A Presentation to the Citizens Advisory Board

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F Canyon Outside Facilities 211-F Decommissioning Project

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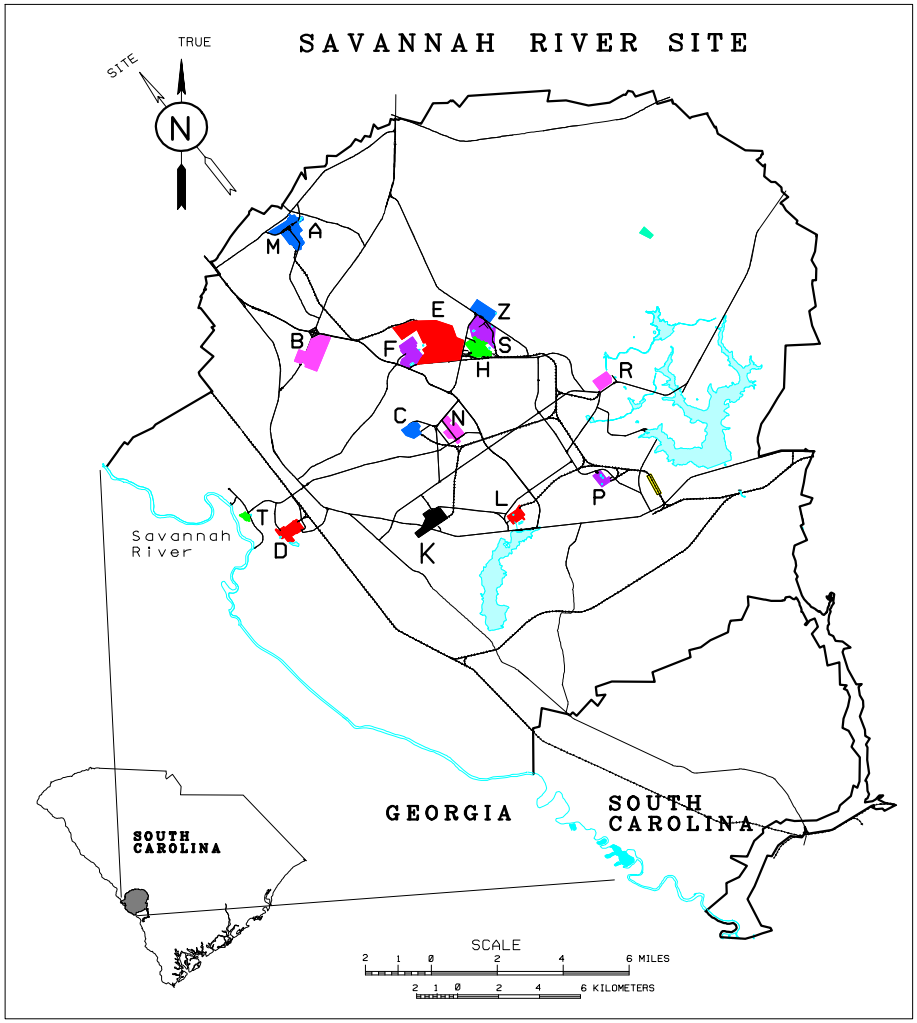
Acronyms

