



Webinar Series on Reactor Issues & Shutdown Campaigns

January 29, 2014

FROM SHUTDOWN TO CLEANUP:

The Historic Vermont Yankee Decommissioning Deal

Presentations by:

- Deb Katz – Citizens Awareness Network
- Chris Williams – NIRS and VT Citizens Action Network
- Amy Shollenberger – Action Circles

DECOMMISSIONING AND THE VERMONT CONTEXT

Deb Katz

Executive Director

Citizens Awareness Network



Contact:

(413) 339-5781

deb@nukbusters.org

www.nukbusters.org

Twitter: @nukbusters

VT States Rights Campaign

- 9/11 Fuel Pool vulnerability
- NRC and nuclear industry addressing terrorism as a public relations problem
- Empowered Vermont Legislature to decide Vermont Yankee's Future

Passage of Act 160

- Door-to-door organizing, district by district
- Lobbying campaign
- Coalition work
- State rejection of Vermont Yankee's continued operation 2010
- Entergy announces closure in 2014

Decommissioning

- Demonstrates Colossal Failure of nuclear power
- Nuclear reactors are toxic waste dumps
- Cleanup costs skyrocket as surveys uncover greater plumes of contamination
- Yankee Rowe site never released because of PCB contamination



Underfunded Utility-Owned Decommissioning Funds

- Yankee Rowe and Connecticut Yankee decom funds substantially underfunded
- Yankee Rowe cost \$39 million to build
 - over \$700 million to cleanup
 - CT Yankee decom cost over \$1 billion
- Operators return to the rate base to shore up funding

Underfunded Merchant Reactors: Crisis in Funding

- 1990s deregulation of energy production separated generation from transmission
- Created a fire sale on old nukes
- Merchant plants sell their power to utilities or directly to the grid
- No ratebase to return to replenish depleted decommissioning funds
 - extending period of SAFSTOR
- Concerns about corporate responsibility

Decommissioning Options

NRC Regulations Provide Three Options:

- **DECON** – rapid dismantlement
- **SAFSTOR** – up to 60 years to complete site restoration
- **Entombment** – never released for unrestricted use



NRC and Decommissioning Before Yankee Rowe:

- Classified as Major Federal Action under NEPA
- Required oversight by NRC and EPA
- Licensees submitted detailed decommissioning plans with clearly described commitments
- Onsite resident inspectors
- NRC Subpart D hearings available to petitioners including cross examination.

Decommissioning at a Regulation Crossroads

- Yankee Rowe's cleanup deregulated decommissioning
 - No longer considered a Major Federal Action
 - No detailed plans required
 - No on site resident NRC inspectors
 - Limited oversight
- Corporations can strip and ship components with a 12-page document.
- NRC Hearings curtailed:
 - Only Subpart I with no ability to cross examine witnesses

Decommissioning: Thorough and Responsible

CAN developed our own model to change the debate

Planned Decommissioning & Site Remediation (PDSR)

- Begin immediately upon closure:
 - Retain the skilled workforce with institutional memory
 - Transfer high-level waste to hardened dry-cask storage
 - Commence site surveying of ground water contamination
 - Remove non-essential buildings
 - Routine radiological inspections
 - Site environmental and radiation monitoring program
- Develop Decontamination and Dismantlement Plan

Dangers of Rapid Dismantlement (DECON)

- Exposure of workers to highly contaminated internals
- Contamination of site with hot particles
- Potential to contaminate the community
- Higher cleanup costs
 - More decontamination and worker protections
 - Higher waste disposal costs
- More rad waste to waste facility and communities
 - Barnwell, SC (Atlantic Compact: CT, NJ, SC)
 - Clive, Utah (Class A waste)
 - Andrews, Texas (Texas-Vermont Compact: open to other states)

THE VERMONT DEAL: IMPORTANT PRECEDENTS

Chris Williams

President, Vermont Citizens Action Network

NIRS Board Chair



Contact:

