



# NRC PUBLIC MEETING

## PALISADES NUCLEAR PLANT

### POST-SHUTDOWN DECOMMISSIONING ACTIVITIES REPORT

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SEPTEMBER 22, 2022

OFFICE OF NUCLEAR MATERIAL  
SAFETY AND SAFEGUARDS

# PALISADES NUCLEAR PLANT POST SHUT DOWN DECOMMISSIONING ACTIVITIES REPORT PUBLIC MEETING

September 22, 2022

**The purpose of tonight's meeting is to:**

Provide awareness to the community of the plans and schedule for decommissioning the Palisades Nuclear Plant

Seek public comment and feedback on the Palisades Nuclear Plant Post-Shutdown Decommissioning Activities Report (PSDAR)

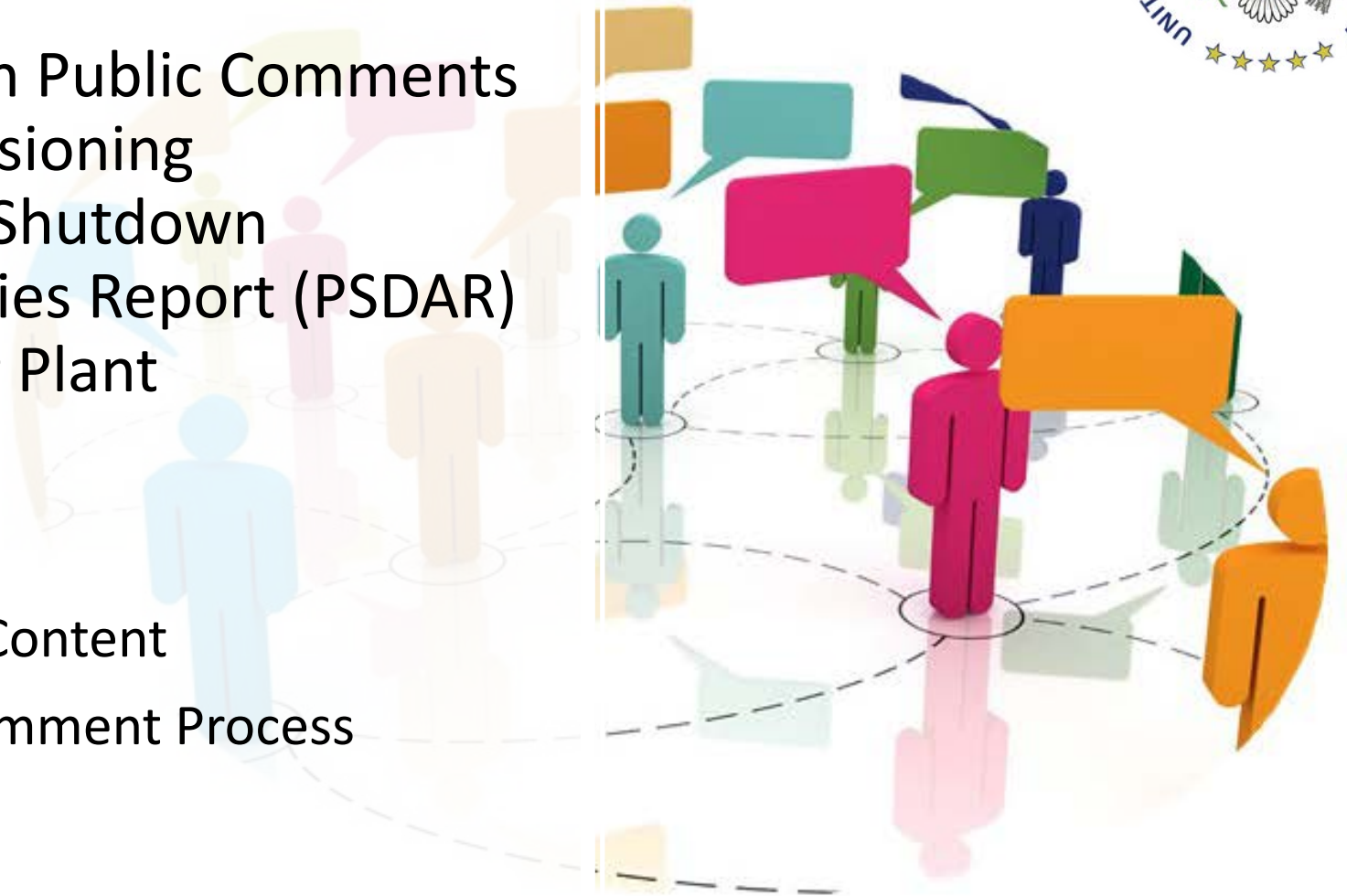
Answer questions about the NRC's decommissioning process and method for reviewing the Palisades PSDAR

Hear any community concerns related to the plan for decommissioning Palisades



# MEETING AGENDA

- **Meeting Purpose:** Obtain Public Comments on the Holtec Decommissioning International (HDI) Post-Shutdown Decommissioning Activities Report (PSDAR) for the Palisades Nuclear Plant
- Introductions
- Decommissioning Program
- Palisades Status and PSDAR Content
- PSDAR Review and Public Comment Process
- Public Comments
- Close Meeting by 8:00 p.m.



