



NorthStar Vermont Yankee, LLC

Vermont Yankee Nuclear Power Station

320 Governor Hunt Road

Vernon, VT 05354

Office: 802.451.5354

24-Hour Emergency Response: 800.283.2933

The World's Most Comprehensive Facility & Infrastructure Solutions Company - **We Bring Answers.**

Scott E. State, P.E.

Chief Nuclear Officer

10 CFR 50.75(f)(1)

10 CFR 50.82(a)(8)(v)

10 CFR 50.82 82(a)(8)(vii)

BVY 23-006

March 29, 2023

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Status of Decommissioning and Spent Fuel Management Fund
for the Year Ending 2022
Vermont Yankee Nuclear Power Station
Docket Nos. 50-271 and 72-59
License No. DPR-28

Dear Sir or Madam:

10 CFR 50.75(f)(1) requires each shutdown power reactor licensee to annually report to the NRC the status of their decommissioning financial assurance by March 31.


10 CFR 50.82(a)(8)(v) & (vii) require that after submitting its site-specific decommissioning cost estimate pursuant to 10 CFR 50.82(a)(4)(i), a licensee must annually submit to the NRC, by March 31, a report on the status of its decommissioning expenditures, remaining costs, and funding assurance levels, as well as a report on the status of its funding for managing irradiated fuel.

Accordingly, NorthStar Vermont Yankee, LLC, hereby submits the status of its decommissioning financial assurance (Attachment 1) and the status of the funding for managing irradiated fuel (Attachment 2) for Vermont Yankee Nuclear Power Station. All or most of the spent fuel management costs are a liability of the U.S. Government as a result of its breach of the spent fuel disposal contract.

This letter contains no new regulatory commitments.

Should you have any questions concerning this letter, or require additional information, please contact me at 212.951.3660.

Best Regards,
NorthStar Vermont Yankee, LLC

By: 

Scott E. State, P.E.
Chief Nuclear Officer

- Attachment 1: Status of Decommissioning Funding
- Attachment 2: Irradiated Fuel Management Funding Analysis
- Attachment 3: Annual Cash Flow Analysis

cc: Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Rd., Suite 102
King of Prussia, PA 19406

Commissioner
Vermont Department of Public Service
112 State Street – Drawer 20
Montpelier, Vermont 05602-2601

Mr. John E. Matthews
JEMatthews Consulting LLC
1135 Registry Boulevard
St. Augustine, FL 32092

Mr. Gregory G. DiCarlo, Vice President & General Counsel
NorthStar Group Services, Inc.
2760 South Falkenburg Road
Riverview, FL 33578

Attachment 1

Vermont Yankee Nuclear Power Station

Status of Decommissioning Funding
(2 pages)

NorthStar Vermont Yankee, LLC
Status of Decommissioning Funding Vermont Yankee Nuclear Power Station
As of December 31, 2022 - 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)

10 CFR 50.75(f)(1)

1. Minimum Financial Assurance (MFA)	\$184.247 million ^[Note 1]
2. ISFSI Obligation as of 12/31/2022	\$3.454 million ^[Note 2]
3. Decommissioning Trust Fund & Escrow Account Total as of 12/31/2022	\$219.839 million ^[Note 3]
4. A schedule of the annual amounts remaining to be collected (for spent fuel management)	\$276.477 million ^[Note 4]
5. Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
6. Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
7. Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	No
8. Any material changes to trust agreements	No

Note 1: This amount is based upon total DECON expenditures for radiological remediation and license termination set forth in the updated Decommissioning Funding Assurance Plan and PROMPT DECON analysis provided in Attachment 3. This is the amount of decommissioning funds estimated to be required for remaining License Termination Costs.

Note 2: From "Notification of Revised Post-Shutdown Decommissioning Activities Report (Revised PSDAR)," dated April 6, 2017 (ML17096A394) – reference Table 2, 'License Termination' column.

Note 3: NDT Balance - \$166.581 million plus Financial Assurance Escrow Balance - \$53.258 million.

