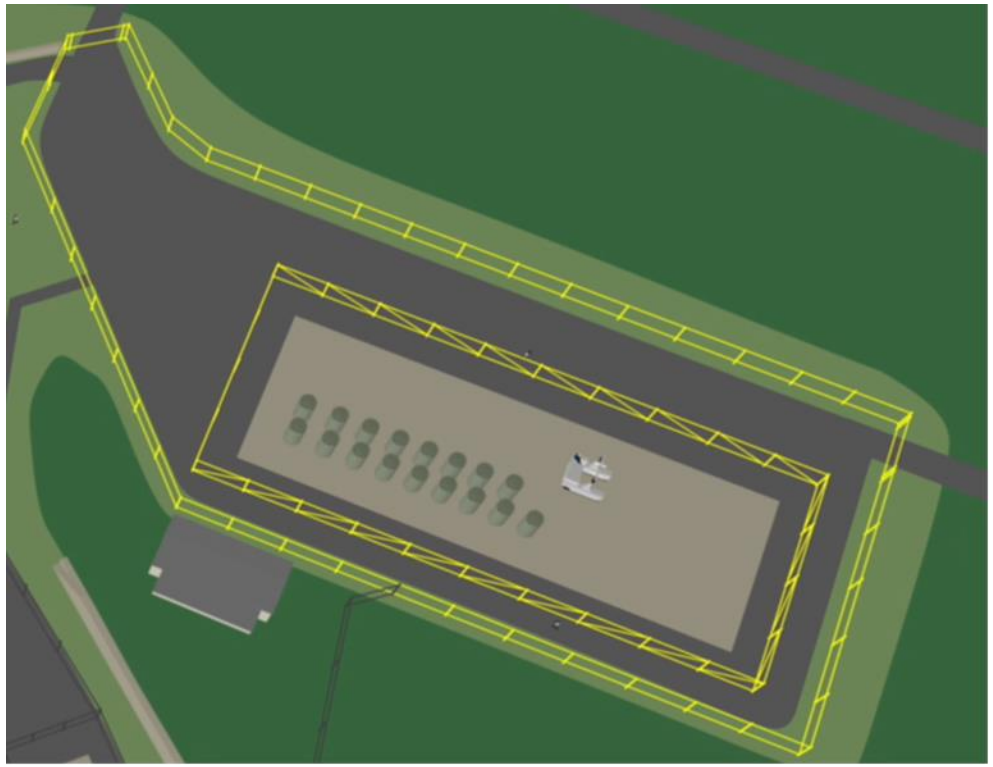

Pilgrim Characterization and ESA Work Plan Update

November 16, 2020

HOLTEC DECOMMISSIONING INTERNATIONAL

Comprehensive Decommissioning International

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ERM

ERM Representatives

John Drobinski, Partner (31 years)
BA Degree Chemistry
MS Degree in Geology
MA Licensed Site Professional (2196)
Licensed Professional Geologist since 1979

Relevant Professional Experience:

- Nuclear sites Pilgrim, Yankee-Rowe, Connecticut Yankee, Maine Yankee, Millstone, Nine Mile Point, Perry, Barnwell, Angra Dos Reis, Shpack Superfund Site
- LSP-of-Record for 100s of MA 21E submittals
- Public Service including Sudbury Selectman for 27 years

Matt Daly, Technical Director (21 years)
BS Degree Environmental Science
MS Degree in Geology
Licensed Professional Geologist since 2001

Relevant Professional Experience:

- Nuclear sites Pilgrim, Vermont Yankee, Perry, Davis-Besse, Beaver Valley, Diablo Canyon, Robinson, D.C. Cook, Brunswick, Maguire; Electric Power Research Institute (EPRI) work at Oconee, Comanche Peak, Prairie Island, Watts Bar, Oyster Creek, Callaway, Salem Hope Creek, Hatch, Monticello, Indian Point, Sequoyah, Fermi, Browns Ferry, Fukushima Daiichi, EDF
- Numerous MA 21E experience

Initial Environmental Site Assessment (ESA) Work Plan

1. Submitted 120-days (i.e., 10/14/2020) per the Settlement Agreement

2. Information in document reflects plans developed as of 10/8/2020

3. Site characterization is a dynamic and iterative process, and Pilgrim site characterization is standard site assessment protocols:
   - Develop characterization plans
   - Review and comment by State of MA
   - Resolution of comments
   - Implement plans
   - Refine plans based on findings
   - Prepare report summarizing activities, results and next steps

