Defense Waste Processing Facility Update

Savannah River Remediation

Savannah River Site Citizens Advisory Board
SRR-DWP-2015-00006

May 2015
Purpose

- Provide update on the Defense Waste Processing Facility and a status on the Interim Canister Storage Double-Stack project.

- Fulfill 2015 WM Committee Work Plan topic
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SRS Liquid Waste Program

Legacy Liquid Waste

- 43 tanks
- 37 Mgal
- 256 MCi

Tanks Cleaned and Closed

- <1% radionuclides remain in tanks

51 Tanks
- 6 grouted & operationally closed
- 2 heel removal complete
- 6 BWRE complete
- 64% empty (old style)
- 20% empty (new style)

Salt waste
- 8.1 Mgal treated

Salt Processing

Legend:
- ARP: Actinide Removal Process
- BWRE: Bulk Waste Removal Efforts
- DWPF: Defense Waste Processing Facility
- MCU: Modular Caustic Side Solvent Extraction Unit
- SWPF: Salt Waste Processing Facility

Radionuclides

- Solid (non-hazardous) waste

Swepf (under construction)

Glass Waste Storage

- Poured 3,965 cans of projected 8,582
- 57 million curies immobilized in glass

Saltstone Disposal Facility

- 17.3 Mgal grout dispositioning containing 459 kCi

Most radionuclides to glass

<<1% radionuclides to saltstone

We do the right thing.
An Integrated System
Vitrification Process

Tank Farm

Glass Waste Storage

Transporter

Canister Cleaning

Welding

MFT
SME
SRAT
LPPP Sludge Tank

Chemical Addition

Glass Melting & Canister Closure

We do the right thing.
We do the right thing.

DWPF Production

- On schedule to produce desired number of canisters this year

- Canister Production Rate
  - FY15 156
  - FY16 136 with 4 month melter outage

- Canisters Produced To Date (March 12, 2015) 3965

- Estimated Total Canister Production 8582

- Canisters Produced (% of Total) 46%
• **No 3rd Glass Waste Storage Building (GWSB)**
  – Large upfront cost & future D&D cost

• **Interim Canister Storage Required**
  – With Double Stack of Canisters in GWSB #1
    • GWSB#1 Capacity Increased from 2,254 to 4,508
    • GWSBs Capacity Increased to 6,848
    • Additional storage will be required
- Two canisters per location (vs. one can per location)
- Lower canister on support on vault floor (vs. cross bar support 3’ off floor)
- Upper canister placed directly on top of lower canister
- Upper canister extends into operating deck floor, but remains below grade
- Shield plug redesigned for equivalent radiological protection
Inside vault looking across rows of canister supports

Inside canister storage location

Plug Replaced

Crossbar Removed

Single Stack (Current)

Double Stack (Modified)

Tapered Plug

Floor Plate Added
Canister Storage Summary

- Technical Evaluation Supports Double Stacking GWSB1 (e.g. heat models, rad models, seismic/structural)
- Use Interim Canister Storage – Double Stack to Bridge Canister Storage Gap
- Increases GWSB1 capacity to 4508 canisters