Facility Decommissioning under the
SRS Federal Facility Agreement

Panel – 235-F Closure Activities

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Acronyms

- CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act (one of the laws requiring cleanup of the Savannah River Site)
- D&D - Deactivation and decommissioning
- D&R – Demolition and removal
- DOE – The 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)
Purpose

- 235-F removal of Plutonium 238 is occurring to place this facility into a deactivated state
- Options for the final end state of this facility exist and will be provided by DOE EM in a briefing
- From a community perspective, provide a recommendation to EM SRS as to the option that would best serve the environmental concerns of the community

- Explain the FFA framework for facility decommissioning with the appropriate level of CERCLA evaluation
Background

• The FFA originally listed only sites of the known or potential release of hazardous substances; these require investigation and possibly response action by DOE
  – No requirements for buildings, unless they have had actual or potential releases to the environment

• July 2003 Memorandum of Agreement for Achieving an Accelerated Cleanup Vision
  – Adopted the Area Completion framework for identifying all response actions needed within an SRS industrial area (waste units and facilities)
  – Established process for determining whether or not decommissioning of a facility requires CERCLA evaluation
    • Graded approach, based on process knowledge, location, and waste management history
Incorporation of Facility Decommissioning into the FFA

- Appendix K (D&D Facilities List) was first created and populated with excess EM facilities in 2006.
- Section XL, “Decommissioning Facilities,” was added in 2006 to describe screening process and disposition:
  - Facilities (or remnants) needing further evaluation for cleanup after D&D are added to Appendix C.4, and become part of an Area Operable Unit for later assessment.
  - Facilities (or remnants) that require no further evaluation are added to Appendix K.2.
    - Most facilities decommissioned so far are on K.2 (clean).
- Appendices C (RCRA/CERCLA Units) and K (D&D Facilities) updated and submitted annually for regulator approval.
“End State”

- The final configuration of a facility at the conclusion of its decommissioning

- Generally either:
  - Demolition & Removal – facility is removed, either completely or to its foundation (slab), or
  - In Situ – much of the building’s exterior remains in place after it is placed in a stable, protective configuration
    - Sometimes appropriate for robust, hardened (reinforced concrete) facilities when:
      - Any remaining hazard can be isolated/contained within the structure to ensure protectiveness of human health and the environment
      - The benefit of D&R does not justify its much higher cost
Demolition & Removal End State

- 232-1H
In Situ End State

- 105-P Reactor after in situ decommissioning
Graded Approach to Decommissioning

• Three regulatory models exist, depending on the complexity and likelihood of contamination or release

  1. **Simple Model** – “clean” facilities, no further evaluation is needed
  2. **Integrated Sampling Model** – characterization before and after D&D; “as-left” conditions evaluated during Area Completion (facility remnant is added to Appendix C.4)
  3. **CERCLA Model** – decommissioning performed as a CERCLA response action (non-time-critical removal action or remedial action), with the associated evaluations and public participation
     - **Removal Action** (original recommendation in 1995 Joint EPA-DOE Policy on Decommissioning DOE Facilities under CERCLA)
       - EE/CA (Engineering Evaluation/Cost Analysis) and Action Memorandum
       - Describe method and end state of decommissioning, and waste disposition
       - Takes approximately 9 months to complete evaluation and issue the decision
     - **Remedial Action**
       - Proposed Plan and Record of Decision
       - Takes approximately 16 months to complete evaluation and issue the decision
     • **Facility remnant included in Area Completion evaluation (Appendix C.4)**
     • **Examples** – R-Area Reactor Building Complex, M-Area Production Area (313-M, 320-M, etc.), Heavy Water Components Test Reactor
Decommissioning Planning Process Flowchart

1. Building Inventory FFA Appendix K.3
   - FRA Report: Transmittal Memo: Recommending Administrative End-State FFA Appendix C.4, K.2
   - Simple (Non-optimized)
     - Implement Decommissioning
   - Regulatory Review and Comment
     - Go to FFA Appendix C.4 or K.2, as appropriate
   - Select Appropriate CFRRAA process
     - Implement Decommissioning and Removal or Remedial Action, as necessary
     - Regulatory Review and Comment
     - Remedial Action Report or POF or CMRR or RACR or PCRR or CMRR or RACR

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CMRR/RAA - Corrective Measures Implementation Report/Renalution Action Completion Report

DAR - Decommissioning and Demobilizing
DAR Final Report
EPC - Early Project Close Out
FCE - Federal Facility Agreement
FCA - Final Construction Agreement

DOE Decommissioning Responsibilities
SAVANNAH RIVER SITE • AIKEN • SC • WWW.SRS.GOV
Facility Decommissioning Documentation

- **Before Decommissioning** – *Facility Decommissioning Evaluation (FDE)*
  - Describes facility, process history, existing data, recommendation of Decommissioning Model
  - EPA and SCDHEC concur on FDE (formal approval not required)

- **After Decommissioning** – *Decommissioning Project Final Report (DPFR)*
  - Describes conditions found, conditions left, and data collected
  - Proposes disposition (Appendix K.2 or C.4)
  - Regulator approval required
  - *If the CERCLA model is used, that documentation makes a DPFR unnecessary*
Time Line for 235-F Decommissioning

- Current FFA Appendix E schedule milestones for the F-Area:
  - Interim Record of Decision: October 2026
  - Interim Remedial Action Start: January 2028
  - Final Record of Decision: September 2039
  - Final Remedial Action Start: December 2040