

Vermont Yankee Site Assessment Study

Nuclear Decommissioning Citizens Advisory Panel (NDCAP)

October 30, 2014



Presenters

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Site Assessment Study

Background

- ▶ In December of 2013, Entergy Vermont Yankee (ENVY) entered into a Settlement Agreement with the State of Vermont
- ▶ Commitments in the Agreement included:
 - Cessation of operation by the end of 2014,
 - Preparation of a Site Assessment Study, and
 - Submit the Post-Shutdown Decommissioning Activities Report (PSDAR) to NRC no sooner than 60 days after submittal of the Site Assessment Study to the State of Vermont.

Site Assessment Study

Content

- ▶ Vermont Yankee Site Assessment Study (SAS) was released on October 17th, 2014.
- ▶ A comprehensive summary of the current condition of the Vermont Yankee site and plans for transition to decommissioning.
- ▶ The SAS includes:
 - Description of the existing radiological and non-radiological conditions at the site,
 - Description of the decommissioning process,
 - Strategy for management of the spent nuclear fuel,
 - Decommissioning cost estimate and schedule, and
 - Draft of the Post-Shutdown Decommissioning Activities Report (PSDAR) planned for submittal to NRC in December.

Site Assessment Study

Details

▶ Vermont Yankee Site Conditions

○ Site Description & History

- Construction Permit Issued December 1967
- Commercial Operation November 1972
- Original Operating License Expiration March 21, 2012
- Renewed License Expiration March 21, 2032

○ Spent Nuclear Fuel On-Site

- Wet & Dry Spent Fuel Storage Thru 2020
- On-Site Dry Spent Fuel Storage 2021-2052 (Est.)
- Removal of all Spent Fuel Late 2052 (Estimate)



Site Assessment Study

Details

- ▶ Vermont Yankee Site Conditions (Con't)
 - Radioactive Materials On-Site
 - Radiological Historical Site Assessment (HSA) prepared and included in the Site Assessment Study
 - Known or potential contamination on-site is identified and classified (Class 1, 2 or 3) for License Termination
 - Non-Radiological Contaminants On-Site
 - Non-Radiological Historical Site Assessment (HSA) prepared and included in the Site Assessment Study
 - The HSA uses a similar approach in identifying, documenting and classifying known or potential contamination on-site (Class 1, 2 or 3)

Site Assessment Study

Details

- ▶ Vermont Yankee Site Conditions (Con't)
 - Groundwater
 - Summary of Groundwater Impacts
 - Radiological and Non-Radiological
 - Underground Storage Tanks (USTs)
 - Groundwater Monitoring Programs
 - Groundwater Protective Initiative (GPI)
 - Radiological Environmental Monitoring Program (REMP)
 - State and Federal Permits



Site Assessment Study

Details

- ▶ Spent Nuclear Fuel Management
 - Wet Storage of Spent Nuclear Fuel
 - Dry Storage of Spent Nuclear Fuel
 - Independent Spent Fuel Storage Installation (ISFSI)
 - First Storage Pad Installed
 - ISFSI Pad Expansion
 - CPG Filed with Vermont PSB on June 30, 2014.
 - Assumptions Used for Spent Fuel Management
 - DOE will start transferring spent fuel in 2026
 - Complete removal by 2052.
 - Based on DOE's January 2013, *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*.

Site Assessment Study

Details

- ▶ Radiological Remediation
 - Facility Dismantlement
 - Reactor Vessel and Internals
 - Systems and Equipment
 - Structures
 - Soil and Foundations
 - License Termination Process

- ▶ Hazardous Material Remediation



Site Assessment Study

Details

▶ Site Restoration

- Regulations Applicable to ENVY Decommissioning
 - Federal and State
- Future Use Criteria
- Site Restoration Standards
 - ENVY to work with Vermont DPS, ANR and VDH on a set of site restoration standards required and necessary to support future use of the site.



Site Assessment Study

Decommissioning Costs

- ▶ Decommissioning Cost Estimates
 - USNRC Financial Assurance Requirements
 - Set Forth in NRC Regulations
 - Routinely Updated
 - VY/TLG Maximum SAFSTOR Estimate
 - Based on Site-Specific Technical Information
 - Complies with 10 CFR 50.82(a)(4)(i)
 - Assumes 2015-2020 Transition to SAFSTOR
 - 2012-2075 Dormancy, Dismantlement & Decontamination and Site Restoration

Site Assessment Study

Decommissioning Costs

- ▶ Updated Cost Estimate to Decommission Vermont Yankee is \$1.242 Billion in 2014 dollars for SAFSTOR.
 - Termination of the NRC Operating License - \$817 Million
 - Site Restoration - \$57 Million
 - Spent Fuel Management - \$368 Million

- ▶ Nuclear Decommissioning Trust (NDT) Fund is currently at \$642.6 Million (as of September 30, 2014)



Site Assessment Study

Decommissioning Costs

▶ Funding Strategies

- NRC Regulatory Requirements for License Termination
 - Nuclear Decommissioning Trust (NDT) for Financial Assurance
 - ENVY is in compliance with NRC Requirements by Virtue of the NDT.
- NRC Regulatory Requirements for Spent Fuel Management
 - ENVY will establish a program for SFM, while regulations do not require “Financial Assurance”
- Options for Addressing the Funding Gap
 - Entergy is evaluating several options in compliance with all regulatory requirements for funding.



For More Information

- ▶ Newly created Vermont Yankee website:
 - www.vydecommissioning.com