4. Additional information has been provided to MA to augment Initial ESA Work Plan

5. LSP will oversee site characterization activities

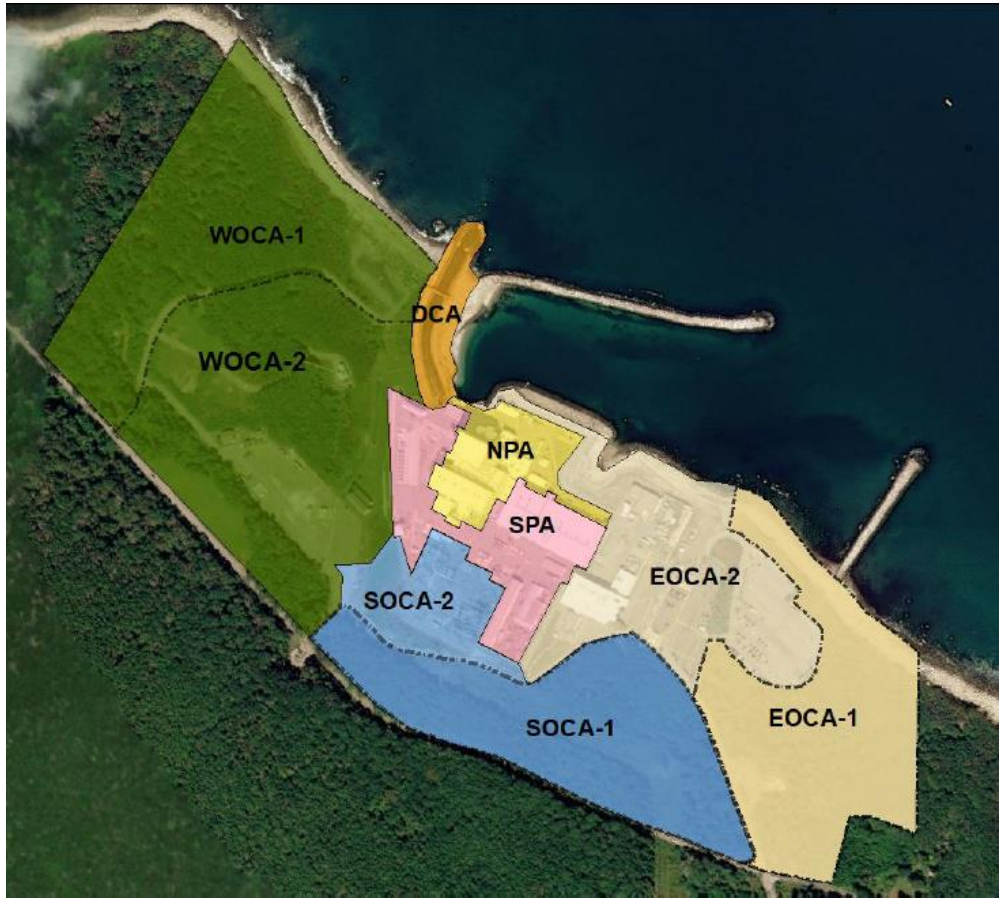
Augmenting Initial ESA with Additional Information

Settlement Agreement Section III 11 Criteria	Criteria	Additional Information in ESA Update
(a)	Site inventory and proposed operable units	Figures showing location of areas of interest within each study/survey area
(b)	Description of proposed assessment activities to address HSA gaps	Details of radiological and non-radiological site characterization and sampling plans, including technical basis, location/depth of samples and analytical techniques. Plans organized by building/structure surveys and open area (land) surveys.
(c)	Proposed schedule for characterization, demolition, on-site management, regrading and reseeding	Gantt chart of site characterization tasks and activities (i.e., planning, site preparation and implementation)
(d)	Proposed schedule for completion of site-wide assessment activities	Gantt chart of site characterization tasks and activities (i.e., planning, site preparation and implementation)
(e)	Proposed list of potential radiological and non-radiological contaminants	ROC and DCGL development documentation (technical basis) for radiological list
(f)	Proposed plan for testing and demonstrating compliance with the radiological cleanup standard (Paragraph III 110(d) including submission of confirmatory radiological surveillance and analytics with the Permanent Solution Statement	Site characterization plans outline MARSSIM and Final Status Survey (FSS) process; combined radiological and non-radiological risk assessment for PSS