Note 4: Cost Recovery from DOE for breach of Standard Contract - \$266.477 million plus \$10.000 million DOE Round 3 Cost Recovery (2024) payment via Entergy.

NorthStar Vermont Yankee, LLC
Status of Decommissioning Funding Vermont Yankee Nuclear Power Station
As of December 31, 2022 - 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)

10 CFR 50.82(a)(8)(v) & (vi)

1. Cumulative decommissioning spending through 12/31/2022	\$378.959 million ^[Note1]
2. 2022 decommissioning spending	\$84.822 million ^[Note2]
3. Decommissioning Trust Fund & Escrow Account Total as of 12/31/2022	\$305.372 million ^[Note 3]
4. Additional planned contributions to the Financial Assurance Escrow Account	None
5. Estimated costs to complete from latest estimate	\$184.247 million ^[Note 4]
6. Estimate is based on unrestricted release of the site per 10 CFR 20.1402	
7. Modifications to financial assurance since last report	See above in 10 CFR 50.75 information
8. Any material changes to trust agreements	See above in 10 CFR 50.75 information

Note 1: Cumulative spending by NorthStar thru December 31, 2022, was \$378.959 million. (\$355.095 million License Termination; \$23.864 million for Spent Fuel Management).

Note 2: 2022 spending by NorthStar was \$84.822 million. (\$80.581. million License Termination; \$4.241 million for Spent Fuel Management).

Note 3: This amount is based upon total DECON expenditures for radiological remediation and license termination set forth in the updated Decommissioning Funding Assurance Plan and PROMPT DECON analysis provided in Attachment 3.

Note 4: This is the amount of decommissioning funds estimated to be required for remaining License Termination Costs.

Attachment 2

Vermont Yankee Nuclear Power Station
Irradiated Fuel Management Funding Analysis
(1 page)

**NorthStar Vermont Yankee, LLC
Irradiated Fuel Management Funding Analysis
As of December 31, 2022 - 10 CFR 50.82(a)(8)(vii)**

10 CFR 50.82(a)(8)(vii)

1. Funds available to cover the cost of managing irradiated fuel, estimate of future recoveries as of December 31, 2022	\$289.380 million ^[Note1]
2. Projected costs to manage fuel until DOE Removal (See Table 3 – Column 2)	\$249.513 million
3. Plan as Required	See Note 2 and 3

Note 1: Funds available to cover the cost of managing irradiated fuel as of December 31, 2022, (\$289.380 million) include: (a) The anticipated ending balance in the decommissioning fund at the end of decommissioning in 2053 (\$12.903 million) plus (b) Spent Fuel Management cost reimbursement from the Department of Energy (DOE) from 2023 through 2053 (\$276.477 million).

Note 2: The above table demonstrates that the Vermont Yankee decommissioning fund is adequately funded for all license termination activities and spent fuel management activities.

Note 3: The third of the three conditions of the Order that provided consent to the direct and indirect transfer of the Vermont Yankee (VY) license from Entergy Nuclear Operations, Inc. (ENOI) and Entergy Nuclear Vermont Yankee, to NorthStar Nuclear Decommissioning Company, LLC (Reference 1) required that a Performance Bond be obtained “if a Settlement Agreement with the U.S. Department of Energy (DOE), on DOE reimbursements for spent fuel management expenses, is not entered into by January 1, 2022.” On December 31, 2022, NorthStar Vermont Yankee provided to the NRC documentary evidence of the required performance bond (Reference 2).

References:

1. Letter, USNRC to Entergy Nuclear Operations, Inc., "Order Approving Transfer of the License for the Vermont Yankee Nuclear Power Station and Conforming License Amendment (EPID# L-2017-LLM-0002)," dated October 11, 2018, NVY 18-021 (ML18242A638).
2. Letter, NorthStar Vermont Yankee to USNRC, “Documentary Evidence of Performance Bond,” dated December 31, 2022, BVY 22-030 (ML22365A000).

