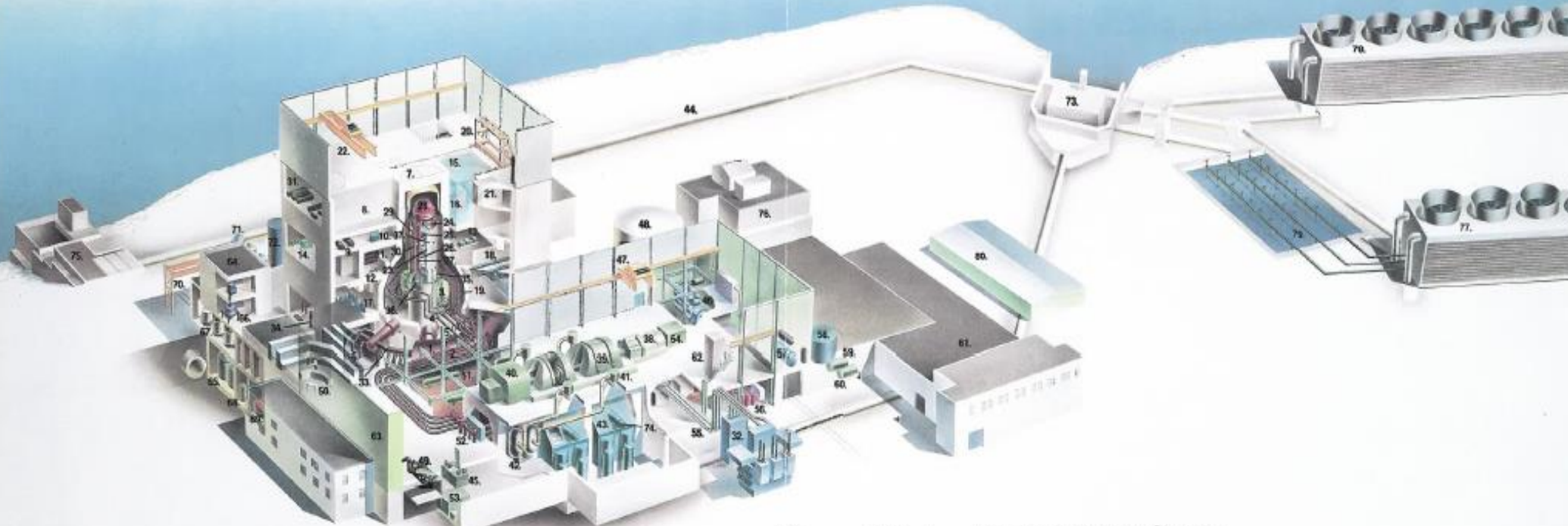


NorthStar VTY Decommissioning



Vermont Yankee Nuclear Power Station

Slides (from January 2020
NDCAP presentation deck)
Modified for Website use.
crd 4/14/20

- | | | | |
|---|----------------------------------|-----------------------------------|--------------------------------------|
| 1. Torus | 21. New fuel storage vault | 41. Intercept valve | 61. Receiving and stores |
| 2. Main steam lines | 22. Overhead crane | 42. Moisture separator | 62. Elevator |
| 3. Recirculation pump | 23. Biological shield well | 43. Main condensers | 63. Turbine building |
| 4. Inboard main steam isolation valve | 24. Steam dryer | 44. Cooling water recirculation | 64. Rad waste building |
| 5. Outboard main steam isolation valve | 25. Steam separator | 45. Turbine oil tank | 65. Condensate phase separator tanks |
| 6. Downcomers | 26. Fuel assemblies | 46. Emergency diesel generators | 66. Centrifuge |
| 7. Shield plug | 27. Reactor vessel | 47. Overhead crane | 67. Cask filling area |
| 8. Dryer/separator storage pool | 28. Vessel head | 48. Condensate storage tank | 68. Spent resin tank |
| 9. Reactor building cooling water heat exchangers | 29. Main steam outlet | 49. Feedwater pump | 69. Waste sludge tank |
| 10. Reactor building cooling water pump | 30. Recirculation water outlet | 50. Control room | 70. Traveling hoist |
| 11. Reactor water cleanup heat exchanger | 31. Uninterruptible power supply | 51. High pressure heaters | 71. Sample tanks |
| 12. Reactor water cleanup pump | 32. Main transformer | 52. Main stop valve | 72. Surge tank |
| 13. Vital AC motor generator set | 33. Ring header | 53. Turbine lube oil storage tank | 73. Discharge structure |
| 14. Recirculation motor generator set | 34. RHR service water pump | 54. Excitation cubicle | 74. Low pressure heaters |
| 15. Fuel pool (spent fuel storage) | 35. Recirculation inlets | 55. Main generator leads | 75. Intake structure |
| 16. Spent fuel rack | 36. Manifold | 56. Make-up demineralizers | 76. Advanced oil-gas building |
| 17. Hydraulic control units | 37. Feedwater inlet | 57. House heating boiler | 77. West cooling tower |
| 18. Standby gas treatment | 38. Generator | 58. Clearwell | 78. East cooling tower |
| 19. Primary containment wall | 39. Low pressure turbine | 59. Acid storage tank | 79. Spray pond |
| 20. Refueling bridge | 40. High pressure turbine | 60. Caustic storage tank | 80. Warehouse |

