

Minimizing NPP Long-Term Liability Through Decommissioning

The “hard” part of decommissioning

Presented at:

2017 International Conference

Decommissioning of Nuclear Power Plants

St. Petersburg, Russia

October 2-4, 2017

Michael Meisner



Maine Yankee

1968 – construction

1972 – operation

Shut down – August, 1997

\$550M - 8 years



Prompt decommissioning

Minimize long term personnel and maintenance costs

Avoid future uncertainties:

- closure of rad-waste disposal facilities

- changes in regulatory requirements



Community engagement

Long history of community opposition while operating

Parties engaged during decommissioning, reaching agreements on cleanup standards, beneficial re-use of the site, post-decomm groundwater monitoring, ...

Decommissioning Stakeholders

NPP and Community interests converge in decommissioning



Perceptions and Opinions

The hard lessons of decommissioning

Decommissioning is not an extension of the operating phase

- nuclear operators' understanding of decommissioning is superficial
- decommissioning is a separate discipline
- operations training and habits are handicaps

NPP and Community interests, for all practical purposes, are identical

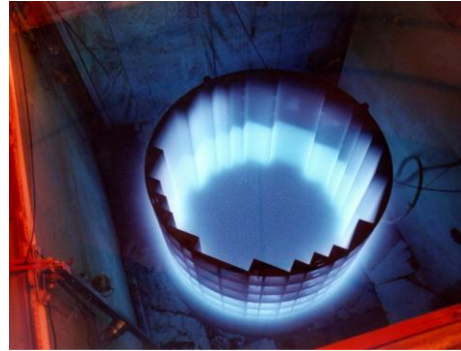
- Owner: closure - recognition that cleanup criteria have been met and owner obligations are satisfied
- Community: confidence that the site end-state is safe for beneficial re-use

Neither party's interests can be satisfied unless both are satisfied

- closure is a social contract.

D & D

Decommissioning And Dismantlement



The Operations Phase and Decommissioning Phase have little in common

Decommissioning plans prepared with an operations mindset lead to costly re-work and lengthy delays.

	Operations	Decommissioning
Nature of the work	Static – cyclic	Dynamic – activities occur once
	Routine – predictable	Few roadmaps - innovation is the norm
Site authority	Control room operators	Project managers
Nuclear accident consequences	Large	Nil
Nuclear standards (QA, etc.)	Applied to all safety-significant activities	Applied to activities and data analysis supporting compliance with cleanup standard
Community interaction	Emergency planning, security and taxation	Negotiate mutually beneficial agreements concerning site end-state

Similar circumstances

+

Common owners

=

Different outcomes

Connecticut Yankee (CY)

11 years (1996-2007)

\$1,200,000,000

Maine Yankee (MY)

8 years (1997-2005)

\$550,000,000

		CY	MY
Culture	primary owner	operations	non-nuclear
	decommissioning project	operations	non-nuclear
Community relations	operating phase	poor	poor
	decommissioning phase	worsened	positive, constructive

Site end-state

The Operator will remediate the site to a cleanup standard intended to be protective of public health & safety. The Community must live with the results.

	Best Interests	Worst Outcome
Owner	Reduction of long-term liability (i.e., closure)	Discovery of residual radioactivity after completion of decomm
Community	Was the cleanup standard achieved? Is the cleanup standard protective? Is the site safe for unrestricted use?	Discovery of residual radioactivity after completion of decomm

The Community interests depend on confidence that the Operator has done its job.

The Owner interests depend on Community confidence in the remediation effort.

Mutual Benefit - Example

Removal of building foundations is a “show – stopper”

- Decomm costs more than double
- active decommissioning would cease

Foundation remediation via ‘rip and ship’ removes virtually all contamination

Community interest is in stricter cleanup standards

Agreement between MY and FOC

- MY commits to low cleanup standard based on ‘rip and ship’ experience
- FOC supports leaving foundations in place based on reduced cleanup standard offsetting any residual dose from the foundations

Background:

Rad-waste disposal and transport costs greatly exceed those of “clean” waste

Therefore, minimize rad-waste volume by:

- surgical removal of material,
- survey exposed surface,
- repeat until “clean”

In practice:

Cost of technician time exceeds all savings due to minimizing volume

Instead:

- Minimize technician time
- “Rip and Ship”

Community Engagement

Start with information

Open up the process

- Invite the community leaders to participate
- Community Advisory Panel

Identify stakeholder interests in the site end-state

Engage on issues of common cause

For the Nuclear Operator – Part I - Summary

Chances are that most of what you've just heard is foreign – it doesn't fit in with your training and experience. That is the point.

If you think completion of decommissioning brings closure and elimination of long-term liability, you may be mistaken. The decommissioning “nightmare” – re-performing nuclear remediation – is not eliminated by finishing a decommissioning project.

