



**Department
of Public Service**

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April 25, 2024

VIA EMAIL

Hon. Michelle L. Phillips
Secretary to the Commission
3 Empire State Plaza
Albany, NY 12223-1350

Re: Matter No. 21-01188 – In the Matter of the Indian Point Closure Task Force and Indian Point Decommissioning Oversight Board.

Dear Secretary Phillips:

Please accept for filing in the above-captioned matter, the April 25, 2024 presentation to the Indian Point Decommissioning Oversight Board regarding exploring the option of offsite shipping of wastewater. Should you have any questions regarding this filing, please contact me. Thank you.

Respectfully submitted,

A handwritten signature in blue ink that reads "Tom Kaczmarek".

Tom Kaczmarek
Executive Director
Indian Point Decommissioning Oversight Board

EXPLORING OPTIONS: SHIPPING WASTEWATER OFFSITE DURING NUCLEAR DECOMMISSIONING

Indian Point Decommissioning Oversight Board

April 2024 Presentation

Outline

- Shipping Indian Point Wastewater Offsite
- Decommissioning Experience: Vermont Yankee
- New York Experience: West Valley
- Is it possible to ship wastewater from Indian Point?
- Considerations:
 - Regulatory
 - Transport
 - Fiscal
 - Wastewater Storage and Disposal
 - Licensee

Shipping Indian Point Wastewater Offsite

- Is this a feasible option? **YES.**
- Has it been done successfully elsewhere? **YES.**
- Has it been done successfully by Holtec? **NOT YET.**

Vermont Yankee

Background	Decommissioning Milestones
<ul style="list-style-type: none">➤ Located in Vernon, Vermont➤ General Electric Boiling Water Reactor➤ 1,912 MWt➤ Owned and Operated by Entergy since 2002➤ Reactor Permanently Shutdown December 29, 2014➤ Bought by NorthStar Decommissioning Holdings, LLC January 11, 2019	<ul style="list-style-type: none">➤ Fuel on Pad - 2018➤ Large Component Removal - 2022➤ Decontamination/ Demolition - Mid 2025➤ Partial Release - 2026➤ Projected License Termination - 2052

Vermont Yankee

Then.



Now.



*Photo credit (above): Nuclear Regulatory Commission
(adjacent): Brattleboro Reformer, Kristopher Radder*

Vermont Yankee Wastewater

Water Type	Description	Disposal
① Uncontaminated Diversion Water	Groundwater, rain, and snow melt collected by Northstar prior to entering any Vermont Yankee buildings.	Diversion system installed to prevent intrusion water from entering buildings. With a permit from VT, Northstar discharged uncontaminated diversion water to the Connecticut river beginning April 1, 2021.
② Contaminated "Intrusion" Water	As VY building seals cooled and contracted, numerous in-leakage paths developed. This water is considered contaminated.	Per Northstar statement at the December 2023 VT NDCAP meeting, contaminated water is collected, stored, and shipped offsite for disposal.
③ Process Water	Water that had been collected and stored from draining and decontamination of abandoned plant systems. (Example: Spent Fuel Pool Water)	Process water is shipped offsite for disposal.

Vermont Yankee Wastewater

- Contaminated water and process water is shipped offsite for disposal.
- Shipping wastewater offsite was always a part of Northstar's decommissioning plan.
- Vermont Yankee is the only U.S. commercial decommissioning nuclear power plant to have performed this type of bulk liquid radioactive waste disposal/shipping.

Vermont Yankee Wastewater

- **Contaminated “Intrusion” Water Shipping:**
 - As of January 2024, Northstar had shipped a total of 3.3 million gallons offsite
 - 430,000 gallons in 2022
 - 1.1 million gallons in 2023
- **Process Water Shipping:**
 - 900,000 gallons stored in Vermont Yankee’s torus was shipped offsite in 2021 and 2022.
 - Northstar shipped ~288,000 gallons from the Spent Fuel Pool in 2022.
 - Spent Fuel Pool empty
 - In 2023, Northstar shipped the last of its process water inventory (~108,000 gallons) to Waste Control Specialists in Texas.

