KPS & TMI2 Project Status and Learnings

NRC Public Meeting on Decommissioning Lessons Learned
January 15, 2025

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Kewaunee Power Station Decommissioning Project

KEWAUNEE SOLUTIONS

Phase 1 (Start May '23)
- Annex Warehouse
- Vehicle Maintenance Garage
- Decon/Fab Building
- Technical Support Center
- Admin/Training Facility

Phase 2
- Turbine Building
- Transformer Bays
- Administration Building
- Gatehouse
- 9-Stall Garage
- Sewage Treatment Plant

Phase 3 (All Rad)

Phase 3a
- Auxiliary Building
- Fuel Handling Building

Phase 3b
- Containment Building
- IMC Storage/Staging Areas
- Waste Handling Facility
- Containment Waste Structure
- Concrete (including slabs), Asphalt Surface Soils Inside Industrial Area
- Underground SSCs

Phase 4 (All Clean)
- Intake/Discharge Structures
- Warehouse 1
- Site Services Building
- Woodshed
- Office Trailer Complex
- Concrete (including slabs), Asphalt Surface Soils and Misc. Stuff Outside Industrial
- Underground SSCs
- Remediation
- Fill to Level Grade

Phase 1 D&D - Complete

KEWAUNEE SOLUTIONS

August 24, 2021

December 7, 2023

Phase 2 D&D

- Demolition Includes
    1. Turbine Building
    2. Administration Building
    3. Transformer Bays
    4. Gatehouse
    5. 9-Stall Garage
    6. Sewage Treatment Plant

Phases 2 and 3 D&D Preps

- Interferences Removal
- Asbestos Abatement
- Turbine Building URS / Truck Monitor - Status
- Large Component Removal in Containment - Complete
- Waste Handling Structures
  - Waste Handling Facility
  - Containment Waste Structure

KPS Lessons Learned

- “Start with the end in mind”
  - An early vision for the end state drives decommissioning activities and license termination
- Routine interactions with the State of Wisconsin agencies ensures alignment on non-radiological site clean-up
- Detailed decommissioning planning, early development of procedures and infrastructure as well as adequate workspace increases efficiency
- Early site characterization informs waste streams, site clean-up standards and provides important input to License Termination development

Three Mile Island Unit 2 Decommissioning Project

TMI-2 Decommissioning Project Overview

- **Phase 1 – Planning, Engineering, Remediation**
  - Phase 1a – Preparation for Decommissioning
  - **Phase 1b – Fuel Bearing Material Recovery and Source Term Reduction (2023 – 2029)**
- Phase 2 – Typical Decommissioning and Dismantlement, Site Remediation, License Termination
- Phase 3 – Fuel Bearing Material Management

Phase 1b Activities

TMI-2 SOLUTIONS
STEWARDS OF THE ENVIRONMENT

Phase 1b activities include:

- Decommissioning Support Building (DSB) Construction
- Removal, packaging, and storage of remaining Fuel Bearing Material
- Independent Spent Fuel Storage Installation (ISFSI) Construction for interim storage of remaining Fuel Bearing Material
- Dose reduction and decontamination of locked High Radiation Areas
- Packaging and transportation of Radioactive Waste (class A, B/C, and FBM)
- Decontamination of radioactive systems and components

Phase 1b Schedule

- **PSDAR / Schedule**
  - Post-Shutdown Decommissioning Activities Report (PSDAR) requires a schedule for completing major decommissioning activities and project milestones
  - TMI-2 PSDAR Rev. 6, Submitted March 28, 2024: ML24088A012
- **TMI-2 has unique challenges…**
  - Source of remaining radiation at TMI-2 is distributed throughout the Reactor Building (RB) and portions of the Auxiliary and Fuel Handling buildings
  - Some activities may require re-sequencing based on new information acquired from characterization of areas in the RB that were previously inaccessible
- **TMI-2's preparations and planning includes…**
  - Performing mockups of plans/decommissioning activities,
  - Procuring and training on specialized tooling,
  - Continuing characterization efforts to ensure the most up-to-date and comprehensive radiological information is available, and
  - Assessing innovative technologies and chemical decontamination methods

TMI-2 provided answers to NRC Request for Additional Information on the PSDAR Rev. 6 which updated the NRC with current information and plans.

