Vermont Yankee Nuclear Power Station Decommissioning

Scott State, P.E., - NorthStar, CEO
Steven Scheurich, Entergy - VP, Nuclear Decommissioning

January 24, 2017
Agenda

• Purpose of Meeting
• Current Status of Vermont Yankee
• Overview of NorthStar Approach and Teaming Partners
• Technical Qualifications
• Financial Assurance
• Other License Transfer Requirements
• Conclusion
• Next Steps
Purpose of Meeting

• Intent to initiate decommissioning of Vermont Yankee Nuclear Power Station (VYNPS) ahead of previous schedule
• Proposed License Transfer Application for VYNPS
• Introduce NorthStar and Teaming Partners
• Provide an overview of the decommissioning approach, including technical qualifications, financial assurances, organization structure and decommissioning schedule
Current Status of Vermont Yankee

- Current staffing level at VY: ~150 FTE’s
- Target ISFSI only status by end of 2018
- Commitment to open & transparent communication:
  - Public: VT Nuclear Decommissioning CAP
  - Employees: Entergy, NorthStar & Teaming Partners
  - Regulatory: NRC, State of Vermont

As-Submitted Dec. 2014 PSDAR Decommissioning Timeline:

- Dec 2014 VYNPS Shutdown
- Jan 2015 Reactor Permanently Defueled
- 2015-2020 Planning, Preparations and Deactivation; ISFSI expansion and fuel transfer
- 2021-2067 SAFSTOR Dormancy Period
- 2052 DOE completes removal of all spent nuclear fuel
- 2068-2073 Dismantling & Decontamination
- 2073 License Termination
- 2075 Site Restoration
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NorthStar’s Decommissioning Timeline

**Timeline under Entergy ownership**

<table>
<thead>
<tr>
<th>Fuel transfer</th>
<th>SAFSTOR Dormancy &amp; ISFSI Operations</th>
<th>D&amp;D/LT SR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>2020</td>
<td>2052</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2067</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2073</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>2075</strong></td>
</tr>
</tbody>
</table>

**Proposed Timeline under NorthStar License Transfer Application**

<table>
<thead>
<tr>
<th>Fuel Transfer</th>
<th>D&amp;D/SR</th>
<th>ISFSI Operations</th>
<th>LT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>2018</td>
<td><strong>2030</strong></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

*Accelerates Decommissioning from 2073 to 2030*

- License Termination Complete – 2052 vs. 2075 **
- Partial Site Release/Site Restoration *

* Excludes ISFSI
** Assumes DOE Fuel Pick-Up Complete in 2052

NorthStar Ownership (Target ISFSI Only)
About NorthStar Group Services, Inc.

Nationwide Branch Network

- Corporate Headquarters – New York City
  - Regional offices in Boston, Chicago, Denver, Orlando, New Jersey, and Seattle

- Founded 1986
- Over 25 Offices Nationwide
- Over 3,500 full time employees
- Safety – 2016 EMR 0.69
- Average Annual Revenues - $650M
- Projects Completed >100,000
- The NorthStar Team has completed over 300 Nuclear and Power Plant Projects in the last 15 years
- #1 Demolition and #1 Facility Abatement Contractor as ranked by Engineering News Record *(based on annual revenue)*
- Largest Demolition Contractor in the World as ranked by Construction & Demolition Recycling Magazine *(based on annual revenue)*
## NorthStar Team: Roles & Responsibilities

### Owner and Decommissioning Lead Partner
- World’s Largest Turnkey Decommissioning & Facility Services Contractor
- Abatement & Demolition Contractor
- Extensive nuclear experience
- NorthStar CEO, Scott E. State, P.E. – Chief Nuclear Officer for owner

### Teaming Partners

#### Vessel and Internals Segmentation / Spent Fuel Support
- World’s leading nuclear fuel and services provider
- Leading expertise in vessel and internals segmentation
- BWR experience: Wuergassen Reactor 320-ton RPV

#### Engineering and License Transfer / Termination Support to Owner
- Founded in 1898 – 100% Employee Owned
- Over 5,300 professionals – 35 offices worldwide
- Annual Revenue over $2.5 billion

#### Waste Management, Packaging, Transportation and Disposal
- Licensed for Class A, B, C & Exempt Low-Level Radioactive Waste
- Texas Compact disposal site
- Pending application – Centralized Interim Storage Facility
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### NorthStar Team: Expertise and Experience

