U.S. DEPARTMENT OF ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

Building 235-F Project Status

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Nuclear Materials Committee
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Purpose

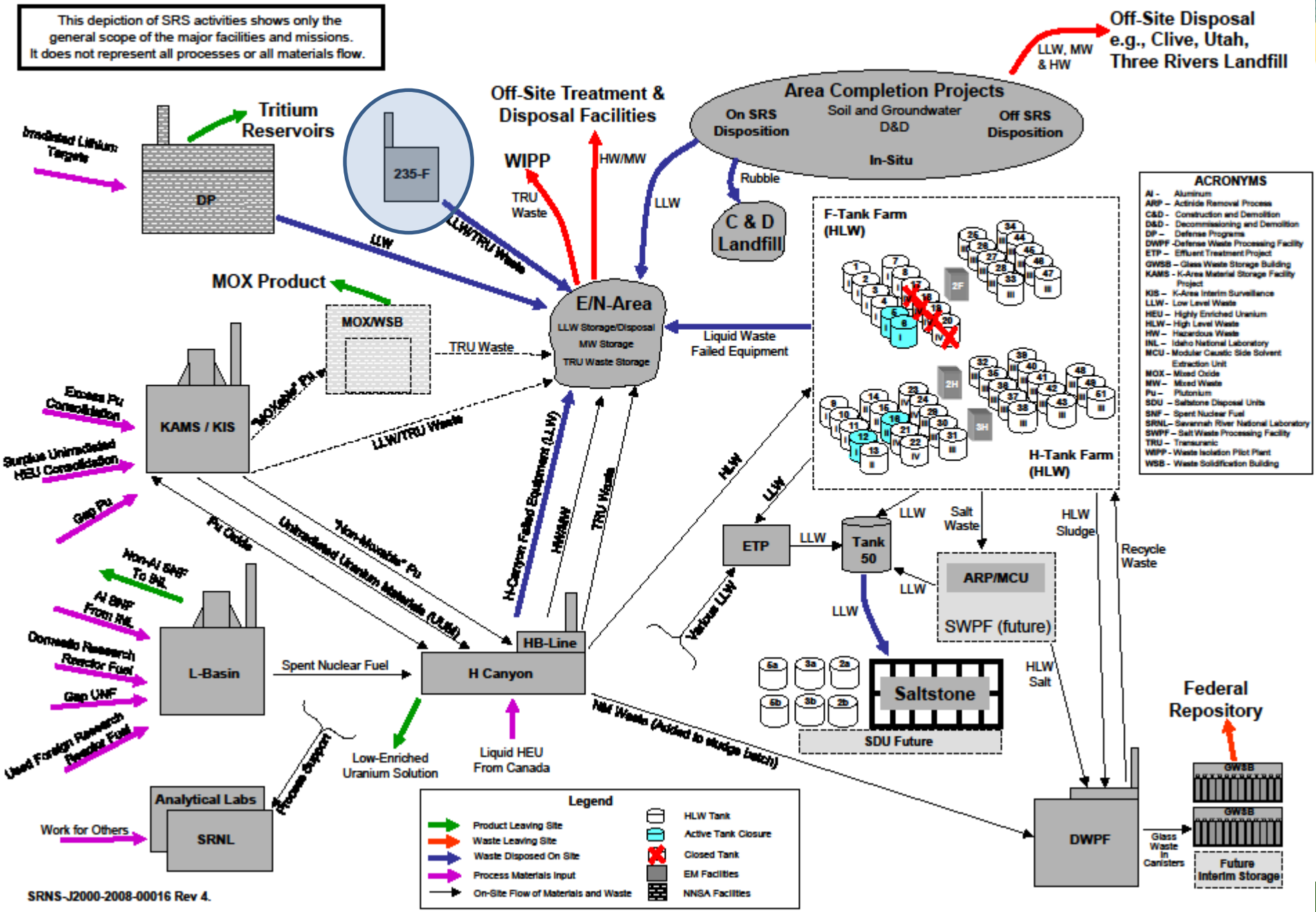
- Provide information regarding ongoing risk reduction activities in the 235-F Facility

- Update Recommendation 293 in accordance with 2014 Work Plan

Building 235-F

Savannah River Site
Waste and Material Flow Path

This depiction of SRS activities shows only the general scope of the major facilities and missions. It does not represent all processes or all materials flow.



ACRONYMS

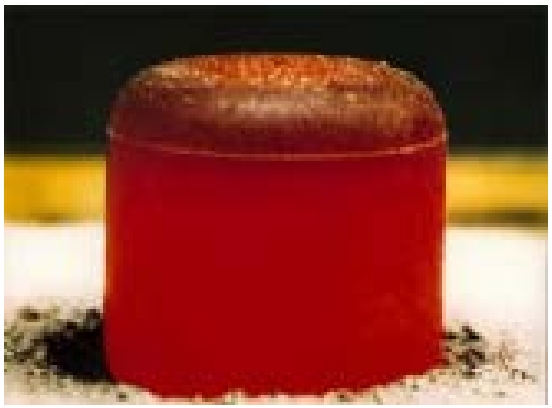
- Al - Aluminum
- ARP – Actinide Removal Process
- C&D - Construction and Demolition
- D&D - Decommissioning and Demolition
- DP – Defense Programs
- DWPF -Defense Waste Processing Facility
- ETP – Effluent Treatment Project
- GWSB – Glass Waste Storage Building
- KAMS - K-Area Material Storage Facility Project
- KIS – K-Area Interim Surveillance
- LLW - Low Level Waste
- HEU – Highly Enriched Uranium
- HLW – High Level Waste
- HW – Hazardous Waste
- INL – Idaho National Laboratory
- NCU - Modular Caustic Side Solvent Extraction Unit
- MOX – Mixed Oxide
- MW – Mixed Waste
- Pu – Plutonium
- SDU – Saltstone Disposal Units
- SNF – Spent Nuclear Fuel
- SRNL – Savannah River National Laboratory
- SWPF – Salt Waste Processing Facility
- TRU – Transuranic
- WIPP - Waste Isolation Pilot Plant
- WSB - Waste Solidification Building

SRNS-J2000-2008-00016 Rev 4.

