A Presentation to the Citizens Advisory Board

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F Canyon Outside Facilities 211-F Decommissioning Project

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Area Completion
USDOE
Acronyms

- CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
- D&D – Deactivation and Decommissioning
- DOE – Department of Energy
- EE/CA – Engineering Evaluation and Cost Analysis
- EPA – Environmental Protection Agency
- FDE – Facility Decommissioning Evaluation
- SCDHEC – South Carolina Department of Health and Environmental Control
- SRNL – Savannah River National Laboratory
Purpose

- Provide an update regarding the F Canyon Outside Facilities 211-F Decommissioning Project
  - last update provided to the Facilities Disposition and Site Remediation Committee on November 6\textsuperscript{th} 2008
SRS Map: F-Area Location
Project Description

- 211-F Outside Facilities were located adjacent to the F Canyon
- Facilities provided handling, processing and storage of raw materials and waste for F Canyon through a series of tanks, evaporators, pumps and piping
- Project divided into three sections:
  - Waste Handling Vault
  - Outside Section
  - 805 and 820 Tanks
Waste Handling Vault:

- Tanks 800, 801, 804, 808 and 809
- Tanks located within a 48’ wide, 60’ long, 34’ deep concrete vault
- Tanks received waste from SRNL, 772-F Lab, Segregation Solvent and other 800-series tanks

- Iodine 129, Cobalt 60, and Cesium 137 are the primary radiological contaminants of concern
- There are no chemical contaminants of concern
Outside Section

- Stored and dispensed chemicals for F Canyon operations
- Prepared water for operations
- Recovered acid for reuse
- Concentrated and reduced waste volumes
- Washed and prepared used solvent for reuse
- Collected, processed and stored waste for disposition
Outside Section

- Outside Section equipment located inside diked areas (aprons)
  - Chemical Storage Facilities
  - Water Handling Facilities
  - Acid Recovery Unit
  - General Purpose Evaporators
  - General Purpose Waste Tanks
  - Segregated Solvent Facility
  - Recycle Sump

- Cesium-137 is the primary radiological contaminants of concern
- Arsenic and iron are the primary chemical contaminants of concern
Chemical Storage
Segregation Solvent
Acid Recovery Unit
General Purpose Evaporator and Tanks
Water Handling Facilities
805 and 820 Tank Cells

- 805 tank cell is a 20’ long, 11’ wide, and 26’ deep concrete cell with removable cell cover
- 820 tank cell is a 16’ long, 16’ wide, and 19’ deep concrete cell with removable cell cover
- Collected waste from operations and rainwater in-leakage
820 Tank Cell
Facility Decommissioning Evaluation

- Facility Decommissioning Evaluation (FDE) recommended use of the Engineering Evaluation/Cost Analysis Model for decommissioning of 211-F Facility
- DOE, SCDHEC, and EPA recognize that this decommissioning is an interim measure and additional measures, if required, will be part of the final F-Area Completion effort
Facility Decommissioning Evaluation

- **3 Models:**
  - **EE/CA Model (30 day public review)**
    - Nuclear facility category
    - Identified on FFA
    - As directed by the DOE
    - Example: 221-1F A-Line
  - **Integrated Sampling Model (informing CAB of plans)**
    - Example: 723-F Laundry
  - **Simple Model (informing CAB of plans)**
    - Example: 708-A Cafeteria
Outside Section End State

- **Outside Section:**
  - Remove equipment, tanks, and piping; dismantle and remove building structures, structural steel, and concrete; decontaminate chemical and radiological contamination as necessary; fill dike areas, sumps, and trenches to grade or top of walls; provide a 6-inch thick concrete cap and slope to allow for drainage.
  - Maximum risk to future industrial worker is $8.3E-05$ and an Hazard Index (HI) of 0.005
  - Risk is within CERCLA risk range of $1.0E-04$ – $1.0E-06$ and HI is less than 1.0
Outside Section End State

Before

After
Outside Section End State

- Broader view of multiple pads upon completion
Waste Handling Vault End State

- **Waste Handling Vault:**
  - Deactivate and leave the 800-series underground tank cells in place. Install the cell covers and place a 12-inch thick concrete cap on the cells at grade elevation with the cover sloped to facilitate runoff.
    - No radiological or chemical health risk to future industrial worker because the pathway is broken
Waste Handling Vault End State

Before

After
805/820 Tank Cells End State

- Deactivate and leave the 805 and 820 tank cells in place. Install the cell covers and place an 8-inch thick concrete cap on the cells at grade elevation with the cover sloped to facilitate runoff.
  - Maximum risk to future industrial worker is 1.7E-08 and no chemical risk
805 and 820 Tank Cells End State

Before

After
Path Forward for Project Completion

- Field work is complete and area turned over to F-Area Operations
- Develop the Removal Action Report and submit to regulators for review and concurrence