<table>
<thead>
<tr>
<th>NorthStar</th>
<th>Expertise</th>
<th>Experience</th>
</tr>
</thead>
</table>
| World’s Largest Turnkey Decommissioning & Facility Services Contractor | D&D*, Asbestos & Hazardous Materials Abatement, Facility Demolition | 35+ Years Specialty Contractor Services
95% of all projects require regulatory approvals to complete |
| AREVA | Vessel & Internals Segmentation, Spent Fuel Support | 20+ Years Reactor D&D Project Team Experience
- Wuergassen BWR
- Yankee Plants |
| BURNS MCDONNELL | Environmental Engineering & License Transfer/ Termination Support | Founded in 1898
Cimarron, Tronox
Over 5,300 professionals |
| WCS | Waste Management, Packaging, Transportation & Disposal | Class A, B, C & Exempt LLRW Facility
TX Compact & Federal Waste Disposal Facilities |

*Decontamination (radiological) & Decommissioning
**NorthStar Team: Expertise and Experience**

### Major Utility Clients

- Entergy
- Exelon
- Dominion
- Duke Energy
- TECO
- Con Edison
- NRG
- RG&E
- Pacific Gas & Electric
- Xcel Energy

### Decommissioning Experience

#### Nuclear Power Plants
- Maine Yankee
- Yankee Rowe
- Connecticut Yankee
- Stade PWR
- Wuergassen BWR
- Rancho Seco
- Millstone I

#### Research Reactors
- University of Buffalo
- University of Illinois
- University of Arizona
- University of Washington
- Dounreay Fast Reactor

#### Department of Energy
- Hanford 308-A Reactor
- Hanford 309 Reactor (Plutonium)
- Hanford 340 Waste Vault (Plutonium)
- Y-12 National Security Complex Bldgs. 9769 & 9211
- Savannah River Site – K Cooling Tower
- Pit 9 Facilities
- Environmental Management Program Support
NorthStar Team: Expertise and Experience

**NorthStar**

UNIVERSITY AT BUFFALO MATERIAL RESEARCH CENTER D&D
BUFFALO, NY

**Univ of Rochester**

Cross section of building 1050

**AREVA**

Wuergassen Reactor BWR, Germany

**Burns McDonnell**

Uranium Fuel Production Facilities

**WCS**

Andrews, Texas
Technical Qualifications – Company Structure

Entergy Ownership

- Entergy Corporation
  - Entergy Nuclear Holding Company LLC
    - Entergy Nuclear Holding Co. #3 LLC
    - Entergy Nuclear Vermont Inv. Co., LLC
    - Entergy Nuclear Vermont Yankee, LLC (Licensed Owner)
      - Entergy Nuclear Operations, Inc. (Licensed Operator)

NorthStar Ownership

- NorthStar Group Holdings, LLC
  - LVI Parent Corp.
  - NorthStar Group Services, Inc.
    - NorthStar Decommissioning Holdings, LLC
      - NorthStar* Vermont Yankee, LLC (Licensed Owner)
      - NorthStar Nuclear Decommissioning Company, LLC (Licensed Operator)

* Formerly known as Entergy Nuclear Vermont Yankee, LLC
Technical Qualifications – NorthStar Team Structure

NorthStar Decommissioning Holdings, LLC

Morgan, Lewis & Bockius
(Regulatory Legal Counsel
DOE Litigation Support)

NorthStar Vermont Yankee, LLC
Licensed Owner
(formerly Entergy Nuclear Vermont Yankee)

NorthStar Nuclear Decommissioning Company, LLC
Licensed Operator

AREVA
(Vessel Segmentation & Spent Fuel Support)

Waste Control Specialists
(Waste Management, Transportation & Disposal)

NORTHSTAR
(Program Management/D&D)

Burns & McDonnell
(Owner’s Engineer)

Project Subcontractors
## Target Project Schedule - Overview

<table>
<thead>
<tr>
<th>NorthStar Ownership (Target 12.31.2018)</th>
<th>Partial Site Release (Target 12.31.2026)</th>
<th>License Termination (Est. 12.31.2052)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2016</strong></td>
<td><strong>2017</strong></td>
<td><strong>2018</strong></td>
</tr>
<tr>
<td>Dry Fuel Storage Program (Fuel on ISFSI - Dec. 31, 2018)</td>
<td>Completed by Entergy</td>
<td></td>
</tr>
<tr>
<td>Large Component Removal</td>
<td>Engineering &amp; Planning</td>
<td>Complete - March 2022</td>
</tr>
<tr>
<td>Decontamination &amp; Decommissioning</td>
<td>Pre-Closing Work</td>
<td></td>
</tr>
<tr>
<td>Spent Fuel Management</td>
<td>ISFSI Operations and Management (2019 thru 2026)</td>
<td></td>
</tr>
</tbody>
</table>