Augmenting Initial ESA with Additional Information

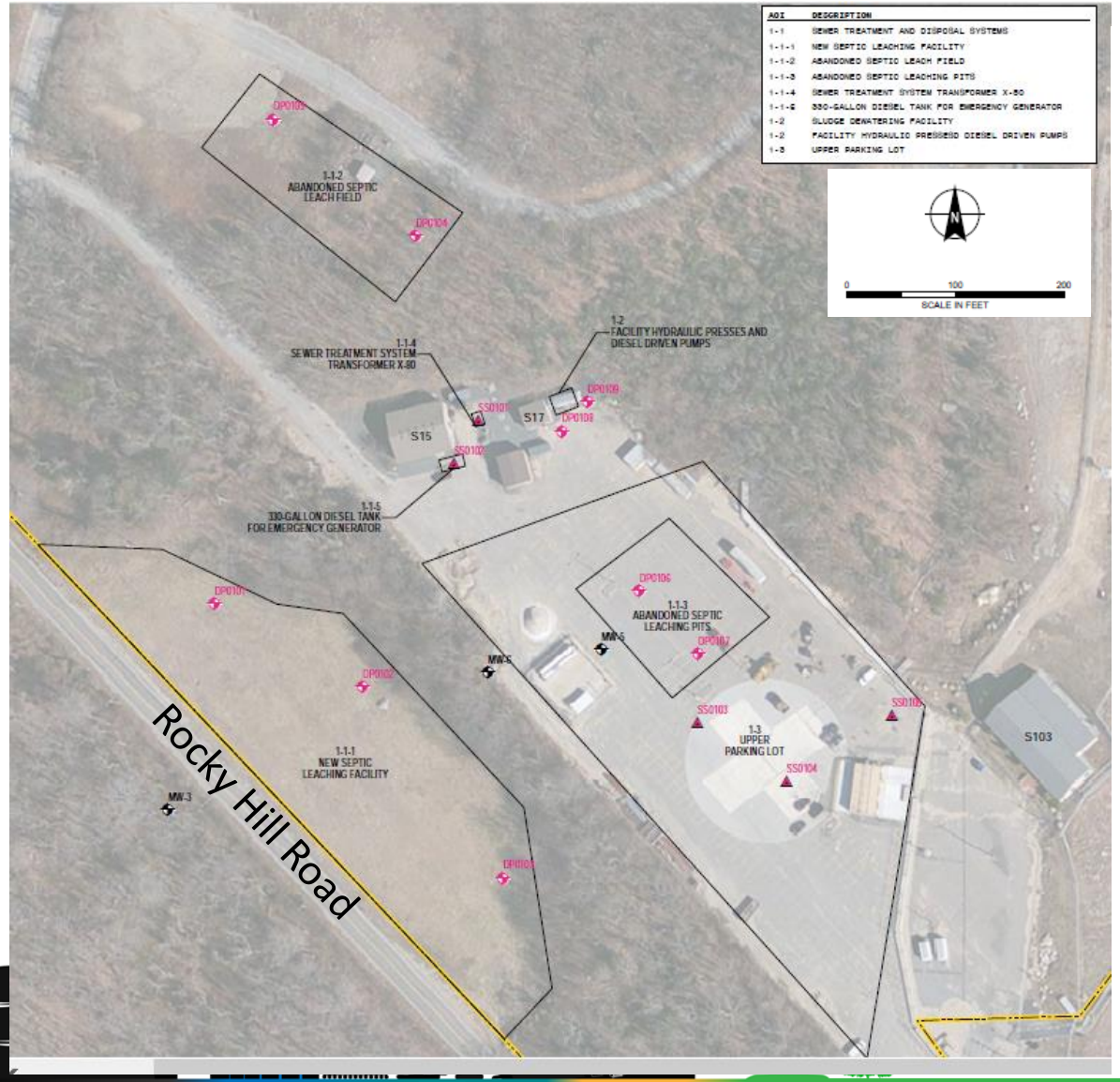
Settlement Agreement Section III 11 Criteria	Criteria	Additional Information in ESA Update
(g)	Proposed plan for initial groundwater sampling of radiological and non-radiological contamination including any additional monitoring wells	Site characterization plans outline sampling existing 23 wells, plus locations of new grab groundwater samples for laboratory analysis (i.e., areas outside of current well coverage)
(h)	Proposed plan for initial soil sampling of radiological and non-radiological contamination	Details of radiological and non-radiological site characterization and sampling plans, including technical basis, location/depth of samples and analytical techniques. Plans organized by building/structure surveys and open area (land) surveys.
(i)	Proposed plan for initial sampling or environmental media other than soil and groundwater	Details of radiological and non-radiological site characterization and sampling plans, including technical basis, location/depth of samples and analytical techniques. Plans organized by building/structure surveys and open area (land) surveys.
(j)	Proposed schedule for submitting a plan that complies with the MCP and Mass Solid Waste regulations for off-site material used as fill	Schedule for providing plan is 2nd quarter 2025
(k)	Proposed schedule for submitting a detailed description of how concrete material will be processed, managed, and removed from the Site	Schedule for detailed description is 1st quarter of 2024 for removal of any contaminated or below grade concrete
(l)	A description of a process to characterize below grade structures	Below grade structure characterization process is described in the Building Sample Plans and are consistent with MARSSIM guidance