NorthStar Nuclear Decommissioning Company, LLC

Simple Priorities

SAFETY with all we do: Target Zero ( accidents)

Radiological, Environmental, Industrial, Nuclear

Do it right. Do it safe.



Project Schedule – Overview

	NorthStar Ownership (Target 01.11.2018)			Partial License Termination (Target 12.31.2026)								License Termination (Est. 12.31.2052)	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027 to 2051	2052
													Final Site Restoration & License Termination
Dry Fuel Storage Program (Fuel on ISFSI - Dec. 31, 2018)	Completed by Entergy												
Large Component Removal (RPV, RPVI, etc.)		Engineering & Planning		Complete - March 2022									
Decontamination & Decommissioning		Pre-Closing Work		Complete - December 2026									
Spent Fuel Management				ISFSI Operations and Management (2019 thru 2026)								ISFSI Only Operations Period (2027 thru DOE Fuel Pick-up)	

Commitment to Safety

- Industrial SAFETY: Zero NorthStar OSHA Recordable Lost Time Accidents to date with over 304,000+ person hours worked on site in 2019
- Radiological SAFETY: ALARA (AS Low As Reasonably Achievable) worker protection dose goals for 2019 met and new goals established for 2020.
- Nuclear SAFETY: There have been NO Nuclear Safety incidents at Vermont Yankee since NorthStar assumed ownership of the site and Zero Cited and Non-Cited NRC Violations for 2019.
- Environmental SAFETY: There have been no Environmental Safety incidents at VY since NorthStar assumed ownership, nor any negative Environmental impacts to the site or surrounding properties.

Material Transport Operations

Material/Volumes Shipped in 2019:

RADIOLOGICAL MATERIALS

- Radioactive Waste Shipped: Approx 122,000 Ft³ to WCS in Texas

NON-RADIOLOGICAL MATERIALS

- Construction & Demolition (C&D) materials to Massachusetts: 1521.24 TONS
(Western Recycling in Wilbraham & Millbury-C&D Processing Station in Millbury)
- Asbestos Containing Material (ACM) to Ohio & New Hampshire: 537.25 Yards³
(Minerva Landfill in Wynesburg OH & Waste Management of NH in Rochester)
- Recycle & Scrap to Massachusetts: 237.6 TONS
(Mattuchio Scrap Metal in Everett)

INTRUSION WATER

- Shipped 8 Rail Tankers in 2019: Estimated total volume of 181,574 gal
(4 tankers went to WCS in Texas, 4 to US Ecology in Idaho)

Reactor Vessel Segmentation Update

Containment Head DONE

Reactor Head DONE

Steam Dryer DONE

Flood up COMPLETE

Steam Separator DONE

Final packaging and preparation
for shipment in progress.



Select components will be cut up and packaged for storage at the ISFSI in a Cask (very similar to the Spent Fuel Casks)

These components (primarily the upper core grid) have been carefully evaluated, and are designated as Greater Than Class C (GTCC) waste due to their high activation levels