# NRC OPERATING AND DECOMMISSIONING STAFF



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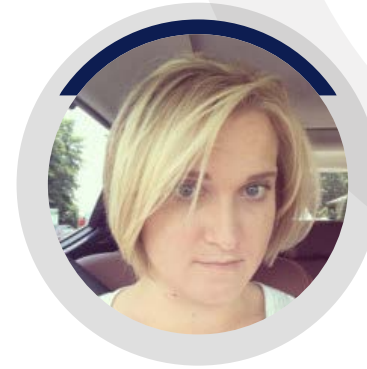
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**RHEX EDWARDS**

**Decommissioning Inspector**

Material Control, ISFSI, and  
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Division of Nuclear  
Materials Safety in Region III

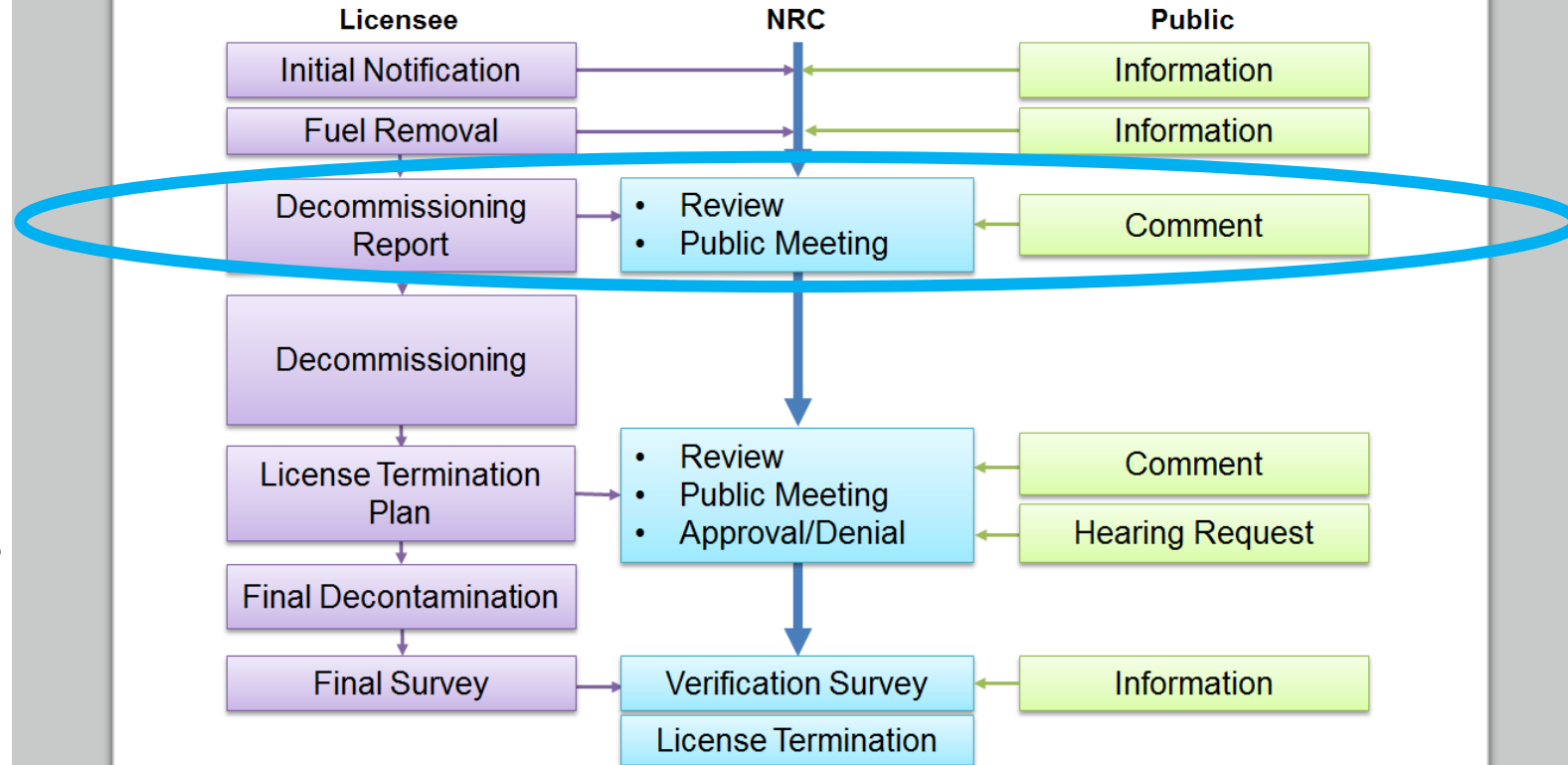
Email: [Rhex.Edwards@nrc.gov](mailto:Rhex.Edwards@nrc.gov)

Phone: 630-829-9722

# DECOMMISSIONING PROGRAM

- Comprehensive regulations include:
  - radiological cleanup criteria
  - public involvement opportunities
  - financial assurance requirements
- Effective decommissioning guidance
- Appropriate levels of oversight throughout decommissioning
- Extensive NRC experience in decommissioning radiological sites

## Reactor Decommissioning Process





# PALISADES DECOMMISSIONING STATUS

- Palisades shut down on May 20, 2022, and submitted the certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel on June 13, 2022
- Review of the PSDAR and several other decommissioning transition licensing actions is underway
- The PSDAR will be used to inform the NRC licensing and oversight activities for Palisades

# PSDAR REQUIREMENTS

The PSDAR must contain:

- Description of planned activities
- High-level schedule considerations
- Site-specific cost estimate for decommissioning
- Projected costs of managing irradiated fuel
- Discussion of potential environmental impacts of decommissioning



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10 CFR 50.82(a)(4)

December 23, 2020

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Palisades Nuclear Plant  
Docket Nos. 50-255 and 72-007  
Renewed Facility Operating License No. DPR-20

Subject: Post Shutdown Decommissioning Activities Report including Site-Specific Decommissioning Cost Estimate for Palisades Nuclear Plant

