

# Three Mile Island Unit 2

## Environmental Regulatory Approach to TMI-2 Decommissioning



Presented to the  
U.S. Nuclear Regulatory Commission  
February 20, 2020

# Purpose

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- Introductions
- Provide brief history of TMI-2
  - Accident, cleanup, PDMS
  - Current setting
- Describe TMI-2 *Solutions/GPU Nuclear* current evaluation on environmental compliance for transition to DECON
- Gather insight/feedback from NRC staff
- Discuss next steps

# Introductions

Affiliation	Name	Title
GPU Nuclear	Greg Halnon	President/Chief Nuclear Officer
	Mike Casey	TMI-2 Project Manager
	Beth Wetzel	Licensing Manager
	Jim Byrne	Decommissioning Manager
TMI-2 <i>Solutions</i>	Ron Worster	TMI-2 Project Director
	Gerry van Noordennen	V.P. Regulatory Affairs
	Kim Anthony	Environmental Manager

# Brief History of TMI-2

- Construction permit November 1969
- Operating license February 1978
- Online December 1978
- Accident March 1979
- Cleanup and DOE acceptance of ~99% of damaged core material 1990
- Enter PDMS 1993

# Reg Approach to Accident Cleanup

- **Programmatic Environmental Impact Statement (PEIS) and Supplements 1 - 3**
  - Analyzed four major activities
    1. Building and equipment decontamination
    2. Fuel removal and decontamination of the primary coolant system
    3. Treatment of radioactive liquids
    4. Packaging, handling, storage and transportation of radioactive wastes