RV Closure
Head

Steam
Dryer

Steam
Separator

Upper
Core Grid

Guide
Tubes

Core Plate
Assembly

Shroud
Cylinder

Jet Pump
Assemblies

RV
Nozzles

Reactor
Vessel

Refuel Floor Set up for Steam Separator Segmentation



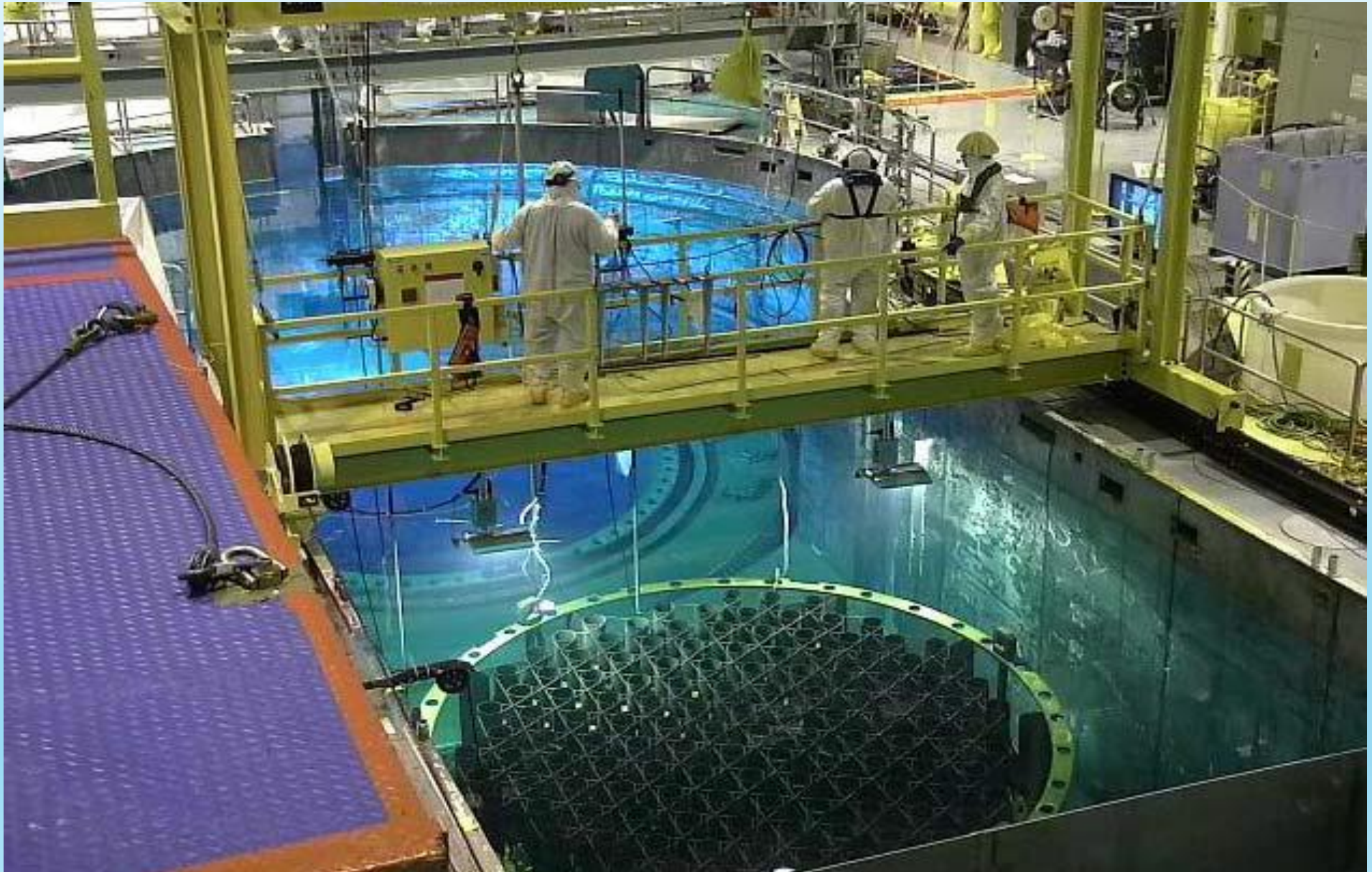
Lifting Specialty Tooling (Trident Clamps) to Refuel Floor



Reactor Vessel Radiological Survey in progress



Steam Separator Segmentation (underwater) work



Steam Separator Cutting Operations



Underwater camera photos of cutting lifting lug(s) off the Steam Separator



Turbine Valves and Steam Piping Removal



Combined Intercept Valves & steam lines to be removed up to Rx Building



Turbine to Condenser opening with CIVs (which are being removed) in background

Other Demo work upcoming (Warehouse & AOG)