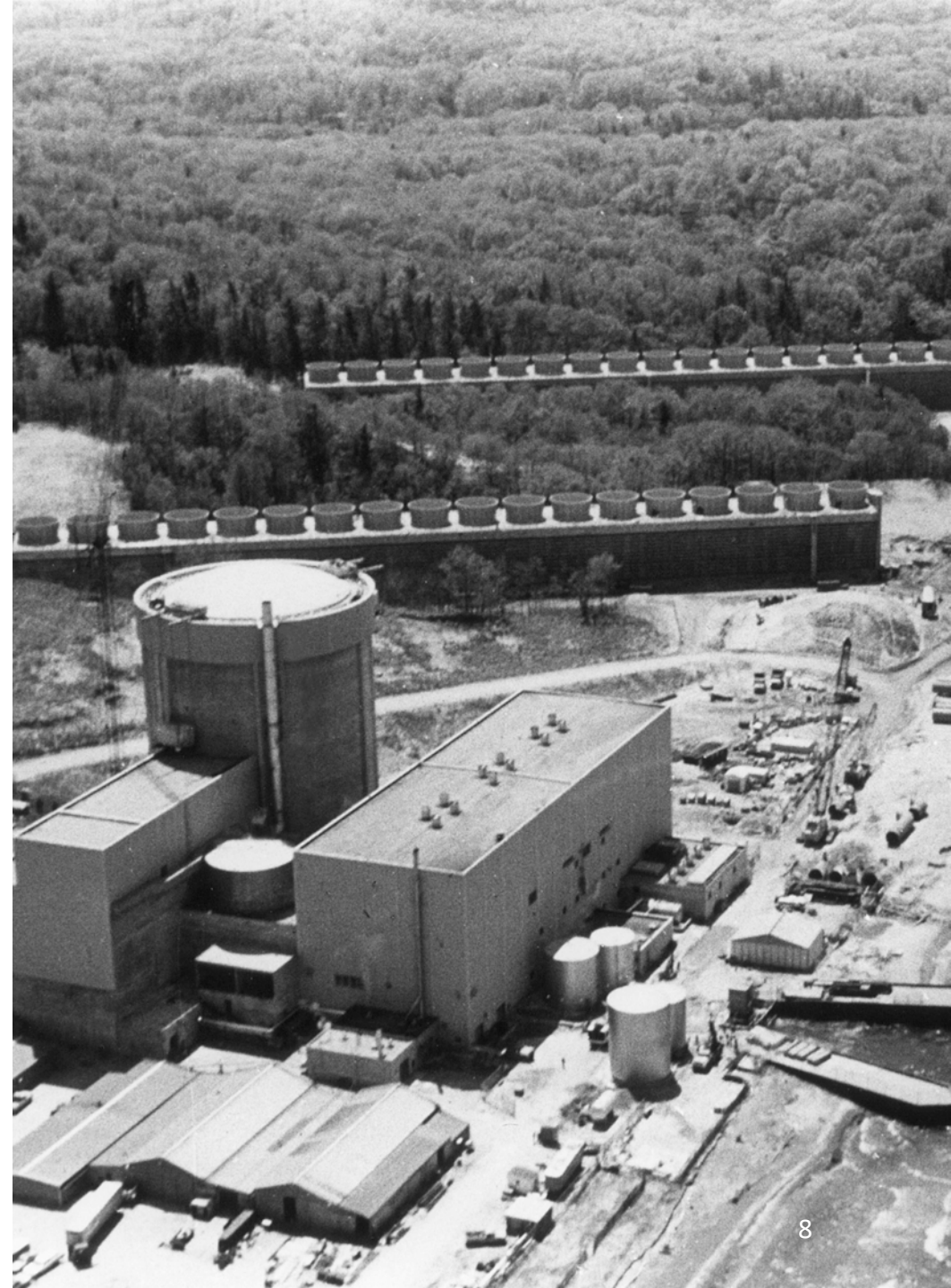
- Reference:
- [1] Letter from ENOI to US NRC, "Certification of Permanent Cessation of Power Operations, Palisades Nuclear Plant, Docket No. 50-255," dated September 28, 2017, (ADAMS Accession No. ML17271A233).
  - [2] Letter from ENOI to US NRC, "Supplement to Certification of Permanent Cessation of Power Operations, Palisades Nuclear Plant, Docket No. 50-255," dated October 19, 2017, (ADAMS Accession No. ML17292A032).
  - [3] Letter from ENOI to US NRC, "Application for Order Consenting to Transfers of Control of Licenses and Approving Conforming License Amendments, Palisades Nuclear Plant Docket Nos. 50-255 and 72-007, and Renewed Facility Operating License No. DPR-20 and Big Rock Point Docket Nos. 50-155 and 72-043, License No. DPR-6," dated December 23, 2020.
  - [4] Letter from Holtec Decommissioning International, LLC to US NRC, "Request for Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv)," dated December 23, 2020.

Pursuant to 10 CFR 50.82(a)(4), Holtec Decommissioning International, LLC (HDI) is submitting a Post Shutdown Decommissioning Activities Report (PSDAR) for the Palisades Nuclear Plant (Palisades). By letters dated September 28, 2017 and October 19, 2017, Entergy Nuclear Operations, Inc. (ENOI) notified the Nuclear Regulatory Commission (NRC) that it would permanently cease power operations at Palisades no later than May 31, 2022 (References 1 and 2).