Attachment 3

Vermont Yankee Nuclear Power Station

Annual Cash Flow Analysis
(4 pages)

On October 11, 2018, the NRC issued an order approving the transfer of the Vermont Yankee Nuclear Power Station Renewed Facility Operating License No. DPR-28 and the transfer of the generally licensed Vermont Yankee Independent Spent Fuel Storage Installation from Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. to NorthStar Nuclear Decommissioning Company, LLC (NNDC) and NorthStar Vermont Yankee, LLC (NVY) (Reference 1). On January 11, 2019, the NRC issued the conforming license amendment to reflect the direct transfer of these licenses for Vermont Yankee (Reference 2).

Total funding available for the Vermont Yankee decommissioning as of December 31, 2022, was \$219.839 million, which includes the decommissioning trust fund balance of \$166.581 million plus the Financial Assurance Escrow balance of \$53.258 million. Table 3 of the site-specific decommissioning cost estimate (Reference 3, Attachment) set forth the estimated annual expenditures for license termination and spent fuel management, respectively. The decommissioning cost estimate was subsequently updated in June 2022 (Reference 4). A cash flow analysis utilizing this information is included in Table 3 of this attachment.

The cash flow analysis demonstrates that the Vermont Yankee decommissioning trust fund was sufficiently funded for all license termination activities and certain spent fuel management activities (i.e., operational costs) as of December 31, 2022. Costs related to spent fuel management operations (e.g., operations and maintenance costs for Independent Spent Fuel Storage Installation, totaling approximately \$249.513 million, Table 3 Column 2) are planned to be funded from the decommissioning trust fund and recoveries from the U.S. Department of Energy.

NVY has determined that use of a DECON analysis shows that as of December 31, 2022 there was reasonable assurance that adequate funds will be available for the decommissioning process in compliance with NRC decommissioning funding assurance rules.

Pursuant to 10 CFR 50.75(e)(1)(i), "A licensee that has prepaid funds based on a site-specific estimate under § 50.75(b)(1) of this section may take credit for projected earnings on the prepaid decommissioning trust funds, using up to a 2 percent annual real rate of return from the time of future funds' collection through the projected decommissioning period, provided that the site-specific estimate is based on a period of safe storage that is specifically described in the estimate." NVY understands that a facility-specific analysis may be used for demonstrating the adequacy of decommissioning funds, provided that "the NRC-required cost estimate for decommissioning costs as defined in 10 CFR 50.2 is equal to or greater than the amount stated in the formulas in 10 CFR 50.75(c)(1) and (2) as the basis for justifying a higher than minimum funding level" (Regulatory Guide 1.159 Rev. 2, Section 1.1.1.).

NVY also understands that NRC should be provided the analysis, and that the analysis should include data for each year of the analysis. An updated decommissioning estimate was provided with the licensee's Post Shutdown Decommissioning Activities Report on April 6, 2017 (Reference 3).

The updated Vermont Yankee site-specific decommissioning cost estimate is based on initiating DECON on January 11, 2019 and completing DECON by December 31, 2026. Table 3 below provides the annual license termination and spent fuel management costs computed in the updated estimate. The decommissioning trust fund (DTF) ending balance is escalated each year by the 2% real growth figure allowed pursuant to 10 CFR 50.75(e)(1)(i).

Thus, considering the fund balance of \$219.839 million, as of December 31, 2022, and projected fund contributions and earnings during the DECON period (assuming an annual 2% growth rate), the trust fund is expected to have adequate funds for completion of license termination and the operational spent fuel management activities that will be funded by the trust fund.