Where does Vermont Yankee wastewater go & how is it moved offsite?



photo credit: WAMC Josh Landes

- Over the years and through different owners, shipment destinations varies: South Carolina, Tennessee, Idaho, and Texas
- A combination of truck and tanker rail has been used to ship wastewater offsite from Vermont Yankee.
- Northstar currently uses tanker rail for wastewater shipping.

How much is Vermont Yankee spending on Wastewater Shipping?

- No public record of exact shipping costs
 - Decommissioning Trust Fund Annual Reports do not separate out this information.
- VTdigger.org, a Vermont non-profit news outlet, provides some insight to cost:
 - “Tainted Water costs top \$2M at Vermont Yankee” 10/28/2017
608,000 gallons trucked to Tennessee (\$4/gallon)
 - “Vermont Yankee water cost: \$6M and counting” 7/1/2018
\$3.5M to ship 782,000 gallons (\$4/gallon)
\$600K collection and testing
\$1.9M to Seal Turbine Bldg, Consultants, and Studies

New York Experience – West Valley

- **West Valley shipments:**

- 22,500 gallons Class A wastewater shipped via tanker trucks = \$225,000.00 (\$10/gallon)
2020/2021

Total cost includes transportation, treatment and disposal.

Back to Indian Point

Background	Decommissioning Milestones
<ul style="list-style-type: none">➤ Located in Buchanan, NY➤ Westinghouse Pressurized Water Reactors (Unit 2 and Unit 3)➤ 3216 MWt each➤ Owned and Operated by Entergy since 2001➤ Reactors Permanently Shutdown:<ul style="list-style-type: none">➤ Unit 2 April 30, 2020➤ Unit 3 April 30, 2021➤ Bought by Holtec May 28, 2021	<ul style="list-style-type: none">➤ Fuel on Pad - 2023➤ Decontamination/ Demolition - 2040➤ Partial Release - 2041➤ Projected License Termination - 2062

Back to Indian Point

- Currently approximately 1.3 million gallons total (SFPs, RWSTs, Refueling Cavities) at the Indian Point site.
- Holtec reported at last DOB (December 6, 2023) that additional wastewater will be generated by upcoming decommissioning activities.
- Shipping wastewater offsite was not considered in Holtec's initial decommissioning plan. The licensee planned to discharge this water to the Hudson River.
- On August 18, 2023, Governor Hochul signed a new law prohibiting the discharge of any radioactive substance into the Hudson River in connection with the decommissioning of a nuclear power plant.

Is it possible to ship wastewater from Indian Point? Yes.

- **Regulatory Considerations:**

- The Tennessee and Texas facilities are licensed for radiological waste disposal so Holtec would not require prior NRC approvals.
- Sending the wastewater to Idaho will require a 10CFR20.2002 alternate disposal approval from NRC.

- **Transport considerations:**

- Indian Point does not have a rail spur onsite.
- As with other waste from decommissioning, trucks will need to be used to transport the waste to transfer facility with rail and applicable radiological permits.
- Risk of possible leaks or spills

Is it possible to ship wastewater from Indian Point? Yes.

- **Fiscal Considerations:**

- With estimated costs between 4 and 10 dollars/gallon, shipping Indian Point's wastewater offsite could cost between 5.2 and 13 million dollars.
 - The \$4 estimate is based on Vermont Yankee's 2017-2018 costs and does not account for subsequent inflation.
 - These estimates do not take into account the extra work of trucking Indian Point's wastewater to rail.
- Financial risk of lengthy decommissioning timeline. Shipping water offsite will almost certainly shorten the timeline, thus alleviating this financial risk.

Is it possible to ship wastewater from Indian Point? Yes.

- **Wastewater Storage and Disposal Considerations**

- Onsite storage no longer a concern/issue
- If shipped offsite, wastewater is evaporated or solidified and buried at a licensed disposal facility.

- **Licensee Considerations**

- Holtec may utilize any option permitted by state and federal law.