Vermont Yankee Decommissioning Update

Texas Low-Level Radioactive Waste Disposal Compact Commission

October 1, 2015
Introductions

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Entergy Nuclear Vermont Yankee, LLC (ENVY)
VY Current Plant Status & Milestones

- Vermont Yankee Nuclear Power Station (VYNPS) ceased power operations on December 29, 2014 after 633 days of continuous power operation – a record for the VY site.

- On January 12, 2015, all nuclear fuel was removed from the reactor and placed in the Spent Fuel Pool (SFP).

- On January 12, 2015, VYNPS certified to the NRC that the reactor had permanently ceased operations and was permanently defueled.

- VYNPS is in full compliance with all NRC regulations related to the permanent cessation and decommissioning of nuclear facilities.

- The Nuclear Regulatory Commission (NRC) continues to provide oversight & governance over VYNPS decommissioning process as part of its Decommissioning Inspection Program.

- **The focus of VYNPS and its employees continues to be our ongoing commitment to safety.**
Entergy announces it will cease operations December 29, 2014

Commercial Operations began in 1972

Entergy submits notification of intent to cease operations September 23, 2013

Fuel permanently removed from reactor vessel January 12, 2015
VY PSDAR Timeline
## Decommissioning Schedule

<table>
<thead>
<tr>
<th>Decommissioning Activity</th>
<th>Start</th>
<th>End</th>
<th>Approximate Duration (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transition from Operations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant Shutdown</td>
<td>12/29/14</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Preparations for SAFSTOR Dormancy</td>
<td>12/29/14</td>
<td>4/30/16</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>SAFSTOR Dormancy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dormancy Period w/Wet Fuel Storage</td>
<td>2016</td>
<td>2020</td>
<td>4.2</td>
</tr>
<tr>
<td>Dormancy Period w/Dry Fuel Storage</td>
<td>2020</td>
<td>2052*</td>
<td>32.5</td>
</tr>
<tr>
<td>Dormancy Period w/No Stored Fuel</td>
<td>2053</td>
<td>2067*</td>
<td>15</td>
</tr>
</tbody>
</table>

* May be sooner if NDT funds are adequate to complete decommissioning, including any remaining spent fuel management activities.
## Decommissioning Schedule (Cont’d)

<table>
<thead>
<tr>
<th>Decommissioning Activity</th>
<th>Start</th>
<th>End</th>
<th>Approximate Duration (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparations for Dismantling &amp; Decontamination (D&amp;D)</strong></td>
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<td></td>
</tr>
<tr>
<td>Preparation for D&amp;D</td>
<td>2068</td>
<td>2069*</td>
<td>1.5</td>
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<tr>
<td><strong>Active D&amp;D</strong></td>
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<td></td>
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<tr>
<td>Large Component Removal</td>
<td>2069</td>
<td>2070*</td>
<td>1.3</td>
</tr>
<tr>
<td>Plant Systems Removal &amp; Building Decontamination</td>
<td>2070</td>
<td>2073*</td>
<td>2.5</td>
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<tr>
<td>License Termination</td>
<td>2073</td>
<td>2073*</td>
<td>0.7</td>
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<tr>
<td><strong>Site Restoration</strong></td>
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<td></td>
</tr>
<tr>
<td>Site Restoration</td>
<td>2073</td>
<td>2075*</td>
<td>1.5</td>
</tr>
<tr>
<td>Total – Shutdown to Completion of License Termination</td>
<td>–</td>
<td>–</td>
<td>59</td>
</tr>
</tbody>
</table>

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Spent Fuel Management
Current Dry Fuel Storage Status

• Thirteen (13) Dry Fuel Storage Casks are safely loaded and stored on the first of two (2) Independent Spent Fuel Storage Installation (ISFSI) pads.

• Application for a second ISFSI pad was submitted on June 30, 2014 to the Vermont Public Service Board (PSB) seeking a Certificate of Public Good (CPG). Approval expected in May 2016

• An additional forty-five (45) Dry Fuel Storage Casks for a total of fifty-eight (58) will be loaded and stored on the two pads.

• Current plan is to transfer all spent fuel to Dry Cask Storage by the end of 2020.
Independent Spent Fuel Storage Installation (ISFSI)
Independent Spent Fuel Storage Installation (ISFSI)
Irradiated Fuel Management Plan

Requirements/Guidance

- 10 CFR 50.54 (bb)
- NRC review is conducted in accordance with its standard process

Irradiated Fuel Management Plan Content

- Written notification submitted to USNRC on December 19, 2014 discussing changes to the VY Program for Management of Irradiated Fuel.

- Program by which VY intends to manage and provide funding for the management of all spent nuclear fuel until it is transferred to the Department of Energy for ultimate disposal.

- Describes Vermont Yankee's plan to move the fuel from the Spent Fuel Pool (Wet Storage) to the ISFSI (Dry Storage).
• The Spent Fuel Pool currently stores 2,996 spent fuel assemblies at VY.
• The thirteen (13) Dry Cask Storage Casks contain 884 spent fuel assemblies.
• A total of 3,880 spent fuel assemblies are stored at VY.
• Current Program assumes that DOE will begin moving fuel from VY in 2026.
• Current Program assumes that DOE will complete fuel removal from the site by 2052.
• The Program describes the strategy for funding the management of the spent nuclear fuel.
Decommissioning Cost Estimate Breakdown

Total Cost Breakdown (2014 $ in Millions)

- License Termination: $817
- Spent Fuel Management: $368
- Site Restoration: $57

Total Cost = $1.242B
Spent Fuel Management - $368 Million

- Operational costs - $225 Million
- Transfer to dry storage - $143 Million

- ENVY is funding the “transfer to dry storage”
- Funding Spent Fuel Management reduces impact on NDT
Decommissioning Project Status / Issues
VY Decommissioning Update

The focus of Entergy Vermont Yankee (VY) and its Employees continues to be our ongoing commitment to Safety.

- Decommissioning Preparation Activities
  - System Draining/Lay-Up
  - Building Power and Services Removal - Ongoing
  - Security Modifications/Enhancements Ongoing
- Completed Select Structure/Building Removal
- Next Emergency Plan Drill – October 21, 2015
  - Part of ongoing training and Emergency Response Organization (ERO) qualifications.
- Work with State of Vermont to establish Site Restoration Standards pursuant to the “2013 Settlement Agreement”
- Completion of Second ISFSI Pad and Commence Transfer of Remaining Spent Fuel from Pool to Pad. Contingent on receiving a Certificate of Public Good (CPG) by May of 2016.
Communication and Outreach

- Nuclear Decommissioning Citizens Advisory Panel (NDCAP)
- Stakeholder Outreach: Speaking Engagements, Community Involvement, and Facility Tours
- SAFSTOR Matters – Monthly Cable TV Show
- Vermont Yankee Decommissioning website: www.vydecommissioning.com
SAFSTOR MATTERS

BCTV 2015 *Series of the Year*

- Decommissioning Overview
- Emergency Planning
- Spent Fuel Management
- Economic Impact
- Decommissioning Update
- Decommissioning Maine Yankee
Questions?

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