	Spent Fuel Mgmt	Site Restoration	Total	Comments
2019 Estimated	\$85M	\$54M	\$0M	\$139M	
2019 Actual	\$45M	\$56M	\$0M	\$101M	
<p>Variance:</p> <p>HDI has revised the estimated decommissioning costs (including the license termination, spent fuel management and site restoration costs) to reflect detailed project planning, contracting and site-specific information. The revised estimates have been inflated from 2018 dollars to December 31, 2019 dollars.</p>					
<b>Remaining Decommissioning Estimated Cost 10 CFR 50.82(a)(8)(v)(B) /(vii)(B)</b>					
Year	License Termination	Spent Fuel	Site Restoration	Total	Comments
2020	\$548M	\$443M	\$40M	\$1,031M	Estimated in 2019 Dollars
<b>Decommissioning Criteria Upon Which the Estimate is Based 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(B)</b>					
DECON					
<b>Any Modification to Method of Providing Financial Assurance 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(C)</b>					
NONE					
<b>Any Material Changes to Trust Agreement Since Previous Report 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(D)</b>					
No material changes. See item (H) in Enclosure 1					
<b>Need for Additional Financial Assurance 10 CFR 50.75 (f)(1) and 10 CFR 50.82(a)(8)(v)(C)</b>					
NONE					

**TABLE 2**

**Holtec Decommissioning International**  
**Pilgrim Nuclear Power Station**  
**Annual Decommissioning Cash Flow Analysis**

TABLE 2

<b>Pilgrim Nuclear Power Station - DECON Method</b>								
Annual Cash Flow in Millions of 2019 Dollars								
Year	License Termination Cost	Spent Fuel Management Cost	Site Restoration Cost	Total Costs	Beginning of Year NDT Balance	Withdrawals	NDT Earnings <sup>1</sup>	Year Ending NDT Balance
2020	59	66		125	979 <sup>2</sup>	(158) <sup>3</sup>	16	837
2021	70	89	1	159	837	(159)	14	691
2022	118	3	15	137	691	(137)	11	566
2023	140	3	2	145	566	(145)	8	429
2024	98	3	9	110	429	(110)	6	325
2025	25	8	3	36	325	(36)	6	295
2026	18	8	3	29	295	(29)	5	271
2027	4	7	8	19	271	(19)	5	257
2028		6		6	257	(6)	5	256
2029		6		6	256	(6)	5	255
2030		7		7	255	(7)	5	253
2031		7		7	253	(7)	5	251
2032		7		7	251	(7)	5	248
2033		7		7	248	(7)	5	246
2034		7		7	246	(7)	5	243
2035		7		7	243	(7)	5	240
2036		7		7	240	(7)	5	238
2037		7		7	238	(7)	5	235
2038		7		7	235	(7)	5	232
2039		7		7	232	(7)	4	229
2040		7		7	229	(7)	4	227
2041		7		7	227	(7)	4	224
2042		7		7	224	(7)	4	221
2043		7		7	221	(7)	4	218
2044		7		7	218	(7)	4	214
2045		7		7	214	(7)	4	211
2046		7		7	211	(7)	4	208
2047		7		7	208	(7)	4	205
2048		7		7	205	(7)	4	201
2049		7		7	201	(7)	4	198
2050		7		7	198	(7)	4	194
2051		7		7	194	(7)	4	191
2052		7		7	191	(7)	4	187

<sup>1</sup> NDT earnings reflect an assumed 2% Real Rate of Return (RRR).

<sup>2</sup> The 2020 Beginning of Year NDT Balance is net of tax liabilities.

<sup>3</sup> The 2020 NDT Withdrawal Amount includes \$33M for the reimbursement of 2019 expenses that were not reimbursed in 2019.

<sup>4</sup> Columns may not add due to rounding.

Enclosure 2

<b>Pilgrim Nuclear Power Station - DECON Method</b>								
Annual Cash Flow in Millions of 2019 Dollars								
Year	License Termination Cost	Spent Fuel Management Cost	Site Restoration Cost	Total Costs	Beginning of Year NDT Balance	Withdrawals	NDT Earnings <sup>1</sup>	Year Ending NDT Balance
2053		7		7	187	(7)	4	183
2054		7		7	183	(7)	4	179
2055		7		7	179	(7)	3	176
2056		7		7	176	(7)	3	172
2057		7		7	172	(7)	3	168
2058		7		7	168	(7)	3	163
2059		7		7	163	(7)	3	159
2060	4	7		12	159	(12)	3	151
2061	4	7		12	151	(12)	3	142
2062	4	7		12	142	(12)	3	132
2063	1	2	1	4	132	(4)	3	131
<b>Total<sup>4</sup></b>	548	443	40	1,031		(1,064)	217	

<sup>1</sup> NDT earnings reflect an assumed 2% Real Rate of Return (RRR).