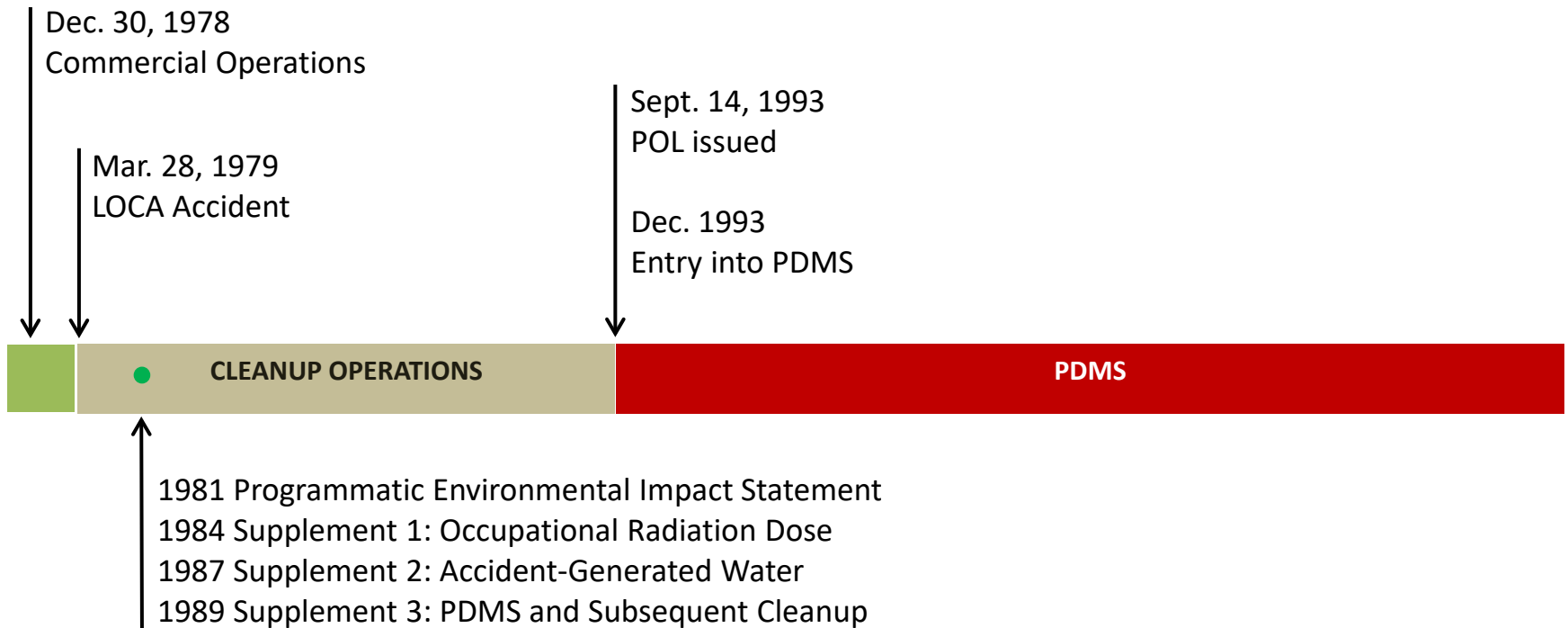
# Reg Approach to Accident Cleanup

- PEIS Main Report: *Occupational dose most significant environmental impact of cleanup*
- PEIS Supplement 1 (1984)
  - Re-evaluation of occupational dose and resulting health effects from cleanup
- PEIS Supplement 2 (1987)
  - Updated environmental evaluation of accident-generated water disposal alternatives
- PEIS Supplement 3 (1989)
  - Updated environmental evaluation of proposed cleanup effort, PDMS and alternatives

# Reg Approach to Accident Cleanup

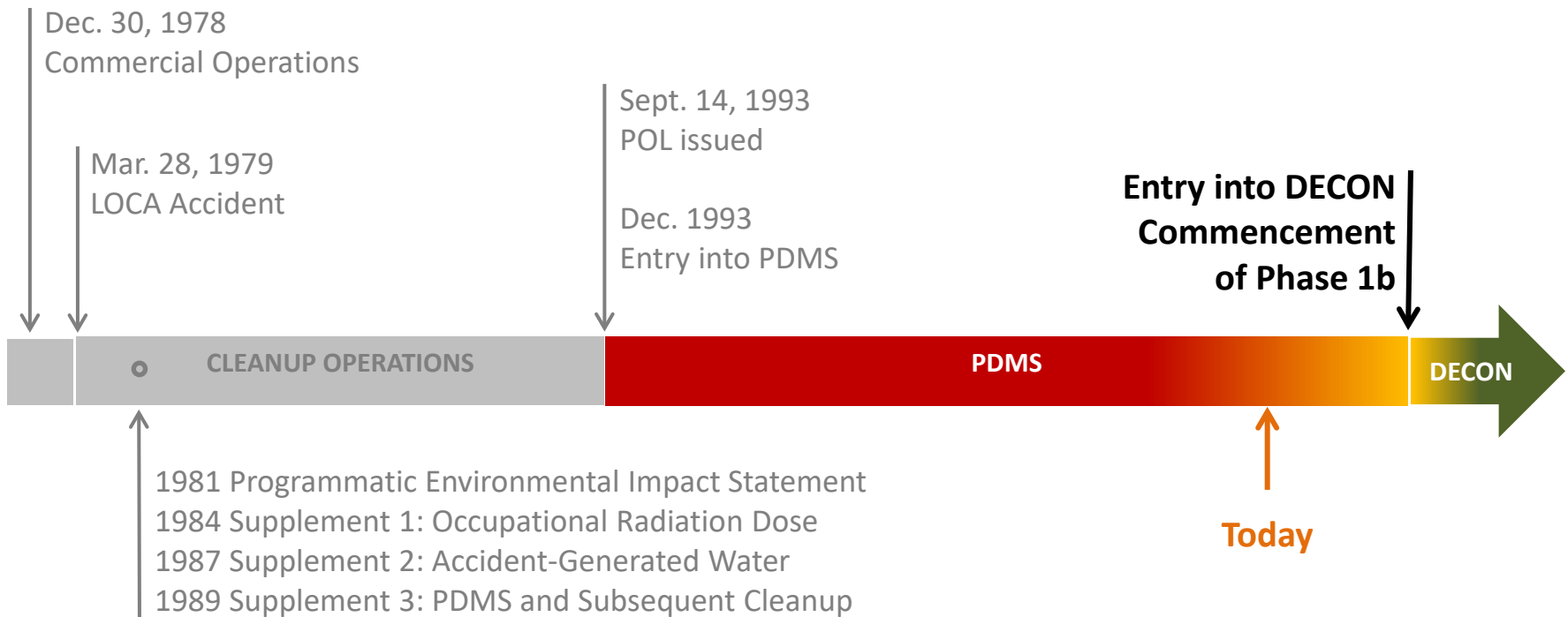
- PEIS Supplement 3 alternatives included:
  - Immediate or delayed cleanup of remaining 1% of accident waste
  - Immediate or delayed full decommissioning
  - Length of stay in PDMS
- No alternative superior, all bound by PEIS
- “Delayed Cleanup Alternative”
  - Selected course of action
  - PDMS followed by completion of cleanup