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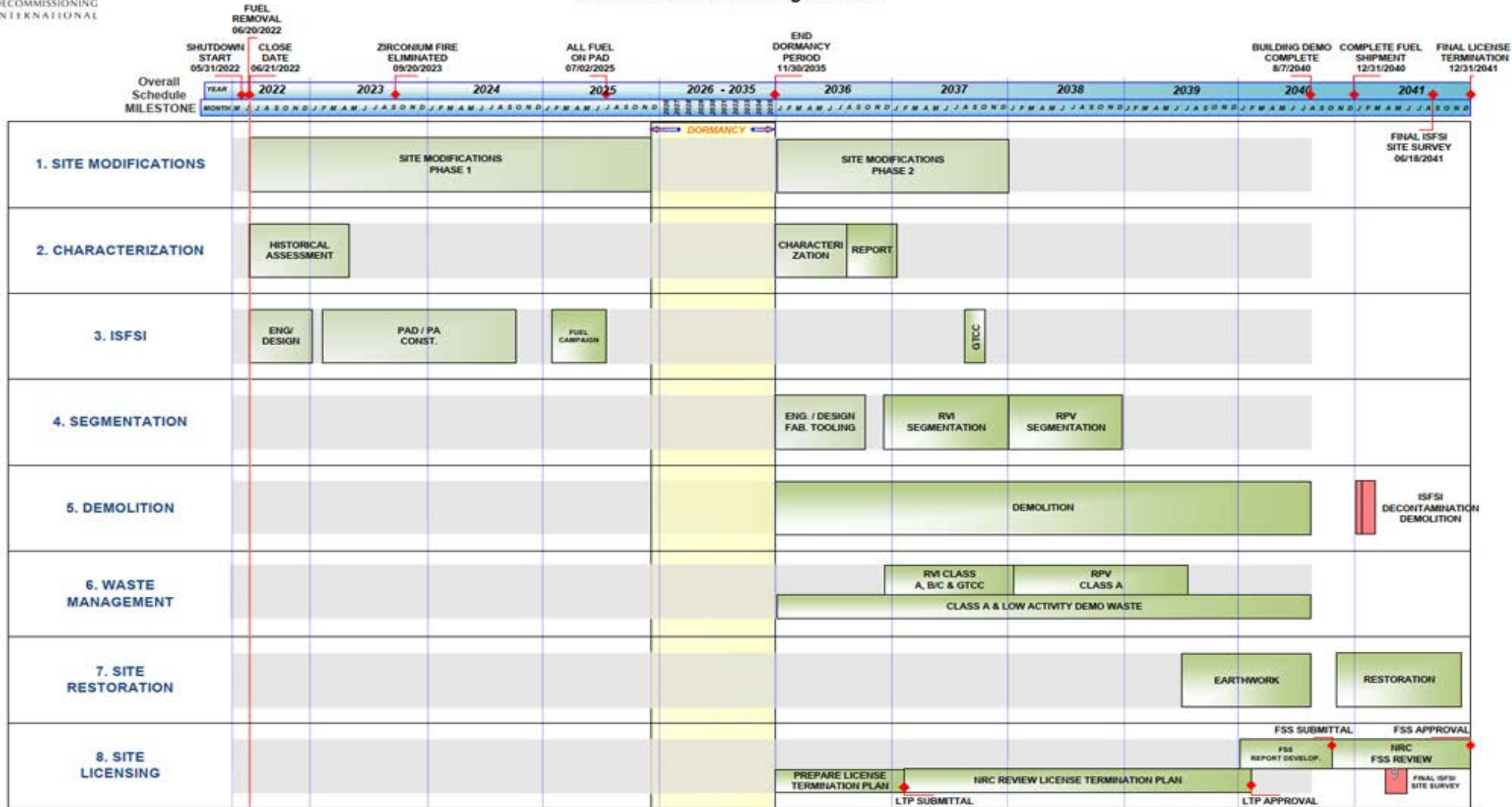
# PALISADES PSDAR CONTENT AND COST ESTIMATE

- HDI is preparing the plant for decommissioning and transfer of spent fuel to dry storage by 2025
- Safe storage (a period of low activity) from 2026 to 2035
- Complete radiological decommissioning by 2041
- The 2022 decommissioning trust fund balance at license transfer to HDI was \$552 million, and estimated cost to complete radiological decommissioning and terminate the Palisades license is \$443 million (in 2020 dollars)
- The PSDAR states that no decommissioning activities will be performed that result in significant environmental impacts not previously reviewed for the site





### Palisades Decommissioning Schedule





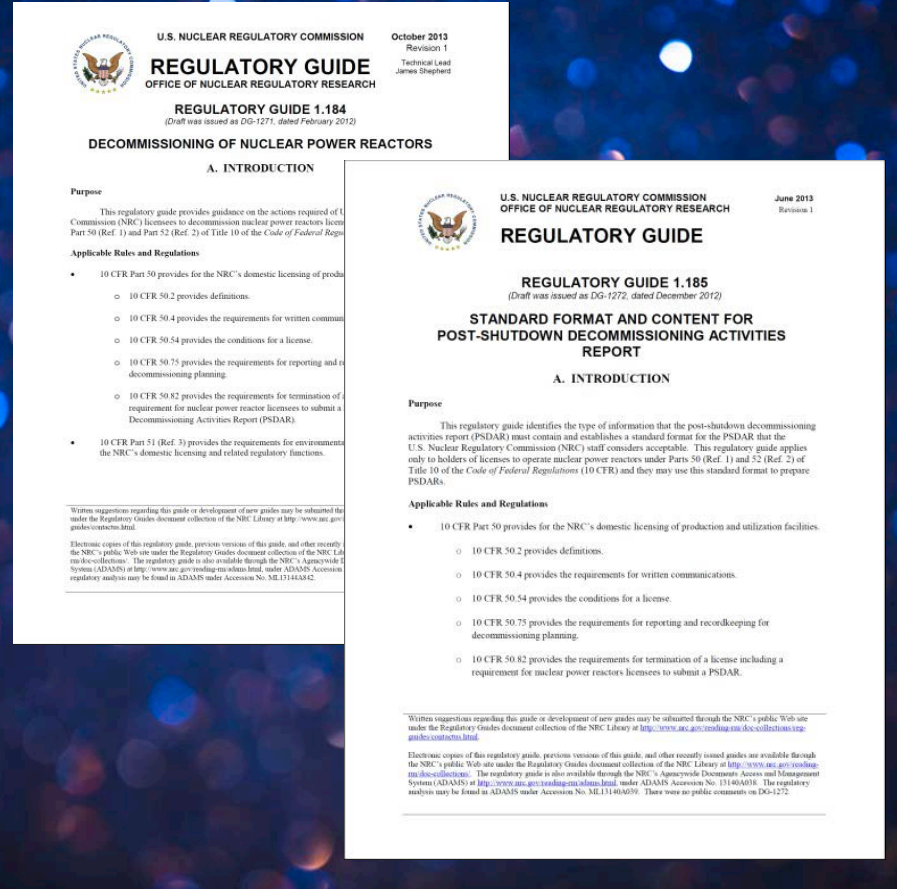
# PSDAR REVIEW PROCESS



## PUBLIC OUTREACH

The NRC notices receipt of the PSDAR in the *Federal Register* and requests public comments

