



W16 - Regulatory Improvements for Power Reactor Decommissioning

US Nuclear Industry Views on Power Reactor Decommissioning Requirements

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Drivers of Early Shutdown Decisions

- For plants shutting down prior to the turn of the century, early shutdown decisions were less complicated/dynamic
- Then the world changed....



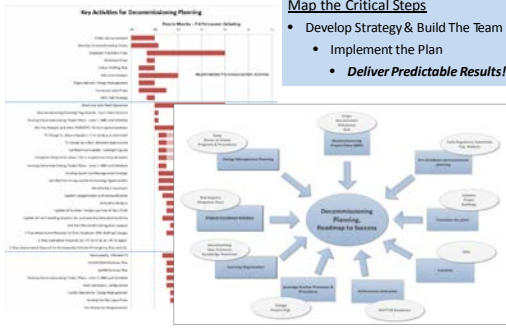
Recent Premature Nuclear Plant Shutdowns

Plant	MWe	Closure Year	Latest Electricity Generated (billion kWh per year)	Latest CO2 Emissions Avoided (million tons/year)
Crystal River 3	860	2013	7.0	5.3
San Onofre 2 & 3	2,150	2013	18.1	8.8
Kewaunee	566	2013	4.5	4.8
Vermont Yankee	620	2014	5.1	2.7
Fort Calhoun	479	2016	3.5	3.7
Palisades	811	2018	5.8	5.0
Pilgrim	678	2019	5.0	2.6
Oyster Creek	610	2019	5.3	4.4
IPEC 2 & 3	2,083	2020/21	16.6	8.5
Diablo Canyon	2,240	2025/26	18.5	8.5

11,101 MWe of baseload capacity
54.3 million short tons of CO₂ avoided
13% of Clean Power Plan's 2030 414-million-ton target
Over 9,200 direct jobs

Vermont Yankee Experience: Clarity of Vision Is Critical

There's a lot to accomplish....driven to provide predictable results



- Map the Critical Steps**
- Develop Strategy & Build The Team
 - Implement the Plan
 - **Deliver Predictable Results!**

Industry Supports Timely, Focused Rulemaking

- Transition from operations to decommissioning is unnecessarily inefficient, burdensome & costly
- Licensing actions take 12-18 months to complete
- Licensing process costs millions

ILLUSTRATIVE OF EARLY LICENSING ACTIONS
CERTIFICATIONS OF PERMANENT CESSATION OF OPERATIONS AND DEFUELING
Notification of Cessation of Ops
Certification of Permanent Cessation of Operations
Certification of Permanent Removal of Fuel
PHASE I STAFFING
Changes to TS Section 5.0 (Administrative Controls) to reflect Decommissioning Staffing and Training
Certified Fuel Handler Training Program
Request exemption to 10 CFR 73.55(p)(i) and (ii) allow Certified Fuel Handlers to suspend security measures
Emergency Plan Amendment Request for Post-Shutdown ERO Staffing Changes
PHASE II STAFFING
10 CFR 50.47 & 10 CFR 50 App E exemption requests
Emergency Plan and EAL Revision amendment request
TECHNICAL SPECIFICATIONS
Permanently Deleted Technical Specifications

Efficient Transition Benefits All Stakeholders

- NRC has a **proven regulatory framework** for assuring the safety of decommissioning activities
 - o 10 US plants have safely completed decommissioning
 - o 20 US plants are in the process of decommissioning
- Industry is capitalizing on the **lessons learned** and developing **innovative ways** to make the process more efficient

Eliminate unnecessary barriers and licensing actions by developing a regulatory framework that efficiently governs the transition from operations to decommissioning

Vermont Yankee Experience: Decommissioning Approach

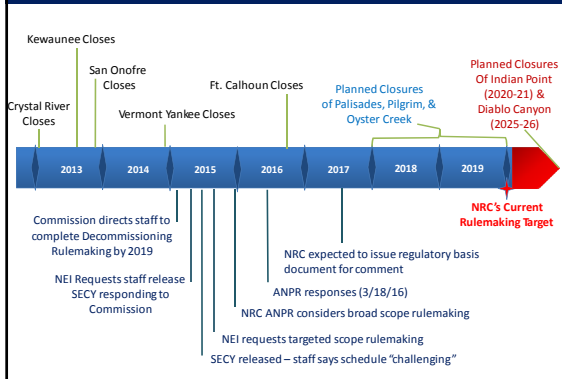
- Align work with core business competencies
- Timely, compliant decommissioning
- Optimize NDT funds
- Accelerate spent nuclear fuel transfer to dry storage
- Employee and Community commitment