**Target Project Schedule**
- Regulatory Commitment for Partial Site Release is 12.31.2030
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Financial Assurance for Decommissioning

• Minimum Nuclear Decommissioning Trust (NDT) balance satisfies 10 CFR 50.75(e)(1)(i) as a prepayment method of providing decommissioning financial assurance
• NDT to be retained by NorthStar Vermont Yankee, LLC
  • Financially qualified in accordance with 10 CFR 50.33(f)(2)
  • NDT fund meets prepayment method based upon updated DCE
• Minimum NDT balance at license transfer ensures ability to start D&D no later than 2021 and ensures partial site release and site restoration by 2030
  • Contract milestones and project schedule penalties ($25 million irrevocable LOC tied to project start and completion milestones)
Nuclear Decommissioning Trust/DCE

(10 CFR 50.75 Financial Assurance)

Guaranteed Fixed Payment
(Risk owned by NorthStar Team and Bonding Companies)

NorthStar Corporate Guarantee

Team Performance Bonds
(Majority of D&D Project Costs)

Team Contractual Commitments

$125M Support Agreement
Funding Assurance Under 10 CFR 50.75

**VERMONT YANKEE - NRC FUNDING OVERVIEW**

<table>
<thead>
<tr>
<th>Sources</th>
<th>Uses</th>
<th>Surplus</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDT at Closing (Excludes Site Restoration Funds)</td>
<td>License Termination (Excludes Site Restoration)</td>
<td>Surplus $10,876</td>
</tr>
<tr>
<td>Est. NDT Growth $412,56</td>
<td>SFM * $20,000</td>
<td></td>
</tr>
<tr>
<td>$513,530</td>
<td>Taxes $25,460</td>
<td></td>
</tr>
</tbody>
</table>

*Spent Fuel Management*

<table>
<thead>
<tr>
<th>License Termination (10 CFR 50.75)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Management</td>
<td>$83,494</td>
</tr>
<tr>
<td>Decontamination and Decommissioning</td>
<td>$223,174</td>
</tr>
<tr>
<td>Large Component Removal</td>
<td>$94,993</td>
</tr>
<tr>
<td>Project Management</td>
<td>$93,335</td>
</tr>
<tr>
<td>ISFSI Decommissioning</td>
<td>$3,454</td>
</tr>
<tr>
<td><strong>Total License Termination Costs</strong></td>
<td><strong>$498,450</strong></td>
</tr>
</tbody>
</table>

Thousands of 2016 Dollars

NDT Funds meet Pre-Paid Method Requirements under 10 CFR 50.75
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Other License Transfer Requirements

Spent Fuel Management

• ENVY, under NorthStar ownership, will retain SNF rights and obligations pursuant to DOE standard contract
• NorthStar will be responsible for ISFSI decommissioning
• Spent fuel management funded by NorthStar
• ISFSI maintenance to be funded by using up to $20 million of NDT funds at any one time under existing exemption augmented by annual recoveries of damages from DOE (10 CFR 50.54 (bb))
  • Further assured by $125 million Support Agreement
Other License Transfer Requirements

Foreign Ownership and Control

• NorthStar’s Board of Directors are all U.S. Citizens
• NorthStar and the licensee entities are not owned, controlled or dominated by any foreign person.

Insurance

• NorthStar NDC will obtain onsite property damage insurance and the offsite nuclear liability coverage
  • Discussions held with NEIL and ANI
  • Coverage will be in place on the effective date of transfer
  • VY exemptions on coverage amounts will continue to apply
Conclusion

License Transfer for Accelerated Decommissioning Approach

License Transfer satisfies NRC regulatory requirements and guidance

1. Technical Qualifications
2. Financial Qualifications and Decommissioning Funding
3. Foreign Ownership, Control, or Domination
4. Nuclear Insurance and Indemnity

License Transfer for Accelerated Decommissioning is in the public good for Vermont

1. Supports prompt decommissioning of VYNPS
2. Accelerates potential re-purpose of the site for economic development
3. NorthStar will be a fair partner to Vermont
### Next Steps

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Target Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>File license transfer application with NRC</td>
<td>Feb 2017</td>
</tr>
<tr>
<td>NRC approval</td>
<td>Dec. 2017</td>
</tr>
<tr>
<td>Vermont Public Service Board approval</td>
<td>March 2018</td>
</tr>
<tr>
<td>Spent Fuel moved to ISFSI</td>
<td>3Q-2018</td>
</tr>
<tr>
<td><strong>Transaction Close</strong></td>
<td><strong>End of 2018</strong></td>
</tr>
</tbody>
</table>