EXHUMATION WORKING GROUP UPDATE

Presented By
Lee Gordon, PhD
NYSERDA

Citizen Task Force
Meeting October 26, 2016

ACTIVE TASKS

• **Study 1** - Task 1.2: Update of Waste Inventories
• **Study 2** - Task 2.2.a: Geophysics Prove-Out Study
  Task 2.4.b: Evaluation of Protective Measures
  Task 2.4.c: Information Review and Development of Soil Investigation Program
• **Study 3** - Task 3.1: Evaluation of Seven Selected Sites
  Task 3.2: Evaluation of Other Pertinent Sites
**Task 1.2: Update of Waste Inventories**

**Purpose:**
- Update waste inventories to account for radiological decay and ingrowth
  - New Base Year of 2020
  - Future Increments: 2050, 2080, 2110, 2140
- Evaluate when removal actions at the SDA, NDA, and WTF could transition from remote to contact-handled actions

**Status:**
- Final report completed and recently approved by DOE and NYSERDA
  - Posted to the website

---

**Task 2.2.a: Geophysics Prove-Out Study**

**Purpose:**
- Test the applicability of five geophysical methods to meet the following full-scale study objectives for the SDA and NDA
  - Identify specific segments within the waste trenches that contain waste monoliths, densely-packed waste materials, or large quantities of metallic waste for comparison against the inventory records.
  - Define the lateral boundaries of trenches and other disposal units
  - Define the bottom of trenches
  - Determine elevation of top of water surface (leachate) in trenches
- Methods include magnetometer survey, electromagnetic (EM) survey, seismic refraction tomography (SRT), multi-channel analysis of surface waves (MASW), and electrical resistivity imaging (ERI)
  - With and without penetrations of the membrane cover
Task 2.2.a: Geophysics Prove-Out Study (cont.)

**Status:**
- All field activities complete
- Report in preparation

- Pilot Study Area is approximately 200’ x 50’
- Selected to cover multiple trenches centered on Trench 4 due to make-up inventoried wastes
- Extends into soil horizon to evaluate differences in signal response.
Task 2.4.b: Evaluation of Protective Measures

**Purpose:**
- Evaluate protective measures required for worker and community protection based on varied waste types in SDA and NDA
  - Evaluate potential exposure scenarios and levels
  - Evaluate level of protection needed
  - Evaluate exhumation equipment requirements
  - Compare to protective measures and exhumation equipment applied at other DOE sites (based on Study 3 findings)

**Status:**
- Draft report undergoing internal ECS review

---

Task 3.1: Evaluation of Seven Selected Sites

**Purpose:**
- Determine state-of-practice in exhumation and treatment technologies; methods for worker, public, and environmental protection; and related costs at seven targeted sites
- Research projects that may have exhumed saturated waste
- Research retrievable storage projects

**Status:**
- Research completed on all targeted sites
- Report nearing completion
**Study 1:**
- Task 1.3 (Apply Waste Inventories to Selective Removal Scenarios) pending DOE and NYSERDA approval

**Study 2:**
- Complete geophysics prove-out study with recommendations for full-scale study
- Submit report on evaluation of SDA and NDA protective measures
- Develop Study Plan Addendum for soils investigation at SDA and NDA; Completion of field work in CY2016 is uncertain.

**Study 3:**
- Submit report detailing exhumation projects and applicability of findings to SDA, NDA, and WTF