(802) 767-4276

cevan@sover.net

www.vtcitizen.org

Decommissioning Essentials

- Transfer of High Level waste to Hardened Dry Storage
- Wait 8 years to remove the highly contaminated internals
- Return site to unrestricted use:
 - both in terms of radioactivity and chemical contamination
- Creation of an independent Community Advisory Board by the state of Vermont

Vermont and Entergy Deal is Precedent Setting

- First merchant plant decommissioning
 - VY will set the standard
- First negotiation between state and corporation

The Deal and What it Accomplishes

- ENVY dismissing all litigation with state
- One year of operation:
 - CPG until Dec. 2014 with a commitment to closure
 - No specific decom date commitment
- Economic development \$\$ for Windham County
- CEDF escrow \$5 million will be released
- Unrestricted General Fund contribution of \$5mil in 2015

The Deal and What it Accomplishes (cont.)

- Entergy will complete site assessment by Dec. 2014
- Entergy will begin decommissioning 6 months after decommissioning fund is deemed adequate
- All radiological health rules will apply

The Deal and What it Accomplishes (cont.)

- Entergy will have a schedule/plan to move all fuel out of the pool by 2021
 - No binding agreement because NRC must approve any plan
 - State will grant CPG for new pad
 - ENVY wants to use decommissioning fund to pay for spent fuel
 - State of Vermont did not agree to that



The Deal and What it Accomplishes (cont.)

- Greenfielding:
 - Entergy sets aside \$25mil for site remediation over next 4 years
 - This is new money - \$10 mil + \$5mil +\$5mil +\$5 mil
 - Fund will reach \$60 million accumulated
 - If NOT USED for greenfielding, Entergy gets it back
- Agency of Natural Resources (ANR) retains unabated oversight (re: thermal discharge)

ESTABLISHING ACTIVISTS AS THE EXPERTS

Amy Shollenberger
People's Lobbyist
Action Circles



Contact:

(802) 767-4276

amy@action-circles.com

www.action-circles.com

Twitter: @amyaction

Act 160 – Vermont Says No to VY

- Passed in 2006 – Act 160 said that without legislative approval, VY could not get a CPG
- It also required the state's Department of Public Services (DPS) and the Senate-House Joint Energy Committee arrange for studies regarding long-term accountability, financial responsibility, environmental, economic, waste and public health issues.
- In 2010, Vermont said NO. Lawsuits ensued...
 - Commentary by Bob Bady:
<http://www.valleyadvocate.com/article.cfm?aid=17185>
 - More on the lawsuits: <http://vtyankeelawsuit.vermontlaw.edu/all-posts/>

The Bottom Line with Act 160

- The people saying NO were no longer alone. Now the state had joined in the fight.

<http://youtu.be/eNjGRinoU0k>



You are right now on the steps of the building that is the building of the only legislature in the country who took matters in their own hands and had the judgment to stay no to an aging, leaking nuclear power plant...

--Governor Peter Shumlin

Jump Ahead to 2013

- Vermont Yankee announces that it will close the plant in a surprise press conference on August 27, 2013.

<http://www.prnewswire.com/news-releases/entergy-to-close-decommission-vermont-yankee-221304391.html>

- CAN jumps into action!
 - Identifying priorities for decommissioning process
 - Establishing CAN as go-to experts
 - Meeting with policymakers and stakeholders to clarify where VT had power and how we could use it

http://www.youtube.com/watch?v=kd5lKtDv_UQ



Vermont Yankee: Deliberate and Thorough Decommissioning Should Focus on Safety and Accountability

Vermont Citizens Action Network (VCAN) supports an interim cool down process for decommissioning the Vermont Yankee Nuclear Power Plant. The Nuclear Regulatory Commission (NRC) decommissioning regulations permit a wide range of approaches under the "SAFSTOR" method, including irresponsible approaches such as mothballing the plant for decades. **VCAN supports the *Planned Decommissioning and Site Remediation (PDSR)* approach, which involves securing the site and allowing an interim cool down period to maximize safety and reduce radioactivity.**

PDSR is a method that allows for a deliberate and thorough decommissioning that keeps the skilled and experienced workforce at the plant, allows for adequate planning and careful dismantlement, and focuses on safety and accountability.