- 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

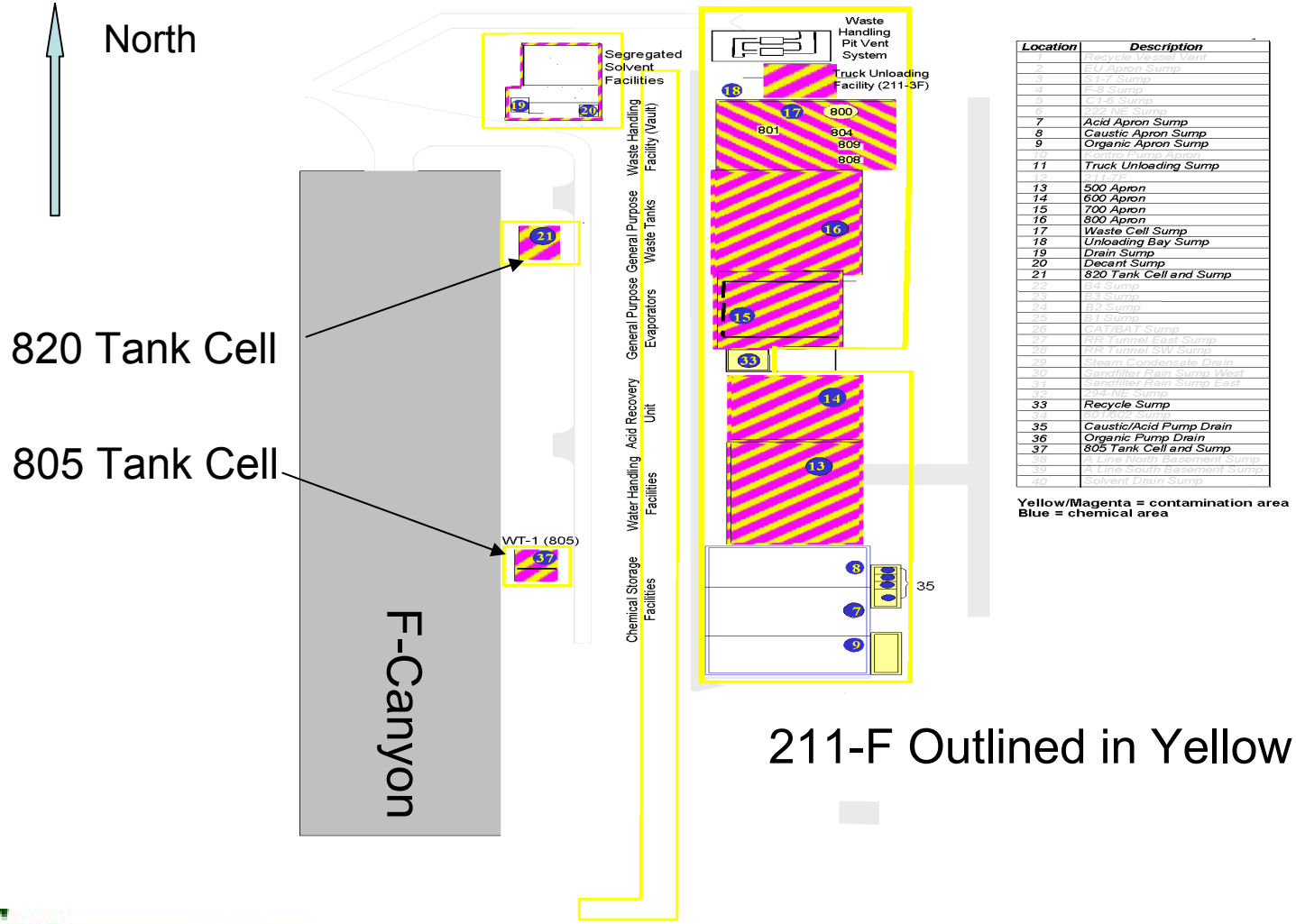
Purpose

- 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 6th 2008

SRS Map: F-Area Location



211-F Layout



Location	Description
1	Recycle Vessel Vent
2	EU Apron Sump
3	S1-7 Sump
4	F-8 Sump
5	C1-6 Sump
6	222 NE Sump
7	Acid Apron Sump
8	Caustic Apron Sump
9	Organic Apron Sump
10	Truck Unloading Sump
11	Truck Unloading Sump
12	211-F
13	500 Apron
14	600 Apron
15	700 Apron
16	800 Apron
17	Waste Cell Sump
18	Unloading Bay Sump
19	Drain Sump
20	Decant Sump
21	820 Tank Cell and Sump
22	B4 Sump
23	B3 Sump
24	B2 Sump
25	B1 Sump
26	CAT/BAT Sump
27	RR Tunnel East Sump
28	RR Tunnel SW Sump
29	Steam Condensate Drain
30	Sandfilter Rain Sump West
31	Sandfilter Rain Sump East
32	224-NE Sump
33	Recycle Sump
34	221-F-2 Sump
35	Caustic/Acid Pump Drain
36	Organic Pump Drain
37	805 Tank Cell and Sump
38	A Line North Basement Sump
39	A Line South Basement Sump
40	Solvent Drain Sump

211-F Outlined in Yellow

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

- **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**

Waste Handling Vault

Outside Section

- **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 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

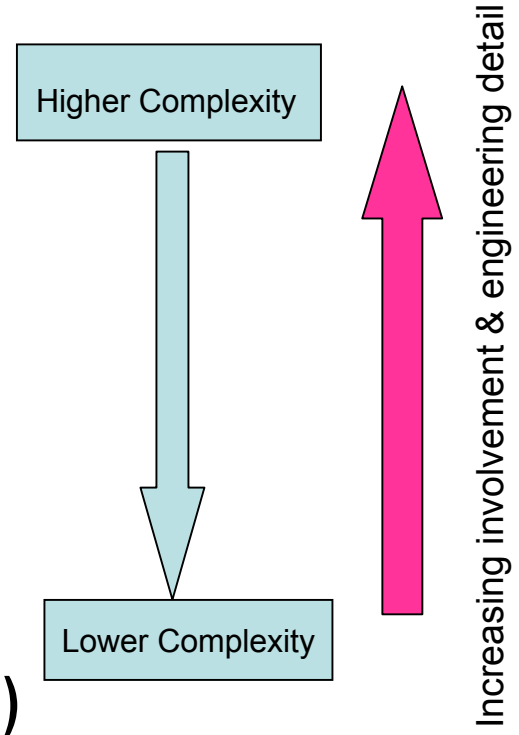
820 Tank Cell

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**