Building 235-F Background

- The facility has had several missions over the years, most recent was using Pu-238 to fabricate fuel for deep space missions in the 1980's
- 1.5 Kilograms of Pu-238 material remain in the Plutonium Fuel Form (PuFF)facility
- Residual material in cells were measured in 2006
- Facility is safely maintained in the surveillance and maintenance mode
- The objective of this project is to reduce the amount of residual Pu-238 material in the facility
- End state will be determined through a Core Agreement with Regulators

Space Mission



Fuel Form

Recommendation 293

- On December 5, 2012 Department of Energy issued an Implementation Plan to the Defense Nuclear Facilities Safety Board
- Savannah River is currently in the process of implementing the plan
- Recommendation 293 supports Defense Nuclear Facility Safety Board 2012-1 Response (summary of recommendations)

  - Immobilize and/or remove the residual Pu-238
  - Remove all transient and fixed combustibles that are not directly necessary for activities
  - Ensure all necessary electrical equipment is in a safe configuration
  - Evaluate operability of early detection and alarm systems
  - Ensure an integrated emergency response plan is in place
  - Ensure periodic coordinated drills in response to a simulated event at 235-F are conducted

Building 235-F Status

- Continue to complete actions to respond to DNFSB Recommendation 2012-1
- Up to the point at which budget sequestration began in FY 2013 the majority of FY 2013 actions were completed on schedule
- Project Plan has been revised to reflect the effects of 2013 sequestration and FY 2014 Continuing Resolution
- Approved FY 2014 funding level for 235-F risk reduction work is $9 M for the remainder of the project.

Building 235-F

Key Accomplishments

Emergency Preparedness Drill

- Continue surveillance and maintenance activities necessary to maintain safety
- Replaced Facility Roof in 2012
- Development and implementation of a transient combustible control program
- Development of a specific plan for fixed combustible removal
- Development of a specific plan for de-energization of unnecessary electrical circuits in the building
- Completion of technical work to upgrade the existing Fire Detection and Alarm System (FDAS)
- Planning and conduct of Emergency Preparedness drills in F Area and adjacent construction sites

Key Accomplishments

- Formation of a core project management team (including Project Manager with high-impact project experience at SRS and Rocky Flats)
- Completion of a detailed Project Deactivation Plan covering the full life-cycle of the project
- Fabrication and installation of a cell mock up for process and procedure development and validation, process training, operator qualification, work planning, and similar tasks

235-F Cell Mock Up

Key Plans for FY 2014

235-F Cell Mock Up

- Crew Retention and Training
  - Maintain crew members with extensive hands-on experience working together and prepares them to move into cleanup phase of the project
- Use of the mock-up facility
  - Used for process and procedure development, training development, training conduct and evaluation, experiments with tools, and field-testing prototypes
  - Drill training for off-normal events
- Begin Field Work
  - On schedule to complete installation of Fire Detection and Alarm System Upgrades, removal of remaining fixed combustibles and the de-engerization of electrical component by end of FY 2014.

Key Plans for FY 2014

Plutonium Fuel Form (PuFF) Cell

- Technical Document Preparation and Planning
  - Technical documents will be developed in FY 2014 to support activities such as development of the cell-by-cell decontamination and equipment removal approach, completing the design for the breathing air distribution system, and preparing electrical and mechanical isolation for cells 6-9
- Deactivation Bases for Interim Operations Implementation (BIO) progress
  - Implement a Safety Basis Implementation Plan to implement the portions of the Deactivation Safety Basis that can be implemented without allowing the project to proceed into the cell clean-up phase
  - Fire Detection Alarm and Detection System installation, testing, and acceptance

Current Project Schedule

- Fire Detection and Alarm System, Fixed Combustibles, De-Energization.
- Deactivation Safety Program Targeted Implementation.
- Complete identification of tools, fixatives, enhanced characterization.
- Complete crew acquisition/training.

2014: Preparation For Intrusive Work

- Complete Readiness for Reviews.
- Begin electrical/mechanical isolation of cells.
- Begin intrusive work (windows, manipulators, etc.)
- Complete enhanced characterization

2015: Begin Intrusive Work

- Residual Pu-238 Removal (Cells 6-9).
- Lessons Learned and update plans.
- Residual Pu-238 Removal (Cells 1-5).
- Final measurement and continue Surveillance & Maintenance mode until ready for final end state.

2016-2019: Residual Pu-238 Removal

Summary

Plutonium Fuel Form (PuFF) Controls

- All FY 2013 actions have been completed. We have begun preparations in the facility
- Project Plan has been revised to reflect the effects of FY 2013 sequestration and FY 2014 Continuing Resolution
- Current FY 2014 funding level for 235-F risk reduction work has been established ($9M/year)
- Plans for FY 2014 include retention and training of crew, upgrade fire alarm and detection system, remove fixed combustibles, and complete electrical de-energization of components.

Questions

Plutonium Fuel Form (PuFF) Cell Controls