Pilgrim NDCAP Update

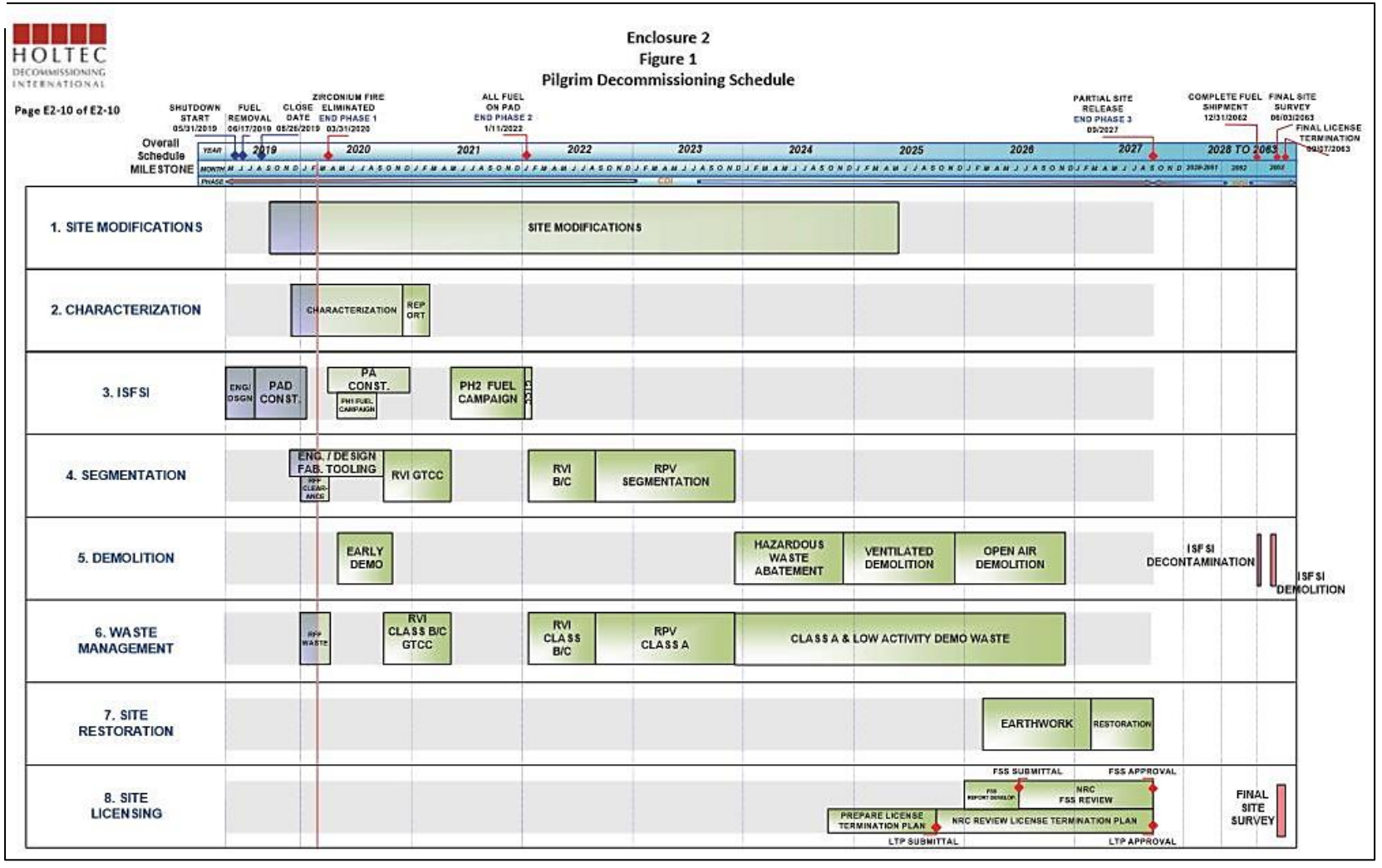
July 20, 2020

HOLTEC DECOMMISSIONING INTERNATIONAL

Comprehensive Decommissioning International

A Holtec and SNC-Lavalin Company

Decommissioning Schedule



For Full Annual Submittal in NRC ADAMS Document System:
Accession Number – ML20091M858

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Fuel Campaign Progress

Fuel Campaign

- 9 of 11 Casks loaded onto the pad (26 total on pad)
- Multi-purpose canister #10 currently being loaded
- Last cask of this fuel campaign will be final next week
- Next Fuel campaign will be in Spring of 2021
- Removal of Control Rod Drive Mechanisms (CRDMs) begins in August 2020
- Reactor segmentation and removal of Greater than Class C Waste to begin in Fall 2020