References:

1. Letter, USNRC to Entergy Nuclear Operations, Inc., "Order Approving Transfer of the License for the Vermont Yankee Nuclear Power Station and Conforming License Amendment (EPID# L-2017-LLM-0002)," dated October 11, 2018, NVEY 18-021 (ML18242A638)
2. Letter, USNRC to Vermont Yankee Nuclear Power Station, "Issuance of Amendment Re: Application for Order Approving Direct and Indirect Transfer of Renewed Operating License and Independent Spent Fuel Storage Installation General License and Conforming Amendment (EPID# L-2017-LLM-0002)," dated January 11, 2019, NVEY 19-001 (ML18347B360)
3. Letter, NorthStar Group Services, Inc. to USNRC, "Post Shutdown Decommissioning Activities Report" dated April 6, 2017 (ML17096A394).
4. Letter, NorthStar Group Services, Inc. to USNRC, "Notification of Revised Decommissioning Cost Estimate" dated June 17, 2022, BVY 22-013 (ML22171A011).

Table 3

Vermont Yankee Nuclear Power Station - PROMPT DECON Methodology									
Annual Cash Flow Analysis - Total License Termination, Spent Fuel Management									
(Thousands of 2023 Dollars) - See column definitions below									
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
Year	License Termination Cost	Spent Fuel Cost	Total Expenses	Beginning of Period Funded Balance	Withdrawals	Contributions DOE Recovery	Contributions NorthStar Escrow Deposits / Distributions	Annual Earnings on Fund	End-Of-Year Fund Balance
2023	\$76,638	\$4,241	\$80,879	\$219,839	\$80,879	\$0	\$0	\$2,779	\$141,739
2024	\$65,206	\$4,241	\$69,447	\$141,739	\$69,447	\$10,000	\$0	\$1,646	\$83,938
2025	\$29,560	\$4,241	\$33,801	\$83,938	\$33,801	\$21,205	\$0	\$1,427	\$72,769
2026	\$9,390	\$4,241	\$13,631	\$72,769	\$13,631	\$8,482	\$0	\$1,352	\$68,973
2027		\$8,944	\$8,944	\$68,973	\$8,944	\$4,241	-\$61,149	\$1,285	\$4,406
2028		\$8,944	\$8,944	\$4,406	\$8,944	\$8,944	\$0	\$88	\$4,494
2029		\$8,944	\$8,944	\$4,494	\$8,944	\$8,944	\$0	\$90	\$4,584
2030		\$8,944	\$8,944	\$4,584	\$8,944	\$8,944	\$0	\$92	\$4,676
2031		\$8,944	\$8,944	\$4,676	\$8,944	\$8,944	\$0	\$94	\$4,769
2032		\$8,944	\$8,944	\$4,769	\$8,944	\$8,944	\$0	\$95	\$4,865
2033		\$8,944	\$8,944	\$4,865	\$8,944	\$8,944	\$0	\$97	\$4,962
2034		\$8,944	\$8,944	\$4,962	\$8,944	\$8,944	\$0	\$99	\$5,061
2035		\$8,944	\$8,944	\$5,061	\$8,944	\$8,944	\$0	\$101	\$5,162
2036		\$8,944	\$8,944	\$5,162	\$8,944	\$8,944	\$0	\$103	\$5,266
2037		\$8,944	\$8,944	\$5,266	\$8,944	\$8,944	\$0	\$105	\$5,371
2038		\$8,944	\$8,944	\$5,371	\$8,944	\$8,944	\$0	\$107	\$5,478
2039		\$8,944	\$8,944	\$5,478	\$8,944	\$8,944	\$0	\$110	\$5,588
2040		\$8,944	\$8,944	\$5,588	\$8,944	\$8,944	\$0	\$112	\$5,700
2041		\$8,944	\$8,944	\$5,700	\$8,944	\$8,944	\$0	\$114	\$5,814
2042		\$8,944	\$8,944	\$5,814	\$8,944	\$8,944	\$0	\$116	\$5,930
2043		\$8,944	\$8,944	\$5,930	\$8,944	\$8,944	\$0	\$119	\$6,048
2044		\$8,944	\$8,944	\$6,048	\$8,944	\$8,944	\$0	\$121	\$6,169
2045		\$8,944	\$8,944	\$6,169	\$8,944	\$8,944	\$0	\$123	\$6,293
2046		\$8,944	\$8,944	\$6,293	\$8,944	\$8,944	\$0	\$126	\$6,419
2047		\$8,944	\$8,944	\$6,419	\$8,944	\$8,944	\$0	\$128	\$6,547
2048		\$8,944	\$8,944	\$6,547	\$8,944	\$8,944	\$0	\$131	\$6,678
2049		\$8,944	\$8,944	\$6,678	\$8,944	\$8,944	\$0	\$134	\$6,811
2050		\$8,944	\$8,944	\$6,811	\$8,944	\$8,944	\$0	\$136	\$6,948
2051		\$8,944	\$8,944	\$6,948	\$8,944	\$8,944	\$0	\$139	\$7,087
2052	\$3,454	\$8,944	\$12,398	\$7,087	\$12,398	\$8,944	\$0	\$73	\$3,705
2053				\$3,705	\$0	\$8,944	\$0	\$253	\$12,903
TOTAL	\$184,247	\$249,513	\$433,760	\$219,839	\$433,760	\$276,477	-\$61,149	\$11,496	\$12,903

