



# Decommissioning Oversight Board

Holtec Decommissioning International (HDI)



IPEC Decommissioning Update  
December 6, 2023

Frank Spagnuolo, Indian Point Site Vice-  
President

Patrick O'Brien, Holtec Government Affairs and  
Communications Director



# Agenda

- **IPEC work completed since last DOB (September 21, 2023)**
  - **ISFSI / Dry Fuel Project**
  - **Reactor Vessel Segmentation**
  - **Unit 1 demolition**
- **Liquid waste storage discussion**
- **Schedule changes submitted to NRC**
- **License amendments associated with Fuel On Pad Protected status**
- **NRC inspections and activities**
- **Oil in discharge canal 11-29-23**
- **Safety Focus Update**

# Dry Fuel Project

- Independent Spent Fuel Storage Installation (ISFSI) Construction – Complete
- Fuel and Non-Fuel Waste on ISFSI Pad – Complete on October 15, 2023
- Unit 2 Spent Fuel Pool Racks removal - Complete

U1 – 5 casks – 160 Fuel Assemblies  
U2 – 63 casks – 1982 Fuel Assemblies  
U3 – 59 casks – 1856 Fuel Assemblies  
127 Fuel casks total  
2 Greater than class C (GTCC) casks, 1  
from each SFP

Pad will eventually contain an  
additional 13 GTCC casks from U1,  
U2, U3 Reactor Vessel segmentation  
in the future



# Vessel Segmentation

## **Since the last Oversight Board Meeting:**

- **Unit 2**
  - **Gantry saw, Aux bridge, and Knuckle boom cranes assembly complete**
  - **Reactor Head segmentation area setup**
  - **Team set up for Upper Internal segmentation**

## **Projected Activities through next IPEC Decommissioning Board Meeting (February 29):**

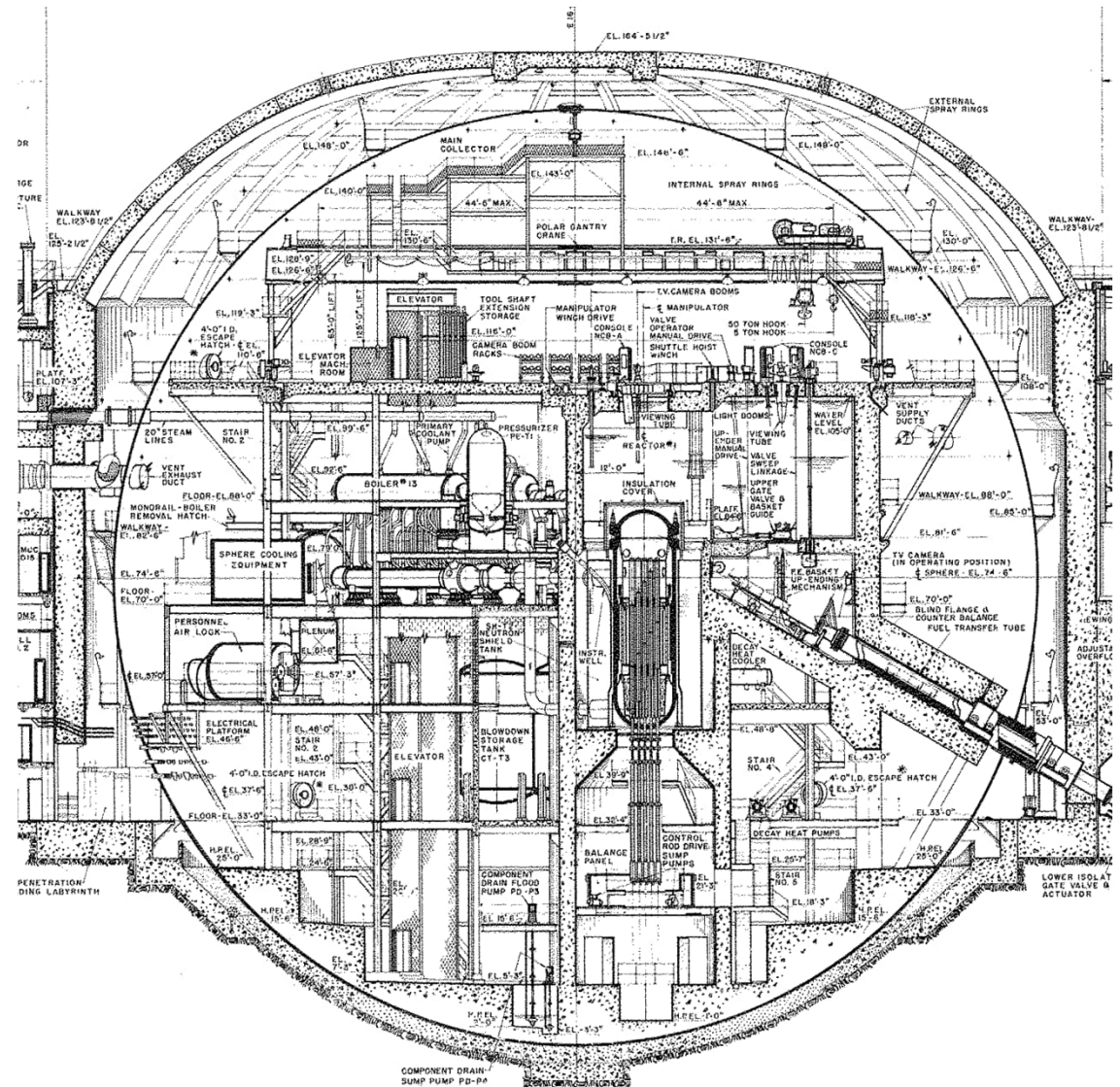
- **Unit 2**
  - **Complete head removal and cavity flood up**
  - **Complete control rod drive shaft removal**
  - **Upper Internal segmentation will be in progress**
  - **Head segmentation will be in progress**
- **Unit 3**
  - **Validate core barrel removal to the lower cavity support stand and return to the core**