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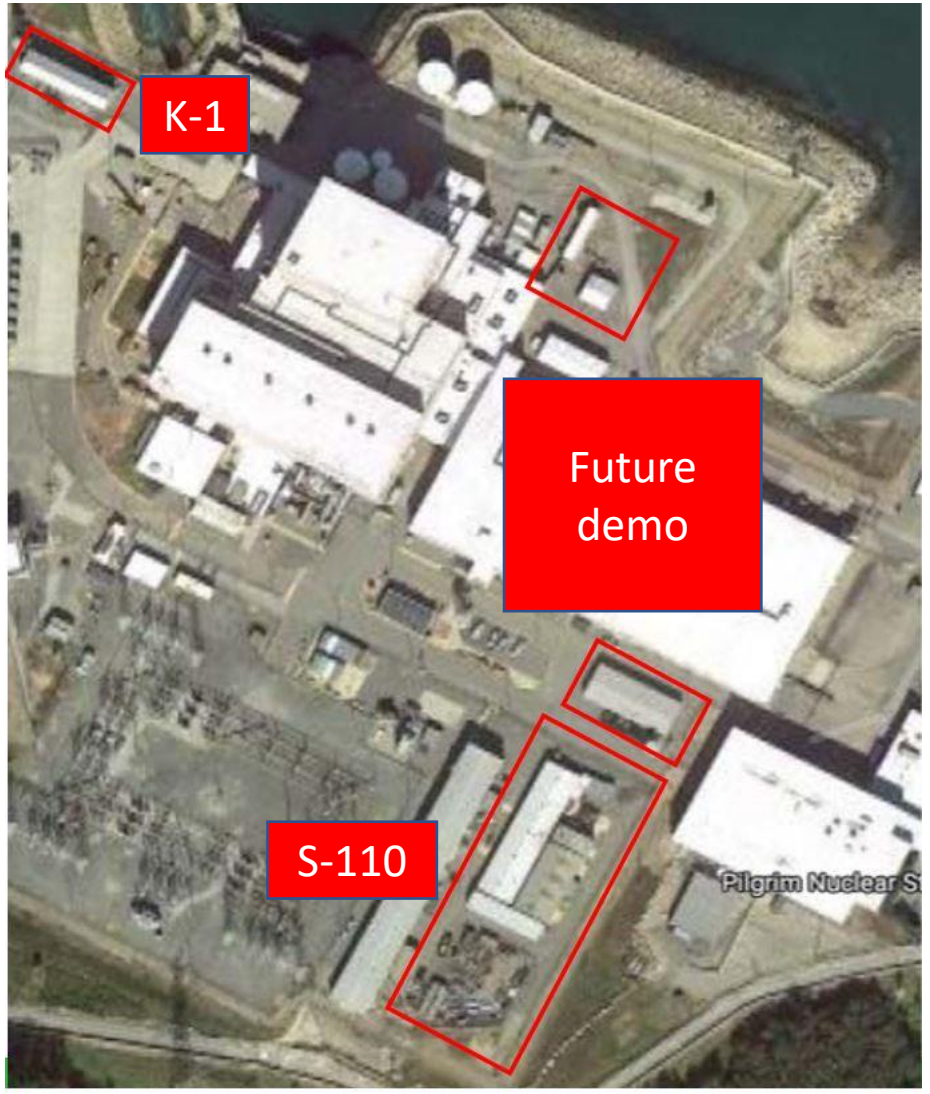
Demolition of Out Buildings

Demolition of Out Buildings

- K-1 Kelly Building near outfall removal underway (7/20). This is to allow for the construction of the haul path.
- S-110 building removal to follow. Currently isolating water, utilities to building. This area will be used for waste storage before shipment at a later date.



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Site Characterization Study

Mark Lawson
Manager, Radiation Protection

Site Characterization Overview

Purpose

- Provide accurate information about the presence and distribution of target contaminants in relation to the background environment, thereby facilitating the necessary remediation to meet all radiological and non-radiological requirements for successful site release from its previous utilization
- Provides information that is required for conducting and verifying risk assessments
- Identify the nature and extent of contamination
- Identifying the types of contaminants present, the amount and location of contamination, and the phases in which it is occurring (soil, groundwater, etc.)
- Support objectives for Prompt DECON
  - ✓ License Termination Plan (LTP) development and support
  - ✓ Site specific release criteria development
  - ✓ Final Status Survey (FSS) program development and implementation

