



U.S. DEPARTMENT OF
ENERGY



Facility Decommissioning under the SRS Federal Facility Agreement

Panel – 235-F Closure Activities

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*Citizens Advisory Board
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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

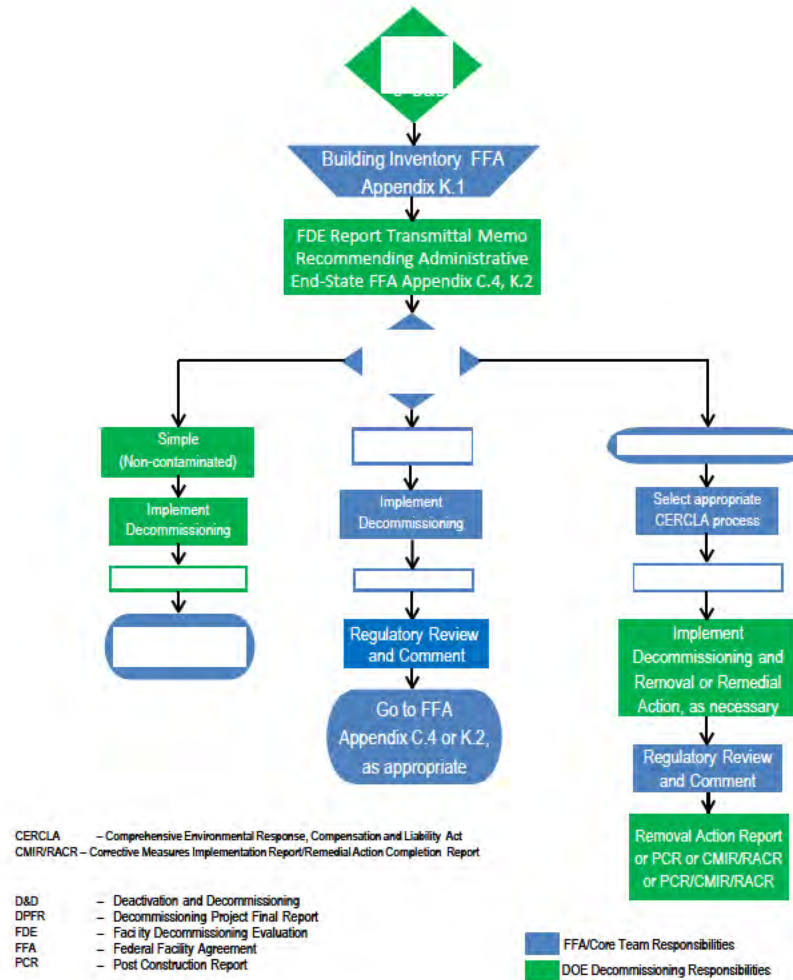
- 105-P Reactor *after* in situ decommissioning



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



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