The NRC also schedules a public meeting in the vicinity of the plant to discuss the PSDAR and solicit public comments



## TECHNICAL REVIEW

Technical review of the decommissioning strategy and overall schedule

Financial review of the decommissioning and spent fuel management funding

Environmental review for decommissioning the site



# PSDAR PUBLIC COMMENT METHODS

- During this meeting, which is being transcribed
- By mail: Office of Administration  
Mail Stop: TWFN-7-A60M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
ATTN: Program Management,  
Announcements and Editing Staff
- Federal Rulemaking website:  
<http://www.regulations.gov>
  - Search for Docket ID NRC-2022-0158
- **Comments due by December 27, 2022**



# THANK YOU!



[OPA.RESOURCE@NRC.GOV](mailto:OPA.RESOURCE@NRC.GOV)



[HTTPS://WWW.NRC.GOV](https://www.nrc.gov)

# MAKING COMMENTS VIA TEAMS CONNECTION

**CALL IN LINE: 301-576-2978**  
**Phone Conference ID: 770 089 805#**

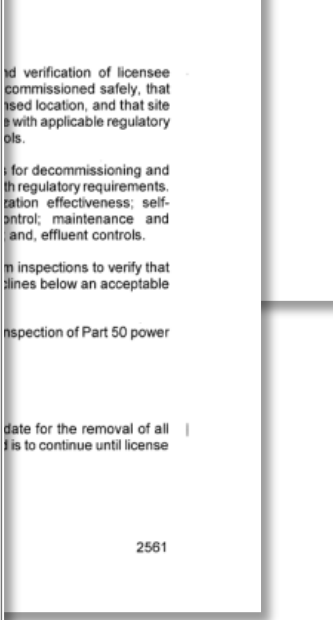
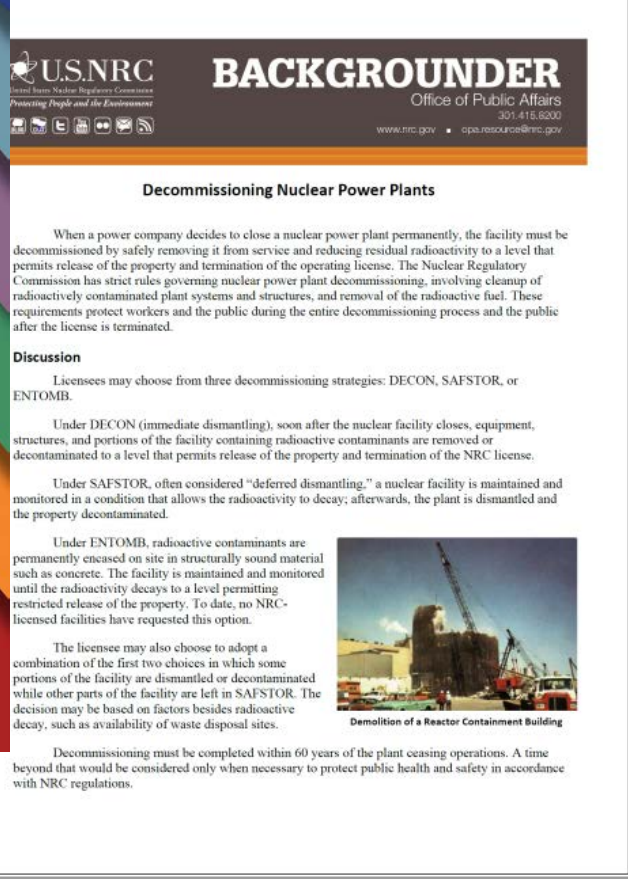
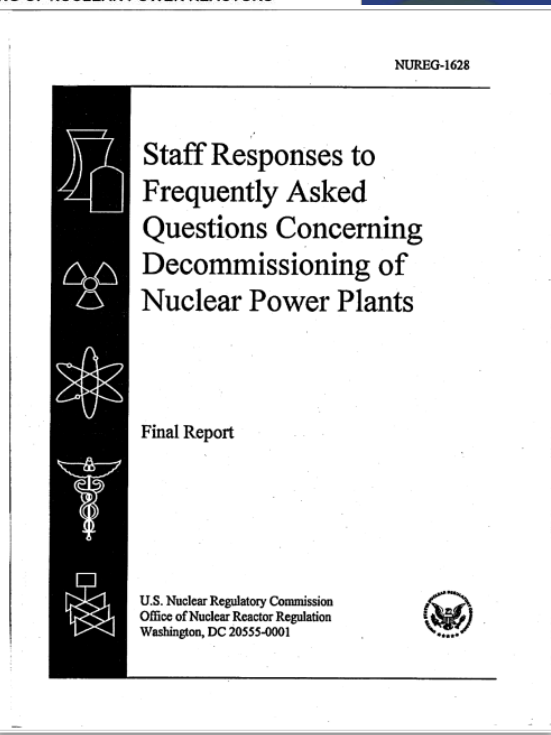
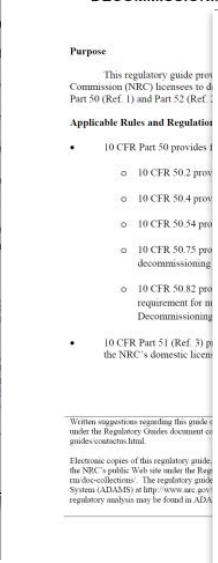
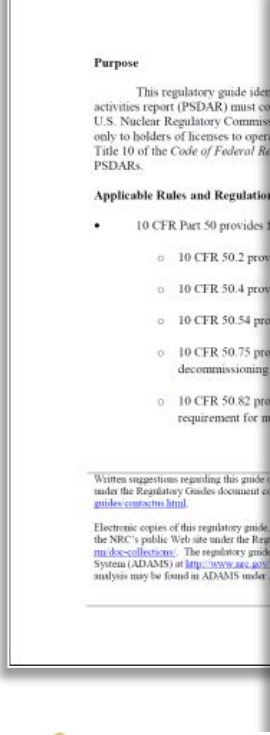
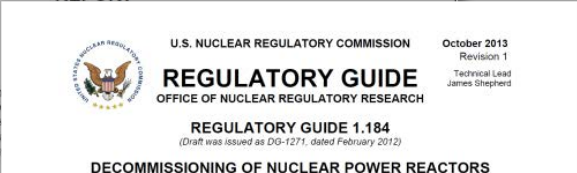
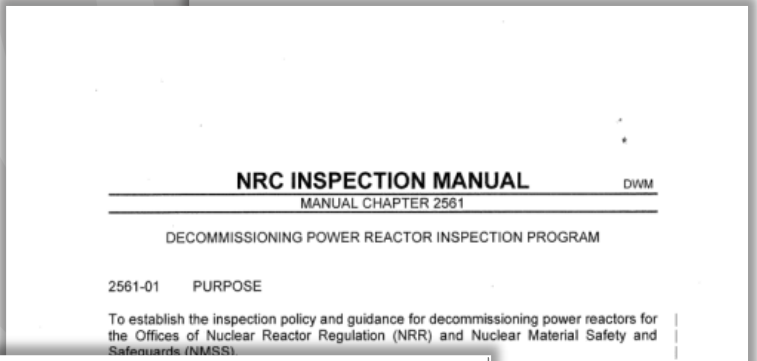
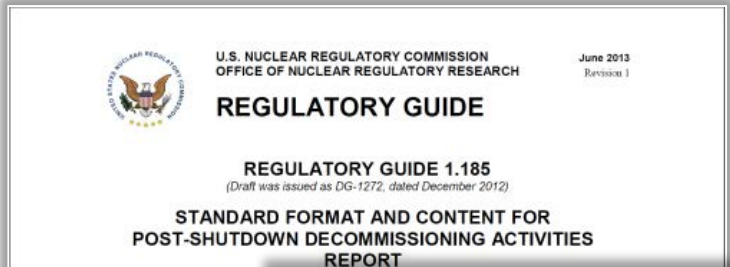
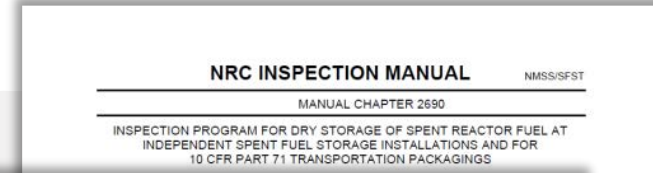
Please consider calling in via audio only if you are having trouble making comments via the MS Teams connection