# Unit 1 Demolition

5-Year subcontract to remove all equipment (except the reactor) from inside the U1 Sphere

- Nuclear Boilers (SG)
- Reactor Coolant Pumps
- Loop Isolation valves
- All system tanks, valves pumps, conduits, etc..
- Unit 1 Reactor Characterization in progress to determine the most efficient removal process





# Unit 1 Demolition

## Projected Activities through next IPEC Decommissioning Board Meeting (February 29):

- Cut, package and ship remaining RCS loops
- Upgrade Polar crane to support remaining demo
- Demo internal ventilation system
- Wrap Pressurizer for removal preparation



# Liquid Waste Discharge Discussion Update



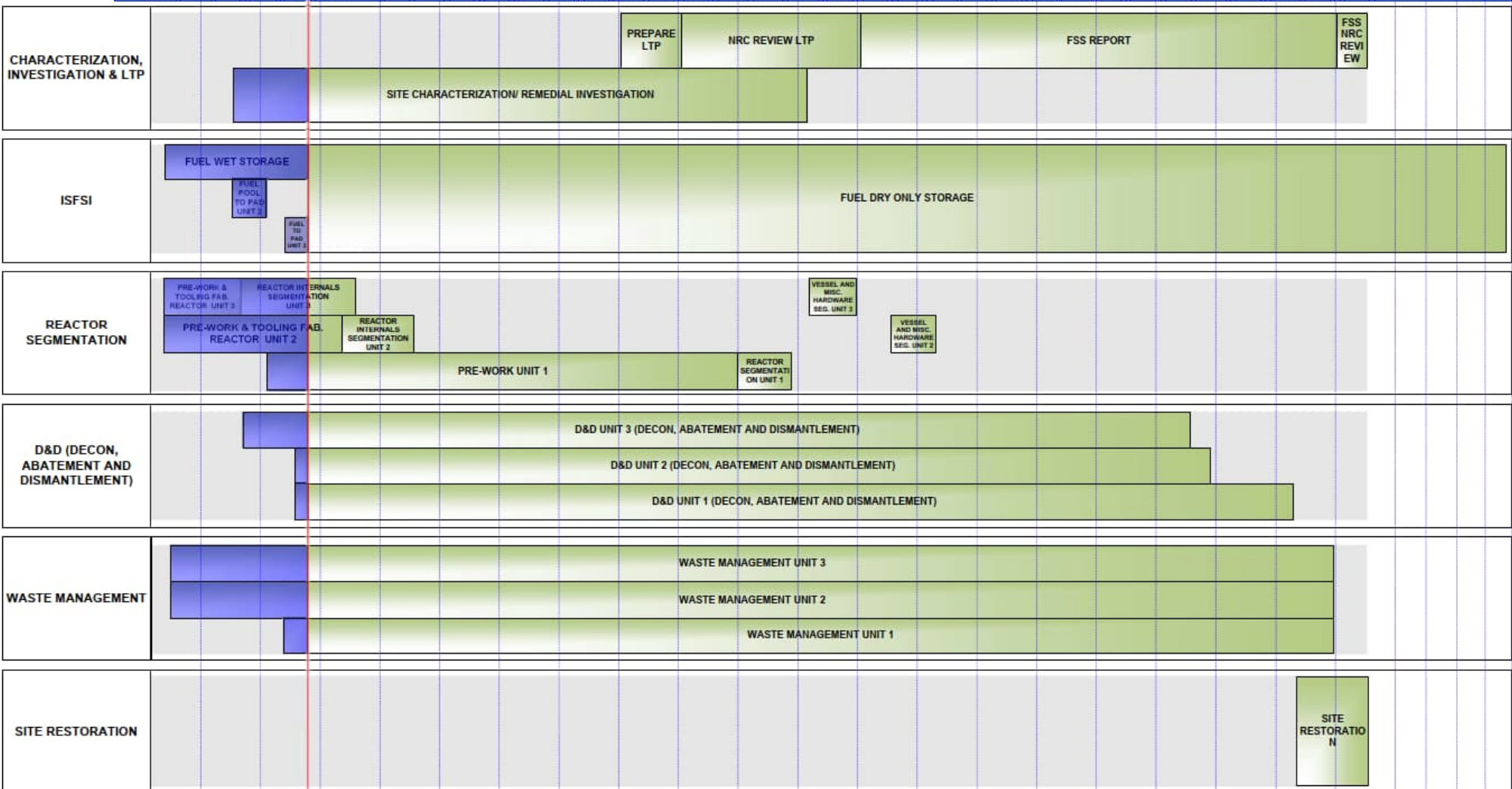
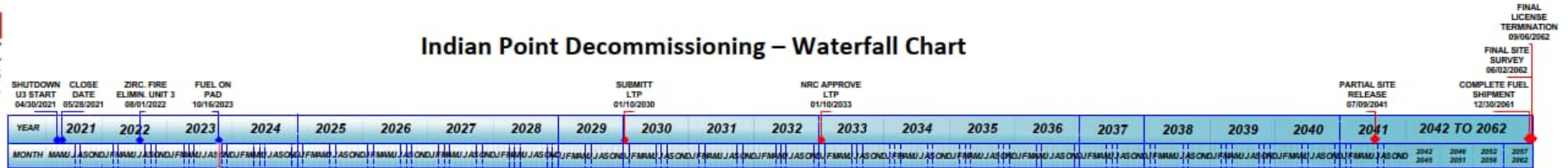
- Teleconference was held on 11/10 with Veolia to discuss potential Tritium removal using Modular Detritation System
  - Technology not currently in use at any sites or commercial application
  - Processing system limits to 40 gallons per hour with large energy need for operation
  - Minimum one year to design, procure and build system, could not provide cost
  - Based on limits and sample requirements would lead to at least a decade to process water
- Reviewed Phytoremediation process (Plummer Management Services)
  - Approach that utilizes the natural abilities of plants to absorb and store contaminants
  - Plant hemp in a hydroponic system within the greenhouse. The hydroponic system delivers liquid wastewater and nutrients directly to the plant roots, promoting healthy growth
  - Subject the harvested hemp biomass to pyrolysis, a thermal decomposition process in the absence of oxygen, inside the greenhouse or in a dedicated facility to break down the biomass into various products, including biochar, bio-oil, and syngas
  - Not viable based on state and NRC regulations
- Holtec continues to review available options for the disposal of radioactive effluents



