Savannah River Site

Transuranic and Solid Waste Program Update

Presentation to the SRS Citizens Advisory Board
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To satisfy Waste Management Committee Work Plan by:

1) Providing update to CAB on the SRS Transuranic (TRU) Waste Program and Waste Isolation Pilot Plant (WIPP)

2) Providing update on disposal activities for other Solid Waste streams
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 material flow.

Off-Site Disposal
e.g., Clive, Utah

Public Landfills
e.g., Three-Rivers

Traded Lithium Targets

In-Process Reservoirs

Off-Site Treatment & Disposal Facilities

WIPP

LLW

MOX Product

TRU Waste

ETP

H-Closure

H-Completion Faced Equipment (LLW)

LLW Storage/Disposal

KAMS/KIS

Pu Prep Project

KAMS/KIS

H-Base Line

H-Canyon

Spent Nuclear Fuel

Analytical Labs

Low-Enriched Uranium Solution

SRNL

Legend

Product Leaving Site

Waste Leaving Site

Waste Disposal on Site

Process Materials Input

On-Site Flow of Materials and Waste

Tank 48 Organic Removal Project

Closed Tank

Remediation

In-Situ

Area Closure Projects

Soil and Groundwater D&D

Liquid Waste Faced Equipment

Saltstone

SWMF (future)

Tank 50

Fed. Repository

Federal Repository

Saltstone

LW Sludge

Salt Waste

Recycle Waste

Non-AI SNF To INL

All SNF From Pick

Foreign SnF

Work for Others

SRNL

Analytical Labs

Low-Enriched Uranium Solution

EM

Environmental Management

Safety • Performance • Cleanup • Closure

SRS
SRS TRU Waste Program

- Definition - Radioactive waste that contains alpha-emitting radionuclides with an atomic number greater than 92 (uranium), half-lives greater than 20 years, in concentrations greater than 100nCi/g.
- Generated and managed from SRS operations since 1970s
- Requires off-site disposal at WIPP
- Stored legacy TRU waste at SRS peaked in 2002 at 12,000 cubic meters and 1.2 million curies
- Federal and State regulated
TRU Waste Disposal Success

- WIPP opened in 1999
- First SRS shipment to WIPP May 8, 2001
- 1,536 SRS shipments of TRU waste have been disposed at WIPP
- Approximately 12,000 cubic meters of legacy SRS TRU waste disposed to date
H- Canyon Box Remediation

Pictures of waste inside large boxes
SRS Legacy TRU Waste Status

- 700 cubic meters of original volume remain to be disposed
- ~40 cubic meters left to remediate/repackage
- Remediation activities to be completed by 9/30/13
- WIPP characterization/certification to be completed in fiscal year (FY) 2014 if funding available
- Shipments to WIPP to be completed in FY 2015 if funding available
SRS Future TRU Waste Program

- Maintain WIPP certification and perform annual shipping campaigns to WIPP
- TRU waste generators include:
  - Non-MOX plutonium disposition
  - Future 235-F Deactivation
  - On going H-Canyon and Savannah River National Laboratory Operations
  - Future MOX operations
Solid Waste Disposition Update

Solid Waste Program Manages the Treatment, Storage, and Disposal of:

- Transuranic (TRU) Waste
- Radioactive Low Level Waste (LLW),
- Mixed Low Level Waste (MLLW), and
- Hazardous Waste (HW),
Low Level Waste Program

- Definition - Any radioactive waste not classified as High Level Waste, or Transuranic Waste. It does not contain chemically hazardous constituents.
- Waste generated from SRS operations, D&D, and environmental cleanup.
- Disposed on site (some exceptions).
Hazardous Waste (HW) and Mixed Low Level Waste (MLLW) Program

- **Definition:**
  - HW is any toxic, corrosive, reactive or ignitable material that could damage the environment or negatively affect human health according to the Resource Conservation and Recovery Act (RCRA).
  - MW contains both radioactive and chemically hazardous constituents, as defined by RCRA.

- Generated from SRS operations, legacy TRU waste (MLLW), and environmental cleanup.
- Disposed off site.

MLLW waste boxes
<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>LLW disposed to date</td>
<td>6,055 cubic meters</td>
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<tr>
<td>MLLW disposed to date</td>
<td>87.8 cubic meters</td>
</tr>
<tr>
<td>HW disposed to date</td>
<td>133.8 cubic feet</td>
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</tbody>
</table>
Summary

- Solid Waste Operations remain regulatory compliant and efficient
- Ongoing Low-Level, Mixed and Hazardous Waste operations keeping pace with SRS demands
- Completion of Legacy TRU waste disposition dependent on availability of FY 2014 funding