Finality, closure, elimination of long-term liability all depend on a social contract with the Community. Decommissioning is complete when the parties agree it is complete.

For the Nuclear Operator – Part II – Next Step

Skeptical?

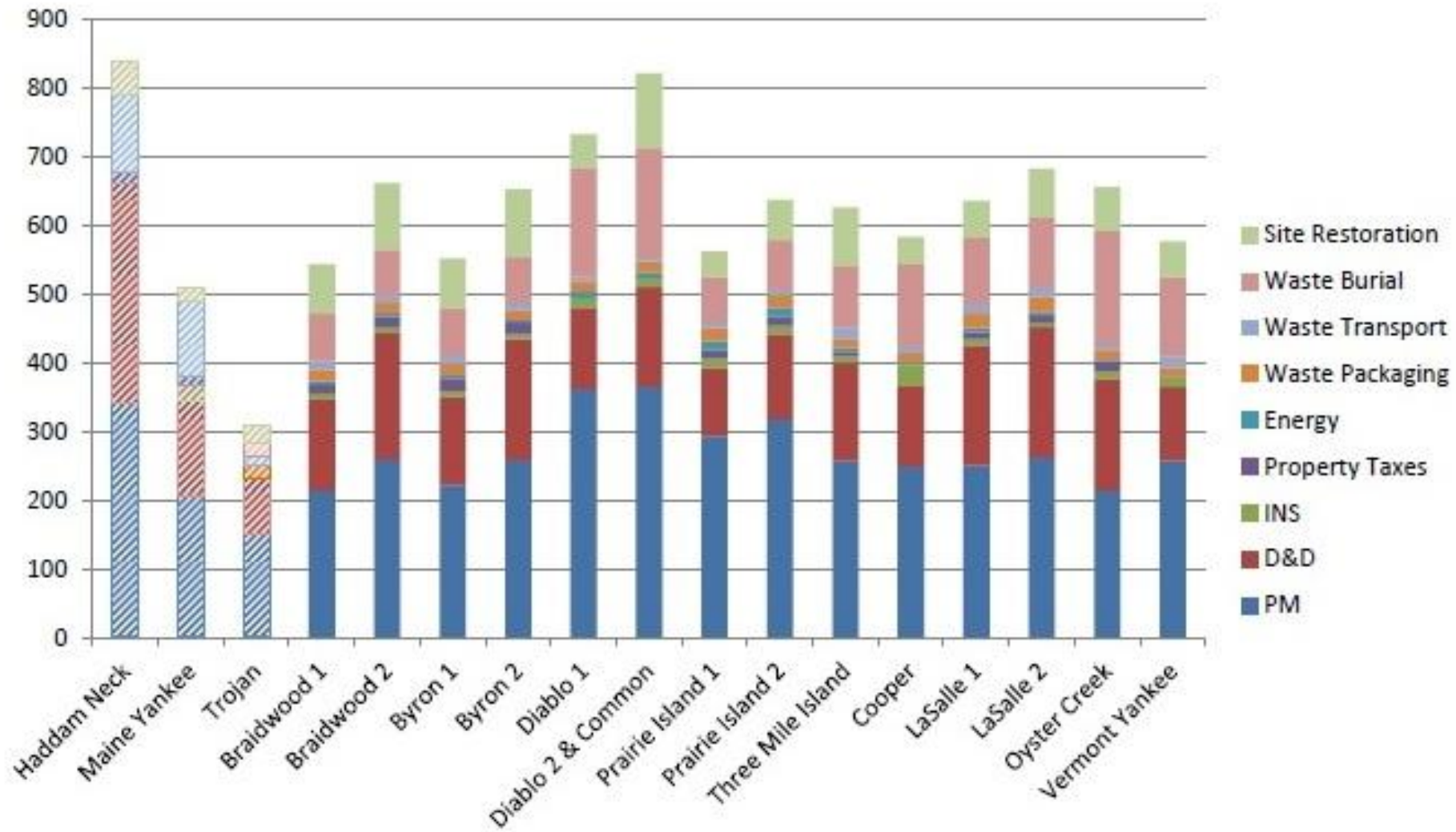
Treat this presentation as a report of operational experience and determine its applicability to your organization

Convene a focused examination of the non-D&D aspects of decommissioning. Staff the effort with a small number of trusted senior personnel who are comfortable speaking truth to authority.

Then believe their findings.

For the Community

- Define your end-state and understand the activities necessary to achieve it
- Identify areas of mutual benefit and common cause.
- Commit to the time and effort needed to support timely interactions with the Operator



September 7, 2016

US operators urged to decommission immediately to prevent cost hikes

<http://analysis.nuclearenergyinsider.com/us-operators-urged-decommission-immediately-prevent-cost-hikes>