# Schedule Change Submitted to NRC



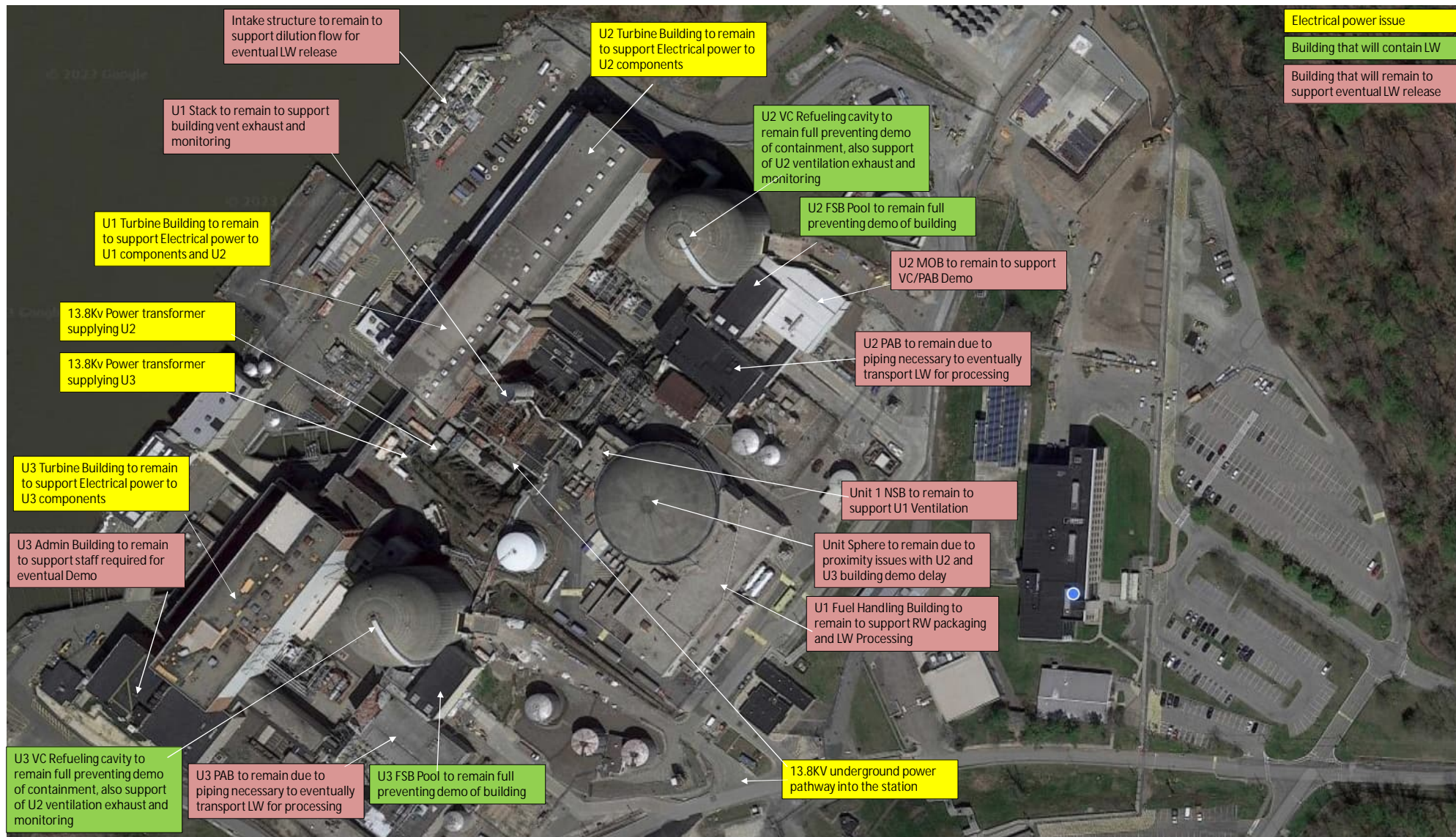
Indian Point Decommissioning – Waterfall Chart