Site Characterization Overview

Big Picture Regulations and Guidance

- 10 CFR 50.82(a)(9) (NRC regulation requiring License Termination Plan)
- Regulatory Guide 1.179 (Standard Format and Content for License Termination Plans for Nuclear Power Reactors
- NUREG-1700 (Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans
- NUREG 1575 MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual)
- Massachusetts Contingency Plan (MCP) 310 CMR 40.0000
- Massachusetts Department of Environmental Protection (MADEP) requirements
- US EPA Toxic Substance Controls Act (TSCA) 40 CFR 761
- Resource Conservation and Recovery Act (RCRA)

Site Characterization Overview

Objectives

- Understand impacted boundaries and levels (radiological and non-radiological)
- Establish boundaries between MARSSIM Class 1, 2, and 3 areas
- Develop area zones strategies for rubble pile management
- Further verifying what types and levels of isotopes
- Determine extent of soil remediation
- Closure of identified data gaps
- Provide further inputs for site restoration and final status survey decisions
- Provide data as input to waste decisions
- Establish FSS structure

Site Characterization Overview

Initial Site Characterization Consists of 4 general tasks

- Historical Information Review – Identify gaps to known information and challenge the proposed classifications
- Site Characterization Plan (DCGL Development)
- Site Characterization Plan Implementation
- Final Status Survey (FSS) Plan

Site Characterization Overview

Task: Historical Information Review – 04.03.2020

- Historical Site Assessment (December 2018)
- 50.75(g) events (life of plant)
- Groundwater well data (2010 to present; 23 site wells)
- Radiological surveys (life of plant)
- Site walkdown (July)
- Previous site investigations (varies)
- Previous site remediations (varies)
- Waste stream data (life of plant)

Site Characterization Overview

Task: Historical Information Review Results

HSA Breakdown

- 144 areas of interest on site
  - ✓ 41 building structures
  - ✓ 7 chemical/drum storage areas
  - ✓ 15 exterior areas
  - ✓ 31 oil-filled mechanical equipment
  - ✓ 6 site-wide impacts
  - ✓ 28 storage tanks
  - ✓ 13 transformers
  - ✓ 3 water wells

Site Characterization Overview

Task: Historical Information Review Results

- Additional information for basis of classifying some structures as non-impacted per NUREG-1575 requirements
- Generate site map depicting proposed classification boundaries
- Establish Class 1 and 2 area boundaries
- Clarify impact of some Radionuclides of Concern (ROC) for specific impacted areas
- Expand on MCP requirements
- Clarify “hazardous” vs. “regulated”
- More information needed for some floor drains, parking areas and loading areas
- 47 specific areas to obtain further data

Site Characterization Overview

Task: Site Characterization Plan (SCP)

- Radionuclides of Concern (ROC) Technical Basis Document (TBD) – 4.10.2020
- Derived Concentration Guideline (DCGL) Development – 4.13.2020
- Dose Models of Soil and Surface Probabilistic Analysis – 07.02.2020
- Draft DCGL Report (input to LTP Ch. 6) – 07.24.2020
- DCGL Rev. 0 Complete – 07.31.2020
- Incorporate Non-rad input to SCP – 08.07.2020
- Draft SCP – 08.12.2020
- SCP Rev. 0 – 08.27.2020

Site Characterization Overview

Task: Site Characterization Plan (SCP) Development

- 50 initial isotopes of consideration
  - ✓ 37 (NUREG/CR 3474)
  - ✓ 17 (10 CFR 61)
- 18 chosen for input to computer dose modeling (NUREG-1757)
  - ✓ Activity concentration <0.1% of total activity
  - ✓ No means of production other than neutron activation
  - ✓ Not identified in PNPS waste stream
  - ✓ Combined dose contribution of deselected isotopes <10% of dose from all radionuclides
  - ✓ Isotopes experience 10 or more half-lives in an 8-year period

Site Characterization Overview

Task: Site Characterization Plan (SCP) Development

- Technical Basis (Radiological)
  - ✓ NRC Regulations 10CFR20 Subpart E – 25 mrem/year
  - ✓ Massachusetts Radiological Standard - <10 mrem/year

Site Characterization Overview

Task: Site Characterization Plan (SCP) Execution

- 6 Area Zones
  - ✓ Areas 1 & 2 – Specific Survey Plan review by 08.14.2020
  - ✓ Areas 3 & 4 – Specific Survey Plan review by 08.24.2020
  - ✓ Areas 5 & 6 – Specific Survey Plan review by 09.01.2020
- Mobilize equipment – 08.03.2020
- Field Execution 08.25.2020 – 12.28.2020
- Site Characterization Report 03.03.2021

Site Characterization Overview

Task: Final Status Survey (FSS) Plan

- Plan Development – 01.25.2021
- Procedure Development – 03.23.2021
- Plan and Procedures Rev. 0 – 05.06.2021