<sup>2</sup> The 2020 Beginning of Year NDT Balance is net of tax liabilities.

<sup>3</sup> The 2020 NDT Withdrawal Amount includes \$33M for the reimbursement of HDI 2019 expenses that were not reimbursed in 2019.

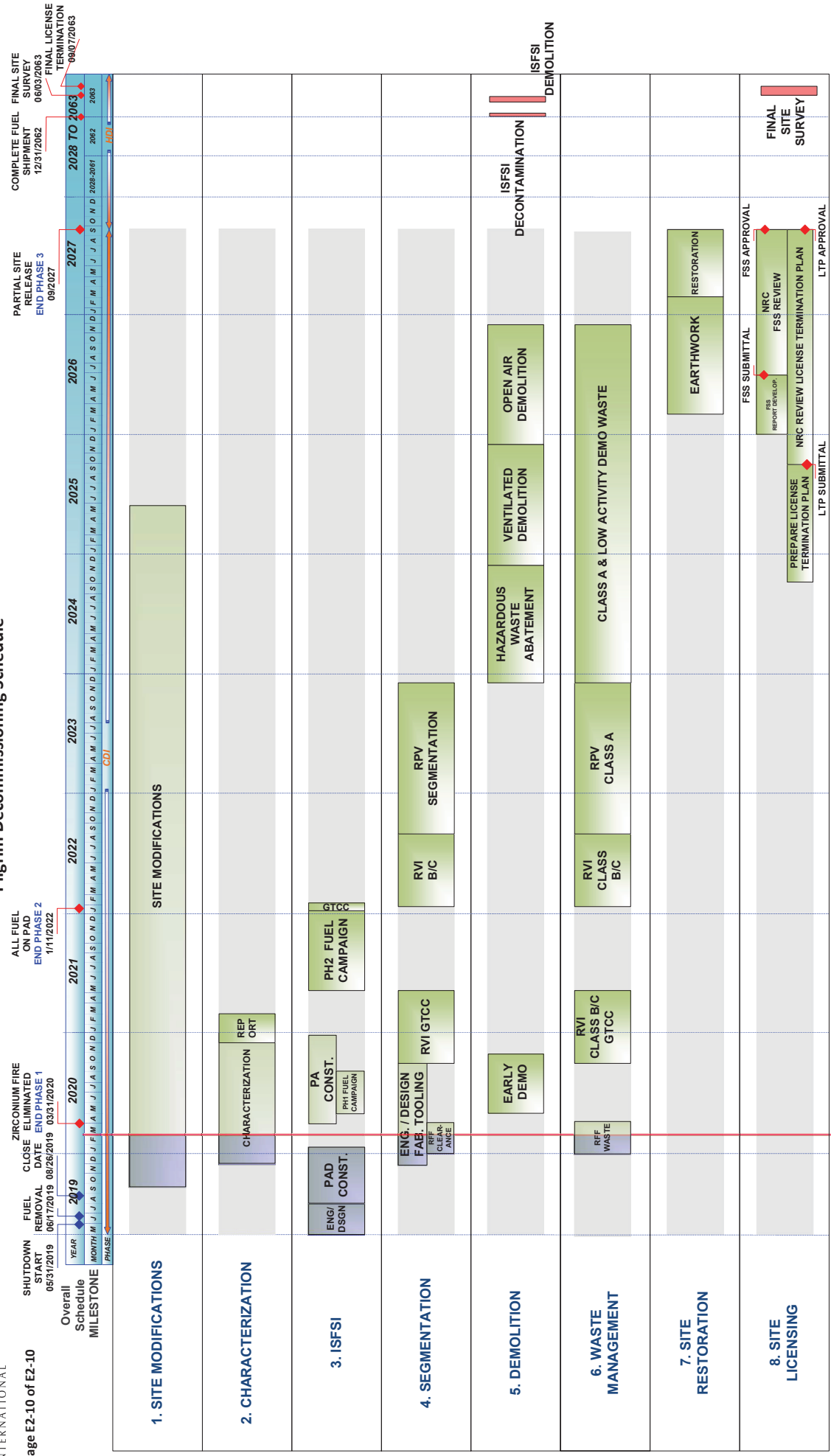
<sup>4</sup> Columns may not add due to rounding.