## • Raise your hand to speak

- If you have joined via your computer, please raise your hand to speak by selecting the “raise hand” icon
- If you have joined via phone, please press **\*5 to raise your hand**
- Once the Teams facilitator sees a raised hand, your name will be called and your microphone enabled
- If you have joined via phone, it will take about 4 seconds - please stand by for the system to instruct you to press **\*6 to unmute your microphone**
- Please introduce yourself and clearly state your name for the transcript
- After you are done with the allotted time for comments your microphone will be disabled

**BACKUP SLIDES**

# NRC DECOMMISSIONING REFERENCES





# LINKS FOR PSDAR AND NRC REFERENCES

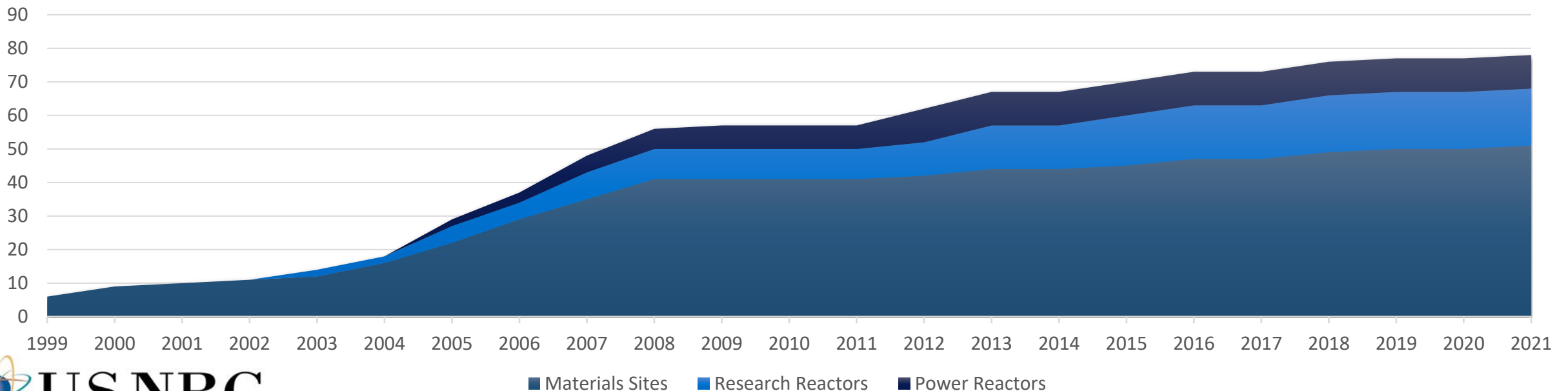


- [Palisades Post-Shutdown Decommissioning Report \(December 2020\)](#)
- [Regulatory Guide 1.184: Decommissioning of Nuclear Power Reactors](#)
- [Regulatory Guide 1.185: Standard Format and Content for the PSDAR](#)
- [IMC 2561: Decommissioning Power Reactor Inspection Program](#)
- [IMC 2600: Fuel Cycle Facility Operational Safety and Safeguards Inspection Program](#)
- [NRC Information Digest for 2021-2022](#)
- [NUREG-1628: NRC Staff Responses to Frequently Asked Questions Concerning Decommissioning of Nuclear Power Reactors](#)
- [NRC Backgrounder: Decommissioning of Nuclear Power Plants](#)
- [NRC YouTube Video on Decommissioning](#)

# DECOMMISSIONING EXPERIENCE

- The NRC's current decommissioning regulations are performance-based and risk-informed
- Extensive decommissioning experience