# TMI-2 Chronology

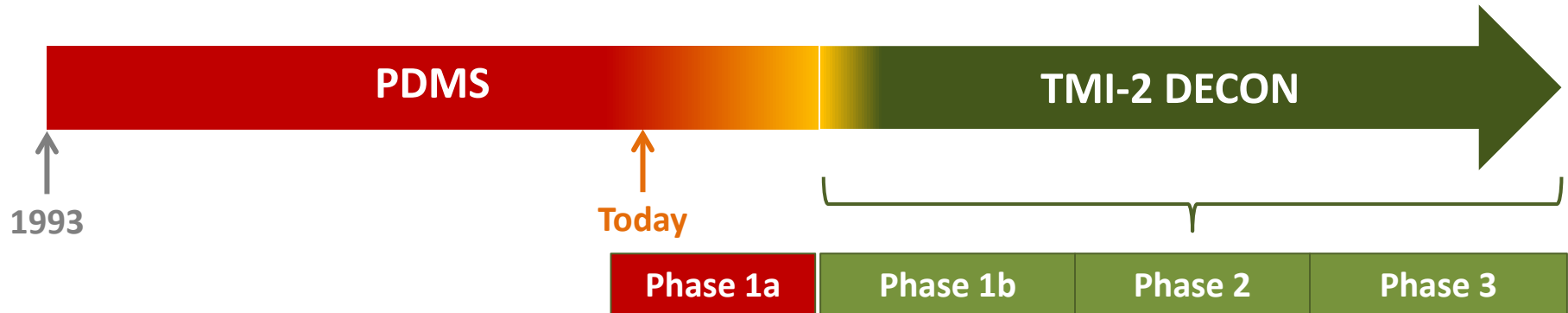




# TMI-2 Current Setting



# TMI-2 Work Phases



**Phase 1a:** Licensing, planning, engineering, transition (occurring now)

**Phase 1b:** Source term reduction (e.g., retrieval of remaining core debris)

**Phase 2:** Typical D&D, reduce licensed footprint to storage area only

**Phase 3:** Core debris management, license termination, site restoration

# 2020 Submittals



Between **Today** and entry into **DECON**, two submittals to NRC, each requiring environmental review:

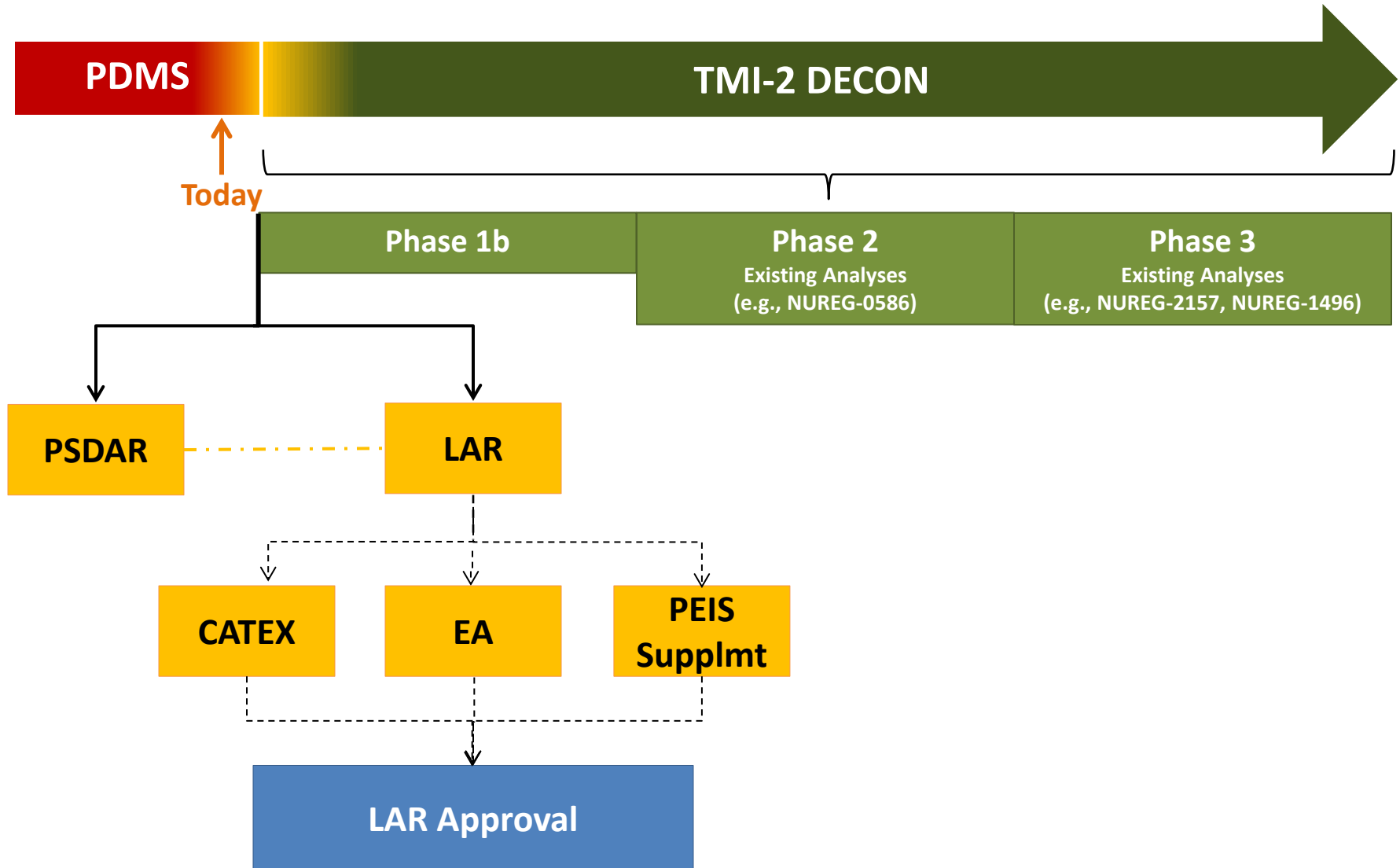
## 1. PSDAR Rev. 4

- Update decom activities and environmental impacts

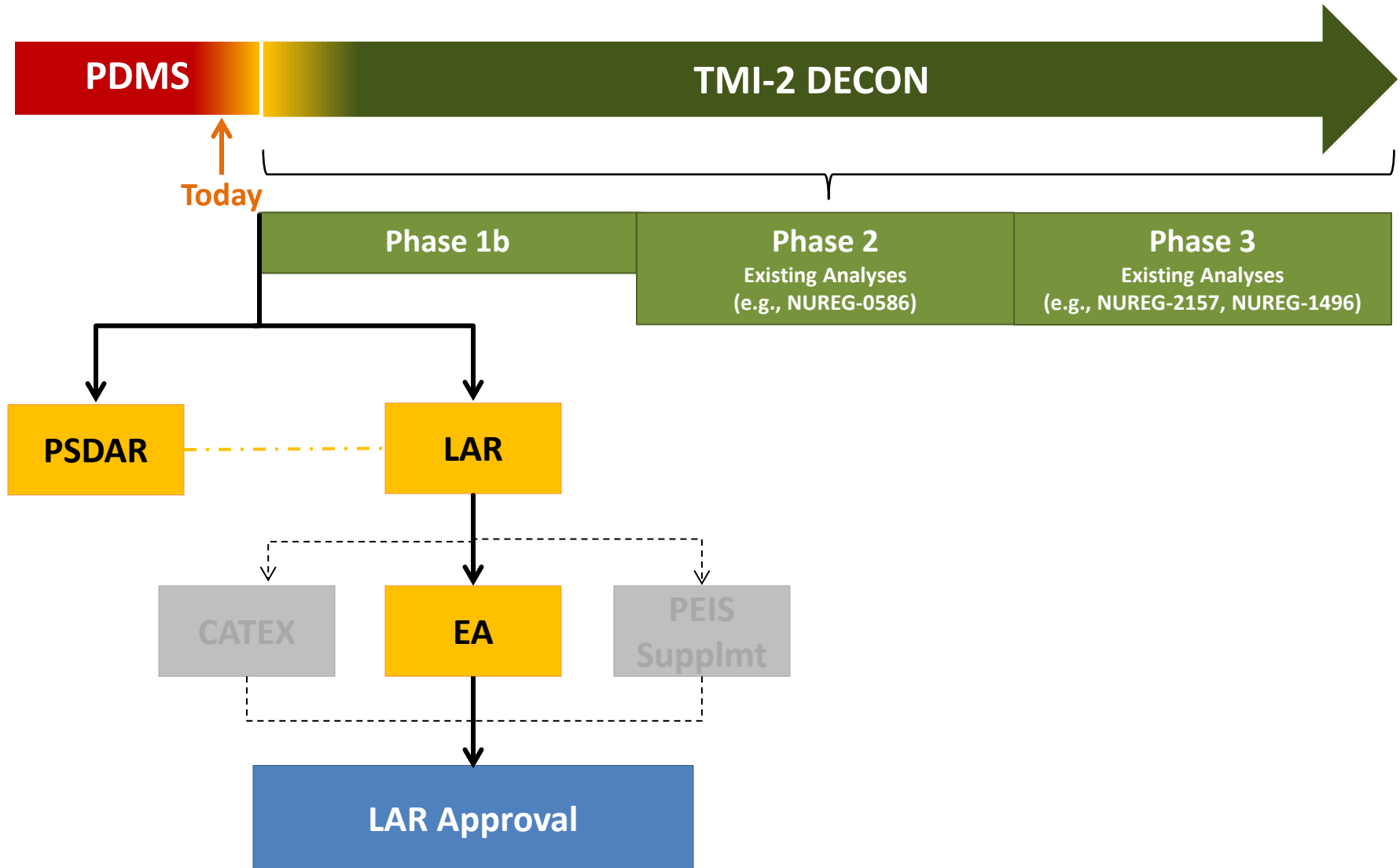
## 2. LAR for PDMS to DECON

- Transition from PDMS to DECON
- Part 51 NEPA review

# Environmental: Potential Pathways



# Environmental: Proposed Pathway



# Ongoing Evaluation of Current EIS

- Credit previously issued environmental analyses
- Compare existing analyses to current decommissioning plan, including:
  - Scope of PEIS discussion
  - Potential methods and technologies
  - Potential changes in population
  - Potential changed impacts
    - e.g., T&E species, air quality impacts

# Decom GEIS Applicability

- Decommissioning GEIS (NUREG-0586) issued in 1988, supplemented in 2002

*...decommissioning activities following shutdown of a facility after a major accident resulting in significant contamination of the site are outside the scope of this Supplement. For most types of accidents, decommissioning would be treated on a site-specific basis and, therefore, cannot be considered in a generic sense.*
- **However**, endpoint of Phase 1b will be a radiological condition similar to an operating plant at the end of its operating life that has not undergone an accident
- Justification for reliance on GEIS will be provided in environmental reviews in PSDAR Rev. 4 and LAR submittals

# Submittal Schedule

Activity	Date
Submitted License Transfer Application	Nov. 12, 2019
Submitted PSDAR Rev. 3	Dec. 12, 2019
*Submit PSDAR Rev. 4	Q4 2020
*Submit LAR (PDMS to DECON)	Q4 2020

\* Q4 2020 submittals are contingent upon LTA approval and the closing date occurs as scheduled