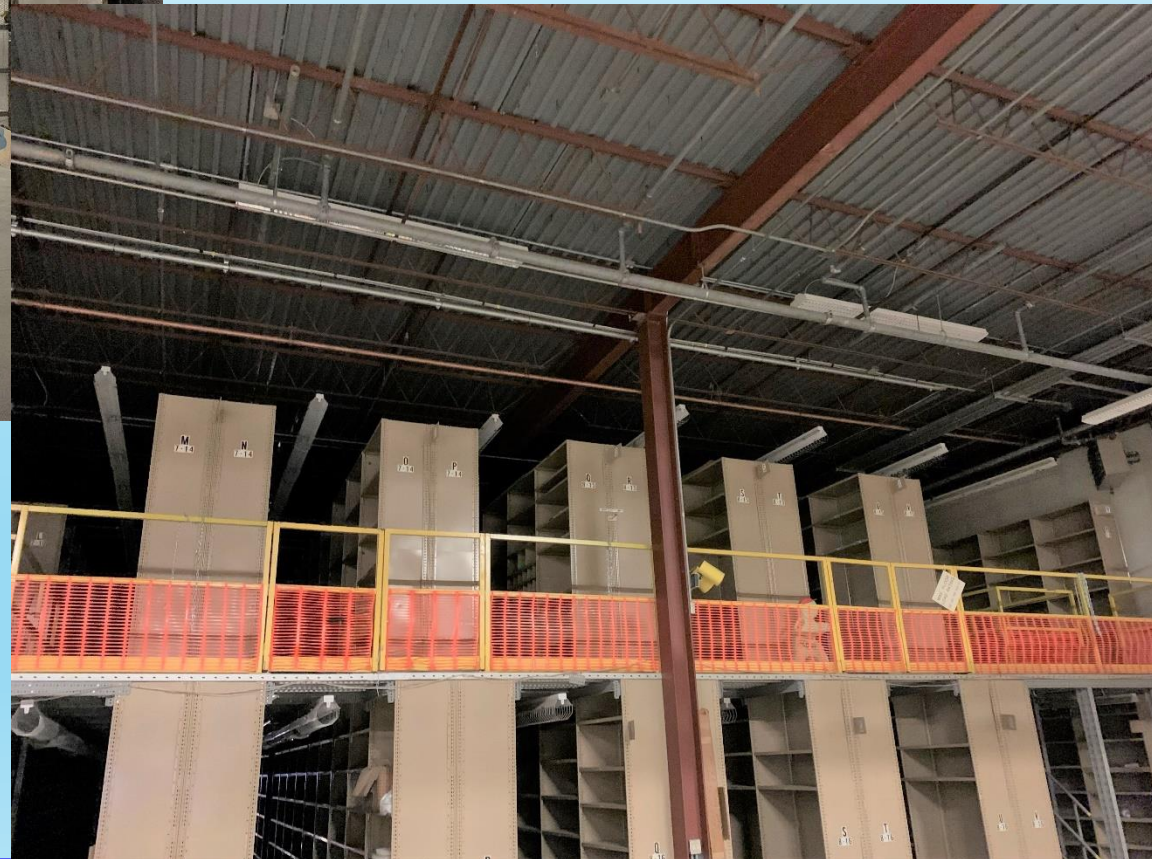
Warehouse preparation for Demo



Weather and resource availability will affect exact demo timing

Materials removed
Systems secured

All universal waste will be removed
and power isolated just prior to
demo



Non-Rad Site Characterization: 2019

- What have we completed?
 - ✓ Phase I or Initial Conceptual Site Model complete
 - This combines site history and all known VY work to understand potential scope for remediation efforts.
 - ✓ Site Investigation Field Program and Report complete
 - Received comments from DEC
 - ✓ Supplemental Site Investigation Program complete
 - Received comments on work plan from DEC
 - ✓ Three rounds of Quarterly Groundwater Sampling completed

Non-Rad Site Characterization:

- What do we know so far and what are we doing?
 - The combined the site's property history and known VY work related events have been examined.
 - As a result, 17 locations of interest were selected, designated as Areas of Concern (AOCs). No new or unknown issues found to date. No urgent or alarming conditions discovered.
 - Of these 17 locations, initial sampling and investigation revealed 5 will require some degree of remediation.
 - Sampling plans executed to determine scope and remediation.
 - Continued efforts with appropriate State agencies to plan, perform, and assess such remediation is ongoing. This process is highly iterative to ensure effectiveness.

What is Next? 2020

- What is happening now?
 - ✓ Updating Revised Site Investigation Report to include additional data and incorporate DEC and their subcontractor's, (ATC) comments
 - ✓ Designing remediation plans to clean up and close out those Areas of Concern requiring action where applicable with State Agency input and oversight
- What is next?
 - ✓ Remediate soils in the two areas required and accessible
 - ✓ Continue to support applicable permitting and any additionally determined sampling/remediation requirements (iterative process)
 - ✓ Coordination meetings occurring biweekly with ANR and other State Agencies to ensure alignment and collaboration

Stakeholder Engagement Update

- Contract finalized with Antioch University New England (AUNE) to perform a VY site study/land use inventory for exploring redevelopment options.
- Working with Town of Vernon Planning Commission and Select Board to coordinate local stakeholder input regarding potential redevelopment priorities and opportunities.
- Initial discussions underway with Friends of Vernon Center regarding adjacent properties, parking lot & lawn area boundaries, the access driveway, and septic system/leach field location.