- A total of eleven power reactor sites have completed decommissioning and had the reactor licenses terminated for unrestricted use outside of the dry fuel storage facility

## Completion of Decommissioning by Facility Type (1998-2021)



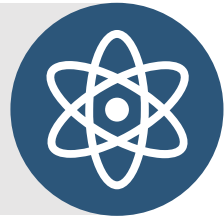
# POWER REACTORS IN DECOMMISSIONING

- 17 reactor units in active decommissioning (DECON)
- 9 reactor units in delayed dismantlement (SAFSTOR)
- 60 years allowed by regulation to complete radiological decommissioning



# REACTOR DECOMMISSIONING PROJECTS IN MICHIGAN

**BIG ROCK POINT**  
(License Terminated in 2006)



**ENRICO FERMI UNIT 1**  
(Permanently Shutdown Since 1972)

# PSDAR QUESTION AND UPDATE PROCESS

- The NRC staff is reviewing the Palisades PSDAR and will request any additional information needed to conclude that the PSDAR contains the required information
- The PSDAR may be updated as part of the initial review process and will become part of the staff's PSDAR acceptance letter
- Subsequent updates to the PSDAR will be publicly available and provided to the State, but do not require additional acceptance

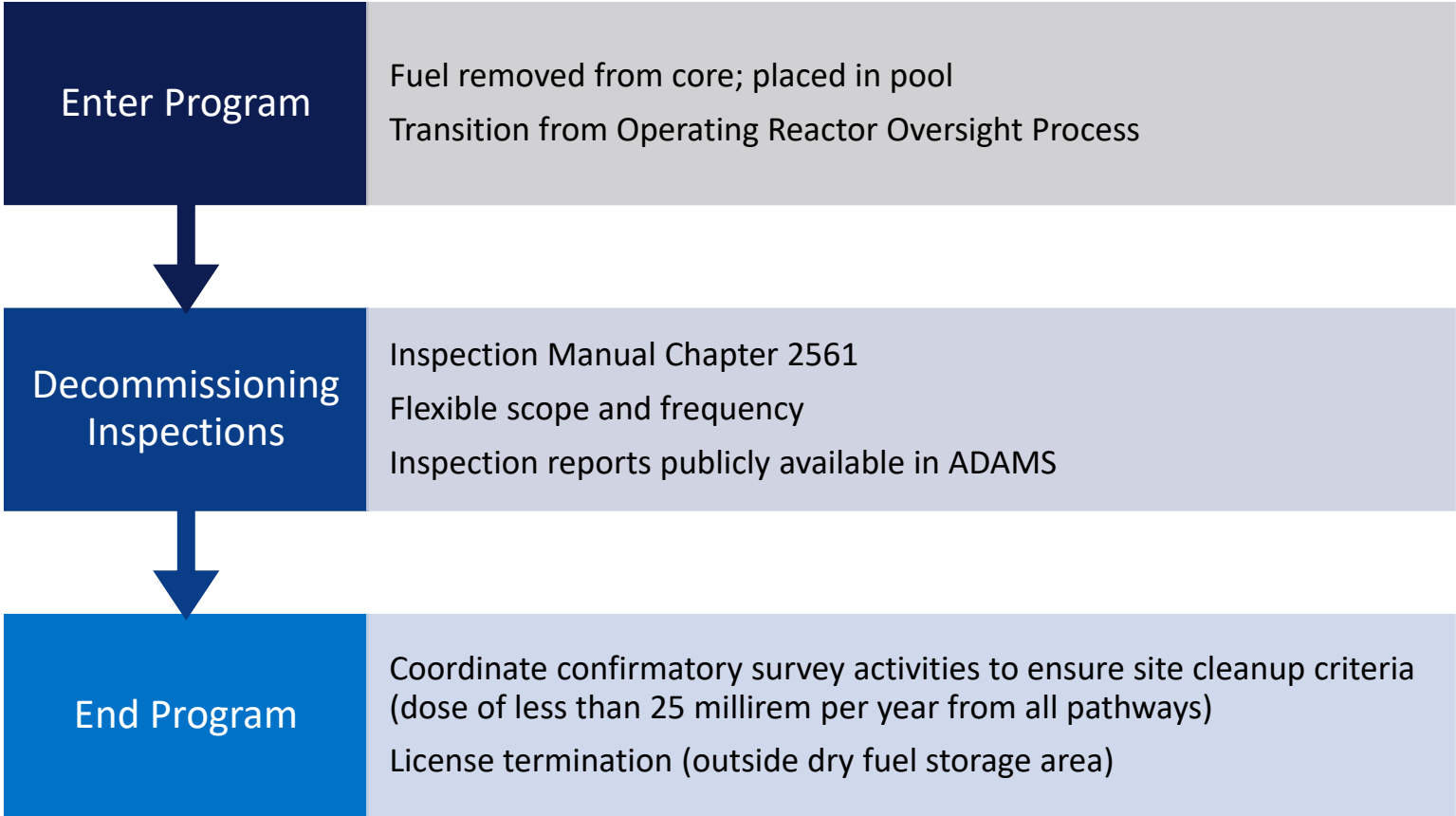


# OBJECTIVES OF THE DECOMMISSIONING INSPECTION PROGRAM

- Oversight and monitoring conducted over the entire period of the decommissioning process
- Objectively verify the safe conduct of decommissioning activities, including dismantlement and decontamination
- Verify adequacy of licensee procedures and controls
- Ensure safety problems and violations are promptly identified and corrected, and effective actions are taken to prevent recurrence
- Examine and address trends in safety performance