Table 3 Definitions:

- Column 1:** **License Termination Cost**
Reflects the Total Annual License Termination Plan cost in 2023 dollars at a 2% escalation rate.
- Column 2:** **Spent Fuel Costs**
Reflects the Total Annual Irradiated Fuel Management Plan Cost, less Fuel Loading, in 2023 dollars at a 2% escalation rate.
- Column 3:** **Total Expenses**
Reflects Total Expenses (Column 1 plus Column 2).
- Column 4:** **Beginning of Year Fund Balance**
Reflects the Fund Balance on January 1 of each year (NDT (excludes Site Restoration subaccount) plus Financial Assurance Escrow):
- January 1, 2023, Beginning of Year Fund Balance equals \$219,839 NDT (\$166,581) plus Financial Assurance Escrow (\$53,258).
- Column 5:** **Withdrawals**
Reflects the annual expenditures from the Trust Fund in 2023 dollars at a 2% escalation rate.
- Column 6:** **Contributions DOE Recovery**
Reflects Cost Recovery from DOE for breach of the Standard Contract in 2023 dollars at a 2% escalation rate:
- Year 2024: \$10,000 recovery reflects NorthStar net proceeds from Entergy DOE Litigation (Round 3).
 - Year 2025: \$21,205 recovery reflects initial NorthStar DOE settlement for cost incurred beginning 2019 thru 2023.
- Column 7:** **Contributions NorthStar Escrow Deposits / Distributions**
Reflects NorthStar contributions as required by Section 2(c) of the Memorandum of Understanding (MOU) dated March 2, 2018 and approved by the State of Vermont Public Utility Commission. Distribution on January 1, 2027, of \$61,149 made pursuant to Section 2(c)(2) of the MOU.
- Column 8:** **Annual Earnings on Fund**
Reflects earnings on funds remaining in the trust. A 2% Earnings rate is used over a 0% cost escalation rate. The annual 2% earnings are calculated on the Beginning Balance (Column 4) minus 100% of withdrawals (Column 5) plus 100% of contributions (Columns 6 and 7) multiplied by the 2% annual earnings rate.
- Column 9:** **End-of-Year Fund Balance**
Reflects the End-of-Year Trust Fund Balance.

As can be seen from the information provided in Table 3, the required funding for DECON decommissioning, is \$184,247 million. The foregoing DECON analysis shows that when the December 31, 2022 DTF balance is escalated at the allowable rate and compared against the annual figures for the DECON period adequate funds exist at the end of the decommissioning project. ISFSI decommissioning costs are planned to be paid for out of the aforementioned adequate funds if not paid for by spent fuel litigation proceeds. Accordingly, NVY concludes that as of December 31, 2022 adequate funding assurance for decommissioning Vermont Yankee has been demonstrated.