Scope of Initial Characterization Sampling Activities



Non-Radiological (Number of Locations/Samples in SCP)	
Soil	72
Sediment	7
Grab Groundwater	47
Buildings/Structures	~300
Radiological (Number of Locations/Samples in SCP)	
Surface Soil	109
Subsurface Soil	6
Sediment	6
Buildings/Structures	1,240

Sample Plan – West Owner Controlled Area (non-radiological example)



LEGEND

EXISTING MONITORING WELL	PROPOSED SAMPLE LOCATION: DIRECT PUSH EXPLORATION AND ASSOCIATED SOIL AND/OR GROUNDWATER SAMPLE
S13 BUILDING NUMBER	SURFICIAL SOIL SAMPLE

Area of Interest	Media	Proposed IDs	Analytics
New Leaching Field	Soil Groundwater (new)	DP0101 DP0102 DP0103	VOCs; SVOCs; EPH/VPH; MCP14 Metals; PFAS
Abandoned Leach Field	Soil Groundwater (new)	DP0104 DP0105	VOCs; SVOCs; EPH/VPH; MCP14 Metals; PFAS
Abandoned Leaching Pits	Soil Groundwater (new)	DP0106 DP0107	VOCs; SVOCs; EPH/VPH; MCP14 Metals; PFAS
Sewer Treatment System Transformer	Soil	SS0101	VOCs; PAHs; EPH/VPH; PCBs; MCP14 Metals
330-gallon diesel tank (AST)	Soil	SS0102	VOCs; PAHs; EPH/VPH; MCP14 Metals
Sludge Dewatering Facility	Soil Groundwater (new)	DP0108 DP0109	VOCs; PAHs; EPH/VPH; MCP14 Metals
Upper Parking Lot	Soil	SS0103 SS0104 SS0105	VOCs; PAHs; EPH/VPH; MCP14 Metals

Sample Plan – South Owner Control Area 1 (MARSSIM radiological example)

Sample Location	Easting	Northing
02-SOCA1-surf-01	907025.9868	2805244.5317
02-SOCA1-surf-02	907266.1131	2805409.8116
02-SOCA1-surf-03	906185.5447	2805533.7716
02-SOCA1-surf-04	907146.0499	2804913.9718
02-SOCA1-surf-05	906665.7973	2805285.8517
02-SOCA1-surf-06	907386.1762	2804969.0651
02-SOCA1-surf-07QC	907397.4321	2805216.9850
02-SOCA1-surf-08	906196.8006	2805588.8649
02-SOCA1-surf-09	907037.2427	2805134.3450
02-SOCA1-surf-10	907517.4953	2804886.4251
02-SOCA1-surf-11	906316.8638	2805258.3050
02-SOCA1-surf-12	906496.9585	2805175.6650
02-SOCA1-surf-13	907217.3374	2805299.6250
02-SOCA1-surf-14	907097.2743	2805305.7465
02-SOCA1-surf-15QC	907577.5269	2805057.8265

15 Locations	Analysis	Method
1m^2 area of surface soil	Gamma scintillation detector (gamma scan)	2”x2” NaI detector with data logger
QC Requirement – 10% of samples from each area		
Surface soil samples	Gamma spectroscopy	On-site mobile laboratory; QA analysis with off-site laboratory
Surface soil samples	Hard-to-Detect Beta emitting radionuclides	Off-site laboratory

Path Forward

1. Working with State to provide additional information in order to fulfill requirements of ESA Work Plan (two meetings since 10/14 submittal; regular meetings going forward)

2. State to review and comment on additional information being provided

3. Site characterization is iterative….opportunity to check and adjust plans as process unfolds and through the regular meetings with the State

4. Site Characterization Report summarizing activities and results

5. Amended ESA Work Plan 31 May 2021

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Questions / Comments