PDSR can also decrease the cost of dismantlement and decommissioning. For example, the cool down process can significantly reduce the amount of waste that must be moved to a waste facility.

VCAN supports this PDSR deliberate and thorough process, and we note a few key requirements:

1. *The spent fuel must be moved out of the pool and into hardened, on-site storage as soon as possible.*
2. *The skilled workforce that is specifically knowledgeable about and experienced with the Vermont Yankee plant must be retained for the PDSR planning and implementation (up to 60% of the workforce may be needed).*
3. *The ultimate goal must be "greenfielding" the site - returning it to unrestricted use, both in terms of radioactivity and chemical contamination.*
4. *A Community Advisory Board must be involved in the oversight of the decommissioning process.*

PDSR Site Activities

- 1) Securing the Site & Preparing for Decommissioning
 - a. Transfer spent fuel from fuel pool to hardened on-site storage.
 - b. Begin clean up and removal of non-essential uncontaminated or minimally contaminated structures.
 - c. Perform radiation survey of plant
 - d. Begin site surveying of radioactive and chemical waste.
- 2) Interim Cool Down
 - a. 24-hour security
 - b. Continued clean up and removal of non-essential uncontaminated or minimally contaminated structures.
 - c. General building maintenance
 - d. Routine radiological inspections
 - e. Site environmental and radiation monitoring program
 - f. Develop Decommissionation and Dismantlement Plan
- 3) Implement Decommissionation and Dismantlement Plan
- 4) Site Restoration to Unrestricted Use
 - a. Radioactivity below 10 mrem
 - b. Chemical contamination cleaned up
- 5) Waste Monitoring Operations

Rancho Seco as a Model

The Sacramento Municipal Utility District (SMUD) closed the Rancho Seco Nuclear Generating Station in June 1989, after 14 years of operation. SMUD retained a majority of the workforce during a PDSR-SAFSTOR process, and incremental dismantlement began in 1997, after an interim cool down period that also allowed funds to accumulate for this process. Except for 11 acres, the site was returned to unrestricted use in 2009. Waste continues to be monitored on-site in dry cask storage, with continuous security. SMUD has committed to renewable energy, and reports that as of 2010, it supplied 24% of its energy from renewable energy sources.

<p>Initial Activities:</p> <ul style="list-style-type: none"> • VY submits written certification of permanent cessation of operations to NRC • Prompt transfer of spent fuel to dry cask storage • Decontamination and removal of off-gas building • VY submit Post-Shutdown Decommissioning Activities Report (PSDAR) to NRC 	<p>Major Decommissioning Activities:</p> <ul style="list-style-type: none"> • Removal of major components after 8-10 years • Must facilitate release of site for unrestricted use • Must prevent significant environmental impacts that have not been reviewed 	<p>License Termination Activities:</p> <ul style="list-style-type: none"> • VY must submit a License Termination Plan (LTP) to NRC within 2 years of expected license termination. • Site must be returned to unrestricted use.
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Our Work Helps Get a Good Deal

- State officials negotiated with VY officials to draft an MOU that will go into effect if the state approves a CPG for operation of VY until Dec. 2014.

[http://www.youtube.com
/watch?v=N1AaNpRUp
MM](http://www.youtube.com/watch?v=N1AaNpRUpMM)



Our Work Forges a Path for Others

- The deal includes all of CAN's priorities, except a Citizens Advisory Board.
 - We continue to work with Administration officials to move forward with a plan for a CAB.

PR NEWSWIRE: Deal to close Vermont Yankee could be road map for others

<http://www.telegram.com/article/20131227/NEWS/312279746/-1/RSS02&source=rss>



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