# REACTOR DECOMMISSIONING INSPECTIONS



# NRC INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) INSPECTION PROGRAM

- Inspections at the manufacturing facility where the ISFSI components are fabricated
- Inspectors onsite during the construction of the concrete pad that will house the storage casks
- Knowledgeable NRC staff assess the readiness of the licensee to use the system before operation



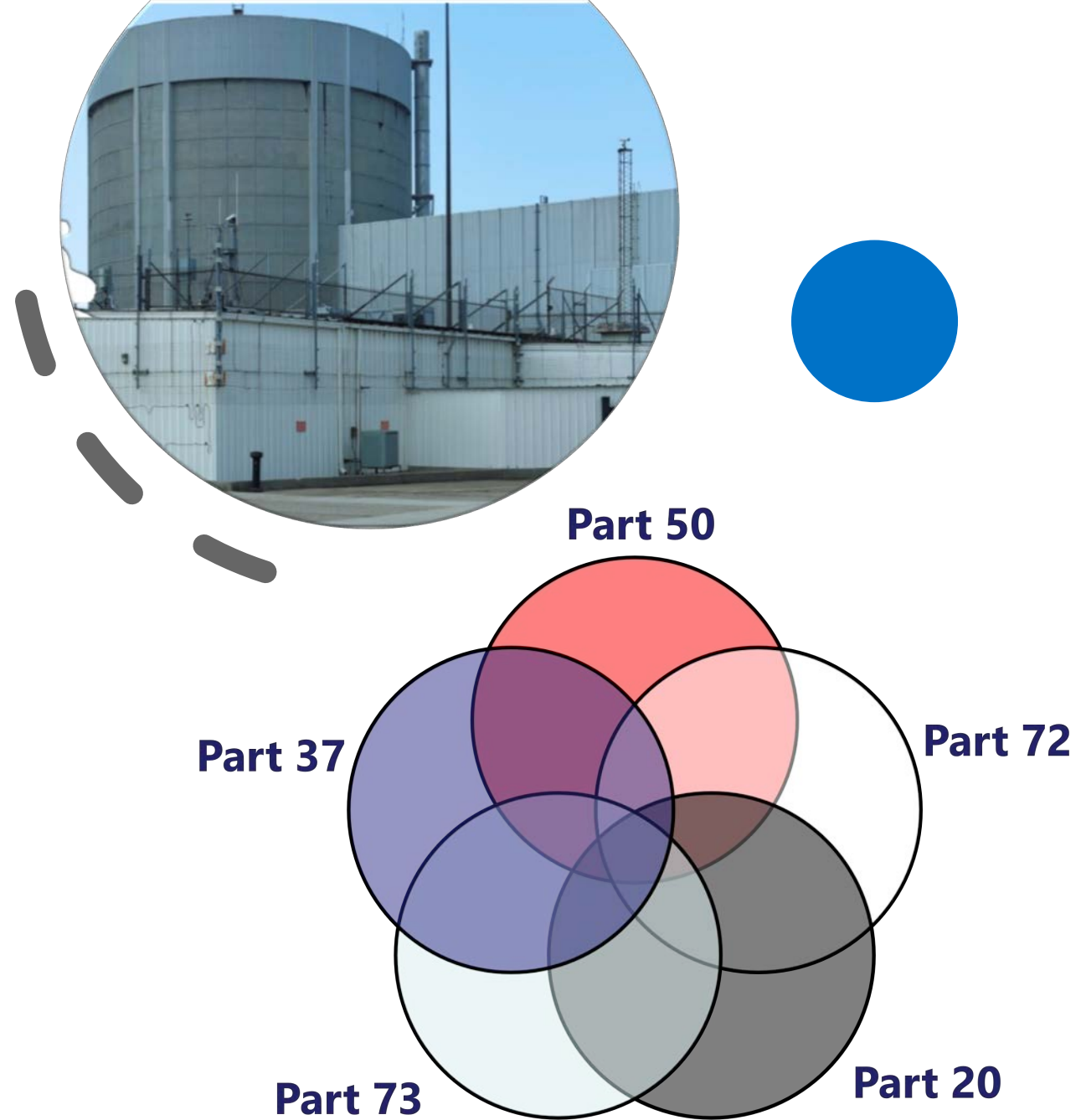


# SPENT FUEL STORAGE FACILITY INSPECTIONS

IMC 2690 – Inspection Program for Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations

NRC inspections performed during:

- onsite fabrication and construction of the ISFSI
- preoperational testing (i.e., dry runs)
- initial fuel loading campaign
- routine ISFSI inspections
- any significant evolutions involving the ISFSI



# HOW DOES EMERGENCY PLANNING CHANGE?

- Emergency preparedness remains
- ‘All hazards’ approach utilized instead of formal pre-planned offsite radiological response plans
- Based on changes in risks and consequences as the power reactor undergoes decommissioning





# HOW DOES FACILITY SECURITY CHANGE?

- Security controls remain in place
- Some key features include:
  - intrusion detection and response
  - assessment of alarms
  - off-site assistance, when necessary
- A security plan is also required for the ISFSI