Facility Decommissioning at SRS

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Citizens Advisory Board
May 14, 2019
ACRONYMS

- CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act (one of the laws requiring cleanup of the Savannah River Site)
- BOA – Basic Order Agreement
- D&D - Deactivation and Decommissioning
- D&R – Demolition and removal
- DOE – US Department of Energy – Savannah River
- DPFR – Decommissioning Project Final Report
- EE/CA – Engineering Evaluation/Cost Analysis
- FDE – Facility Decommissioning Evaluation
- FFA – Federal Facility Agreement for the Savannah River Site
- RCRA – Resource Conservation and Recovery Act (another law requiring cleanup)
- NNSA – National Nuclear Security Administration
PURPOSE

• Provide an overview of the Deactivation and Decommissioning (D&D) process at SRS, including progress over the last 20 years, Decommissioning End States and current status of the Program
DEACTIVATION AND DECOMMISSIONING FRAMEWORK

• **DOE Order and Supporting Guides**
  – DOE Order 430.1C Real Property Asset Management
  – 430.1-3, Deactivation Implementation Guide
  – 430.1-4, Decommissioning Implementation Guide
  – 430.1-5, Transition Implementation Guide

• **SRS Facility Disposition Manual 1C**
  – Addresses safe shutdown, S&M, D&D

• **Deactivation – Stable condition, protective**

• **Decommissioning tailored to three different “models”**
  – Simple Model
  – Integrated Sampling Model
  – CERCLA Model (EE/CA)
DEACTIVATION AND DECOMMISSIONING FRAMEWORK

Facility D&D Process

- Operations
- Transition to Deactivation
- Deactivation
- Decommissioning
  - Demolition: In-Situ
  - Post Decommissioning Monitoring
- Long Term Stewardship

Surveillance and Maintenance
DECOMMISSIONING END STATES

Two (2) primary end states at SRS

• “Demolish (e.g., Office Building, Warehouse)
  – Non-hardened structures
  – Contaminants are removed
  – Demolition to grade, foundation remains

• “In-Situ Decommissioning” (e.g., P Reactor)
  – Hardened, concrete structure
  – Contaminants remain
  – Seal structure, fill below-grade spaces
  – Long term monitoring: Surveillance and maintenance of remaining structure and groundwater monitoring
PICTURES OF DEMOLITION TO GRADE

232-1H before decommissioning

232-1H after decommissioning
DEMOLITION TO GRADE

305-A Before

305-A After

710-B Before

710-B After
Picts of Demo to Grade

719-A Before

719-A After

420-D Before

420-D After
IN SITU END STATE

105-P Reactor Before

105-P Reactor After
K COOLING TOWER
Objectives for both end states

• Attain final end state with minimal long term stewardship
• Stabilize/isolate/remove contamination within or from the structure
• Protective of the industrial worker
• Protective of groundwater
  - Models conservatively assume receptor well is located at edge of structure
  - Primary drinking water standards are NOT exceeded
• Prevent human/animal intruder exposure to radioactive and hazardous contamination
Progress chart

- Completed 292 buildings since 1997 encompassing 3,437,000 square feet
CURRENT STATUS OF D&D PROGRAM

• D&D program in FY19
  – ~$7M for D&D planning and demolition

• Onboarded D&D mentor protégé Subcontractor; CTI Associates, Inc.
  – Existing BOA for D&D technical and project management personnel
  – Developing multi-vendor BOA for D&D services

• Initiated planning/execution of small, low hazard demolition projects
  – Execute 10 structure demolitions in FY19
    • i.e., Towers, Platforms, Sheds, Trailers
  – Planning in progress for additional 10 structures with slightly higher hazards
    • i.e., Ford Building, Shipping Cask Facility, Sewage Treatment Plant

• Supporting other Sitewide D&D projects
NEAR TERM D&D PROJECTS

- 904-47G Trebler Sample Pit
- 904-108G Trebler Sample Pit
- 690-N Process Heat Exchanger Facility
- 690-1G Deionizer Trailer
- 728-N Cask Repair Facility
- 704-20N Modular Office
ONGOING D&D

- **232-1H Construction Shops**
  - Work performed by Area Completion Projects and Project Management and Construction Services (PMCS) for the Savannah River Tritium Enterprise (SRTE) and is funded by the National Nuclear Security Administration (NNSA).
    - Fixed Price subcontract awarded toJordan Environmental Inc. (Blane Casey Bldg. Contractor & AEP Business Contractor)

- **236-H Reservoir Burst Testing and Helium Purification**
  - Ongoing deactivation by SRTE/Construction
  - Demolition estimate complete
  - Submitted regulatory documents and conducted site walk down with Regulators
  - Demo planned for FY21

**237/238-H Tritium Reservoir Reclamation and Storage**
- Deactivation being performed by SRTE/Construction
- Demolition estimate complete 1/19 Demo planned for FY22
CONCLUSIONS – SRS D&D

• SRS has a mature program for D&D
  – Protective of human health, public and environment
  – Compliant with Federal regulations and Department of Energy expectations
  – Captured in SRS procedures (e.g., ‘Facility Disposition’, Manual 1C) and the Federal Facility Agreement (FFA)

• Deactivation completed as precursor to decommissioning

• Decommissioning
  – Two end states: “In-Situ Decommissioning” and “Demolish”
  – Successfully decommissioned 292+ facilities in last 15 years
QUESTIONS???