# Schedule Change Submitted to NRC

- 8-Year delay proposed due to the inability to discharge liquid waste using installed systems and valid permit. This will prevent demolition of most of the buildings and systems onsite due to system/building interconnections:
  - Refueling water storage tanks (RWST), Reactor Cavities, and Spent Fuel Pools for both units will remain full
  - Reactor Vessel segmentation will be delayed for Unit 2 & 3 since it is part of the reactor cavity, welded at the Reactor Vessel flange to the cavity liner
  - Support building will be necessary to eventually transfer liquid from each unit to a processing facility
  - Electrical supply is underground from Buchanan to U1, U2, U3 through each of the three Turbine Buildings



# License Amendments Associated with Fuel on Pad Protected



NRC Submittals	IPEC Submittal Date	NRC Issuance Date	Comments
Exemption and LAR for Permanently Defueled Emergency Plan	12/2021	11/13/23	PDEP – Changes EP requirements to not need offsite EP and reduce needed onsite EP, due to the expiration of the Zirc fire criteria. Since this is so late, we will not implement this LAR and use the ISFSI only LAR to change EP protocol
Exemption from onsite and offsite Liability and Property Damage Insurance requirements	03/2022	11/14/23	10 CFR 50.54(w)(1) is to require sufficient property damage insurance to ensure adequate funding of onsite post accident recovery following an accident at an operating nuclear plant. The exemption allows reduction in insurance coverage to a level commensurate with permanent shutdown and defueled status.
LAR for removal of Cyber Security Requirements	05/2022	11/17/23	Removal of the cybersecurity license condition. With all IPEC spent fuel now stored within an ISFSI, the cybersecurity requirements of 10 CFR 73.54 are no longer applicable because fuel cannot be damaged due to any cyberattack.
LAR for U2 Admin TS change (remove staffing for ISFSI only condition)	08/2022	11/16/23	Allowed the reduction of staffing required for IP2 CCR with all fuel removed and placed on ISFSI pad. This also ensures that fuel can no longer be stored in U2 spent fuel pool.
IP1/IP2/IP3 ISFSI only licensing submittals	11/2022	11/29/23	New EP for ISFSI only condition
- ISFSI Only Eplan	11/2022	12/1/23	New Tech Spec for U1, 2, 3 combined based on all fuel on pad
- ISFSI Only Tech Specs	01/2023	12/5/23	New security plan for ISFSI only operations
- ISFSI Only Security Plan			



# NRC Inspection Activities – 3Q2023 Inspection Report



- 3<sup>rd</sup> Quarter NRC Inspection report for the period July 1 – September 30, 2023
  - This inspection included a review of design changes/modifications, problem identification and resolution, decommissioning performance and status, occupational radiation exposure, effluent and environmental monitoring, and radioactive waste management and transportation
  - The inspection also included the Unit 3 dry cask loading campaign
  - Based on the results of this inspection, no violations of more than minor safety significance were identified
- 10/2/2023 – 10/5/23 – ISFSI and DRYF Inspection
  - No violations, no new issues
- 10/16/23 – 10/19/23: NRC Onsite Inspection – Rad Waste (GTCC)
  - No violations, no new issues
- 11/27/23-11/30/23: NRC Onsite Inspection – Year End Close Out Inspection
  - NRC will refer IPEC to OSHA due to the number of safety incidents over the past two years
  - Potential violation due to charitable contributions paid as part of our community outreach program – determined to not be a valid reimbursable expense from the decommissioning trust fund. This issue is still under review at the NRC and HDI corporate finance department