Decommissioning Activities

Reactor Building Air Cooler Demolition

- Remove significant source term near Reactor Building entrance.
- Currently removing internal cooling coils

Spent Fuel Pool Preparation

- Removed items in and around the Spent Fuel Pool A (SFP-A)
- Filling SFP-A to provide a resource for decontamination water and processing

Radioactive Water Treatment

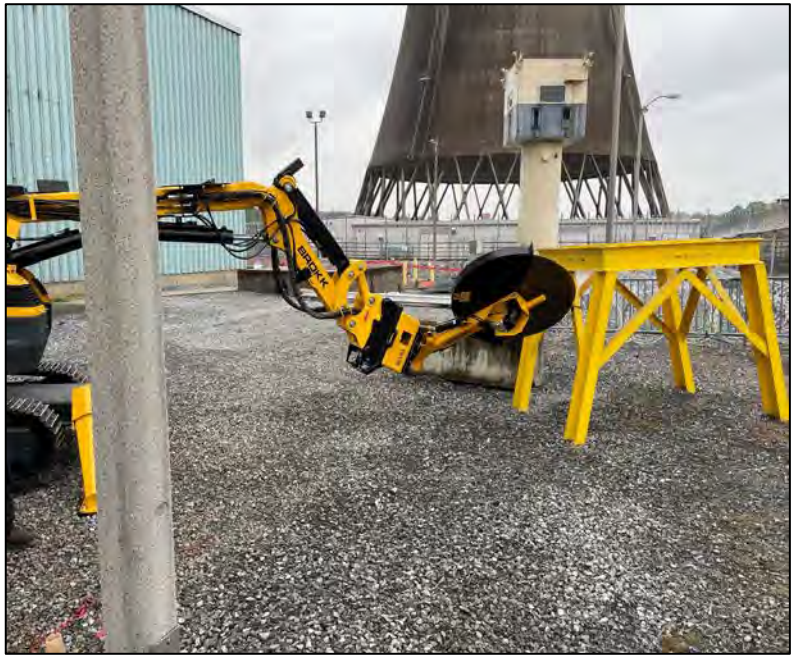
- Setting up water treatment pathways to use SFP-A and filtration unit to support decontamination of materials prior to shipment

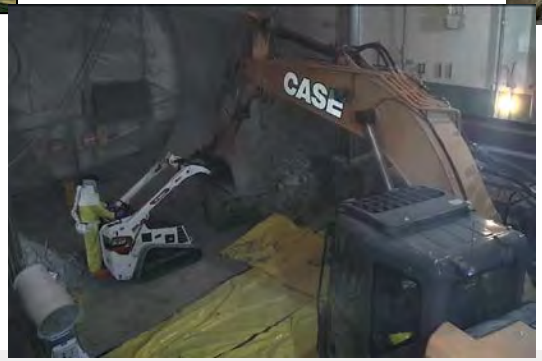
Robotics, Instrumentation, Systems, & Tooling (RIST) Committee

- New Technologies
- Chemical Decontamination proof of concept
- Use of Robotics

Decommissioning Work:
Robotic Equipment and Training

TMI-2 SOLUTIONS
STEWARDS OF THE ENVIRONMENT





TMI-2 SOLUTIONS
STEWARDS OF THE ENVIRONMENT

Decommissioning Work:
Equipment Hatch Enlargement

TMI2 Lessons Learned

- Training is Critical
  - New to nuclear programs can assist new personnel in understanding the unique nature of a nuclear safety culture environment - Nuclear decommissioning involves personnel that have never worked at a nuclear site before
  - Training of personnel to understand the unique differences with TMI-2 from other decommissioning projects – especially with Radiation Protection
  - Training of personnel in remote operation of robotics should include a staged approach → begin with watching the robot in the same area, then re-locate to remote location after proficiency is gained
- Communication is Key