Principled Approach	Entergy	NorthStar	VERMONT
<i>Business Alignment</i>	Strategic Alignment Focus on nuclear operational excellence	Team Core Competency Decom & Demo & Waste Disposal	Economic Impact D&O work and re-develop site promptly
<i>Risk Management</i>	Risk Management Aligns with core competency	Financial Assurance GF&B Bonding & Support Agreement	Confidence On-time, on budget, health & public safety
<i>Schedule Certainty</i>	Commitment Fulfills 2013 commitment to State Accelerate Fuel on Fuel	Accelerate Decom Committed Schedule (2021 – 2030)	Certainty Regulatory & contractual commitments

NRC's Advanced Notice of Proposed Rulemaking

- “the need for a power reactor decommissioning rulemaking is not based on any identified safety-driven or security driven concerns.”
- “the primary objective of the decommissioning rulemaking is to implement appropriate regulatory changes that reduce the number of licensing actions needed during decommissioning”

NRC Rulemaking Timeline



Industry Recommendations

- Industry recommends that NRC pursue an appropriately scoped rulemaking to address the current transition inefficiencies
- Industry believes that already approved exemptions and license amendments provide NRC with a sound regulatory basis
- Industry comprehensive rulemaking proposal submitted March 17, 2016

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Prior NRC Approvals Provide Sound Regulatory Basis

- Already approved exemptions and license amendments provide NRC with a sound regulatory basis
- Industry rulemaking proposal submitted March 17, 2016
 - Transition in requirements ***operable by rule***
- Eliminates process of obtaining exemptions and license amendments at the following points:

Transition Points	What is Transitioning
Permanently Defueled	Emergency Preparedness (EP), Security, Work Hours, Staffing/Training, Use of Trust Fund for Spent Fuel Expenses
Permanently Defueled – with qualifying SFP analysis	EP, Insurance
All Fuel in Dry Storage	EP, Security, Staffing/Training, Foreign Ownership
All Fuel Removed from Site	EP, Security

Other's Rulemaking Perspectives

From NRC presentation 5/14/2016 (the same views were echoed in a 9/16/2010 letter from 14 members of Congress to the NRC Chairman)

Representative Comments



- Against relaxation of requirements with fuel still in the pool / transfer fuel to ISFSI ASAP
- Increase involvement of State and local governments and public groups / require CAP
- Against SAFSTOR / 60 years too long
- NRC should approve PSDAR / reinstate DP
- Increase decommissioning funding oversight
- Supportive with specific suggestions

Safe/Secure AND Efficient Transition

- Efficient transition does not mean a “relaxation” safety and security
- Furthermore, there are no safety or security reasons to leave operating plant requirements in place post shutdown and reactor defuel
- Owners, vendors and decom businesses providing solutions proactively
 - CAPs/CEPs established in current environment
 - Prompt DECON being implemented: DGC, Lic Transfer
 - Accelerate spent nuclear fuel transfer to dry storage
 - Decommissioning the “Nuclear Way”

Transition to Decommissioning: *Operable By Rule*

- Recognize the reduction in risk that occurs post de-fuel
 - Transition in requirements *operable by rule*, eliminating the need for exemptions and license amendments
- No need to require NRC approval of PSDAR
 - PSDAR must be conducted in accordance with existing NRC regulations
- Maintain SAFSTOR option
 - Advance efficiencies, technology, commercial and other optionality
 - Long pole in the tent: DOE removal of used fuel from the site
- Current NRC funding requirements are adequate
 - NEI submitted guidance (NEI 15-06)
- Support (not mandate) stakeholder engagement

Industry Priorities

1. Focus resources on resolving issues for plants currently in or about to enter transition
2. Assure plants can be safely decommissioned with available decommissioning trust funds
3. Share transition experience & lessons learned
4. Obtain efficient, predictable regulatory framework
5. Ensure that final rulemaking does not adversely impact plants that have moved to “ISFSI Only” and still maintain 10CFR Part 50 license

Questions?