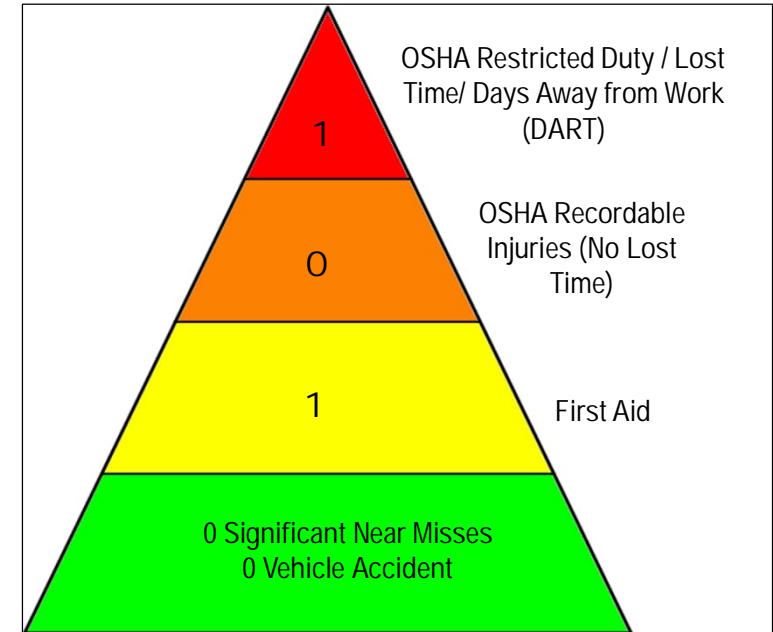
# Oil in Discharge Canal

- Slight oil sheen was observed in the discharge around 1500 on 11/29/23
- Oil was traced back to the **5' U3 Turbine Building sump, non-radiological area**
- Sump pumps were turned to off which eliminated the source of oil to the environment
- Miller Environmental was called in to install booms on the discharge canal, which was completed by 2130
- Oil sheen was not observed in the outfall area nor the river
- Notifications were made to NRC, NYSDEC, DOH, NYSPSC as required - DEC spill number 2307202
- Follow-up actions:
  - Install additional absorbent booms north and south of catwalk– completed 11/30
  - Monitor booms daily for 1- month – note changes in color of boom for replacement
  - Include non-compliance DMR notification form in November DMR monthly report due 12/28
  - Containerize collection of water with sheen in 5' – Champ Env. – scheduled to vac truck and pressure wash
  - Provide update of spill to Josh Cummins
  - Sample – Chemistry sampled location with sheen (DC and MH B-5) for oil/grease confirmation - completed

# Safety items since last meeting

Date	Issue
11/06/2023	<b>OSHA</b> Supplemental worker slipped and fell while climbing into dump truck
11/29/2023	<b>First Aid</b> Supplemental worker strained back loading material on to fork truck

- CPR/AED Training continued in the month of November.
- Former Safety Manager continued Consulting through October
- All employee meeting was held on October 12<sup>th</sup> to discuss making safety personal
- Next all employee meeting in February, then quarterly after that



## Dose IP2:

- Previous Week: 223.6 mR /252.1 mR Goal
- Month: 2.051 R / 2.137 R Goal (NOV.)
- Year: 44.430 R / 66.836 R Goal

## Dose IP3:

- Previous Week: 190.3 mR /232 mR Goal
- Month: 1.693 R /1.975 R Goal (NOV.)
- Year: 138.819 R / 181.898 R Goal

## Personnel Contamination Event (PCE)

2 PCE's year to date: Level 1 <5,000CCPM



# Thank You!



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