**Figure 1**

**Holtec Decommissioning International**

**Pilgrim Nuclear Power Station  
Decommissioning Schedule Timeline**

Enclosure 2  
Figure 1  
Pilgrim Decommissioning Schedule



**Holtec Decommissioning International  
Annual Decommissioning Funding and Spent Fuel Management  
Status and Financial Assurance Report**

**ATTACHMENT**

**Methodology Used to Calculate the Formula Cost Amount per 10 CFR 50.75(c)**

**(3 Pages)**



**Holtec Decommissioning International  
Annual Report on the Status of Decommissioning Funding for  
Reactors and Independent Spent Fuel Storage Installations (ISFSIs)  
Methodology Used to Calculate the Formula Cost Amount per 10 CFR 50.75(c)**

The labor, energy and burial indexes used are consistent with those described in NUREG-1307, Revision 17, issued February 2019.

The current labor cost indexes used are obtained from the Employment Cost Index published by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). Specifically, HDI used the Employment Cost Index for total compensation for private industry workers in the Northeast Region. The labor adjustment factors were calculated according to Section 3.2 of NUREG-1307, Revision 17 using fourth quarter 2019 data. Table 1 shows the data used for this calculation.

**Table 1: Northeast Region Labor Adjustment Factor**

Applicable Site	Series ID	4Q2019 Index Number	Labor Adjustment Factor (L <sub>x</sub> )
Oyster Creek	CIU2010000000210I	140.7	3.04
Pilgrim	CIU2010000000210I	140.7	3.04

The current energy cost indexes used are obtained from Producer Price Indexes (PPI) – Commodities, published by the U.S. Department of Labor, BLS. Specifically, HDI used the PPI for industrial electric power (WPU0543) and light fuel oils (WPU0573). The energy adjustment factors were calculated according to Section 3.3 of NUREG-1307, Revision 17, using December 2019 data. Table 2 shows the data used for this calculation.

**Table 2: Energy Adjustment Factors**

WPU0543—January 1986 (base value)	114.2
WPU0573—January 1986 (base value)	82.0
WPU0543—December 2019 (preliminary value)	237.9
WPU0573—December 2019 (preliminary value)	222.6
Industrial electric power adjustment factor— (P <sub>x</sub> )	2.083
Light Fuel oil adjustment factor— (F <sub>x</sub> )	2.715
Energy Adjustment Factor (BWR)	2.374

The waste burial adjustment factors are taken from Table 2-1 of NUREG-1307, Revision 17, based on 2019 data. The adjustment factors HDI used assume a combination of compact-affiliated and non-compact facilities as applicable.

LLW Burial Site	Reactor Type	Decommissioning Site	Combination of Compact-Affiliated and Non-Compact Disposal Facilities Waste Adjustment Factor —(B <sub>x</sub> )	Generators Located in Unaffiliated States —(B <sub>x</sub> )
South Carolina site Atlantic Compact	BWR	Oyster Creek	12.872	N/A
Generic LLW	BWR	Pilgrim	N/A	13.422

The calculation methodology used for all adjustment factors is consistent with NUREG-1307, Revision 17.

Site	Escalation Factors —(L <sub>x</sub> ), (E <sub>x</sub> ), (B <sub>x</sub> )		Escalation Factor Formula 10 CFR 50.75(c)(2)	BWR Escalation Factor	1986 BWR Base Year \$ Escalated \$122,252,000*Factor
Oyster Creek	(L <sub>x</sub> )	3.04	0.65(L)+0.13(E)+0.22(B)	5.12	\$620,909,950
	(E <sub>x</sub> )	2.34			
	(B <sub>x</sub> )	12.872			
Pilgrim	(L <sub>x</sub> )	3.04	0.65(L)+0.13(E)+0.22(B)	5.12	\$640,214,515
	(E <sub>x</sub> )	2.34			
	(B <sub>x</sub> )	13.422			