Savannah River Remediation
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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

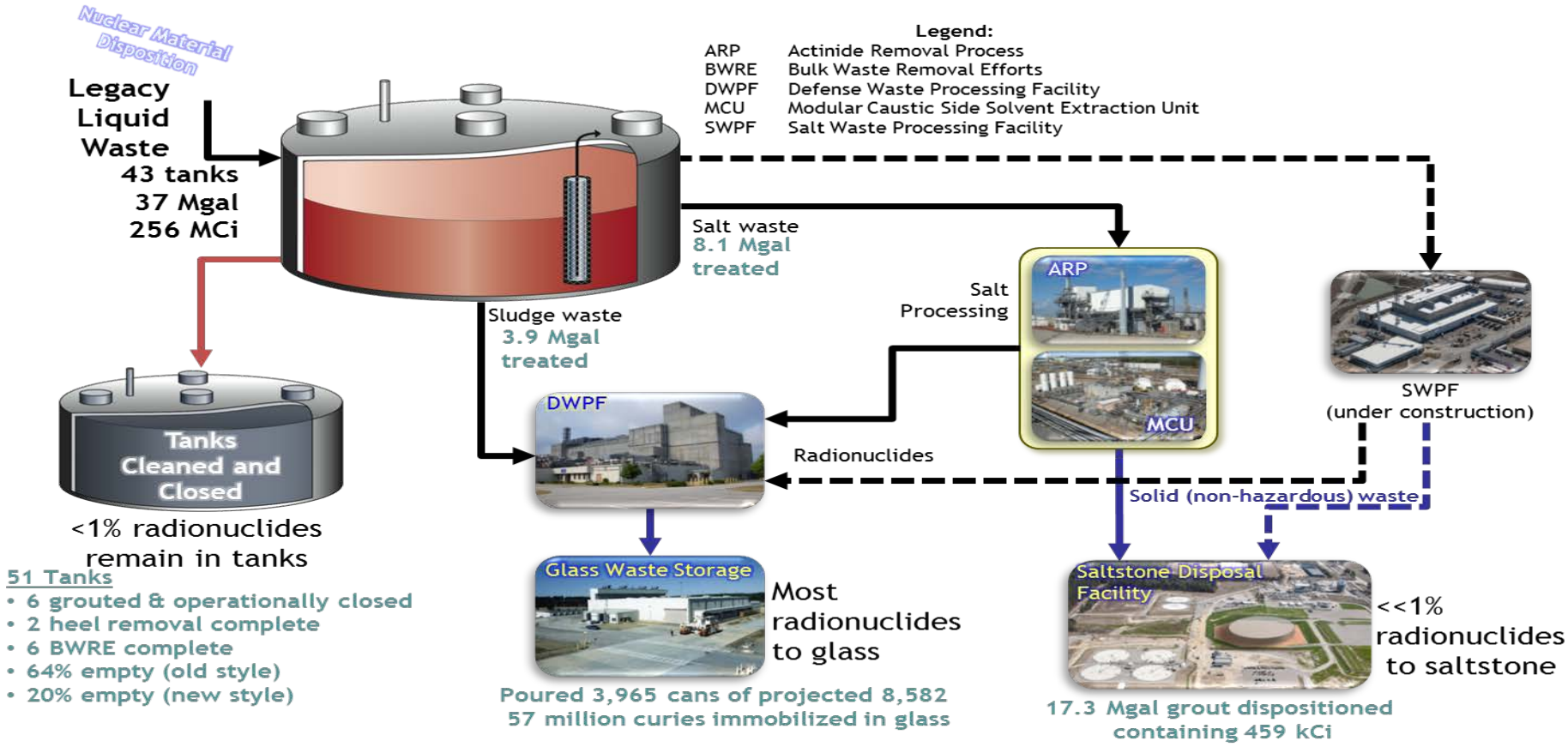
Acronym List

We do the right thing.

- DWPF: Defense Waste Processing Facility
- SWPF: Salt Waste Processing Facility
- ARP: Actinide Removal Process
- MCU: Modular Caustic Side Solvent Extraction Unit
- BWRE: Bulk Waste Removal Efforts
- GWSB: Glass Waste Storage Building
- LPPP: Low Point Pump Pit
- SRAT: Sludge Receipt and Adjustment Tank
- SME: Slurry Mix Evaporator
- MFT: Melter Feed Tank
- SCT: Shielded Canister Transporter
- GWSP: Glass Waste Storage Project
- MAR: Material at Risk
- SNF: Spent Nuclear Fuels
- SSCs: Structures, Systems and Components
- MCi: Million Curies
- kCi: Thousand Curies
- USQE: Unreviewed Safety Question
- FSAR: Final Safety Analysis Report
- NPH: Natural Phenomenon Hazards
- DID: Defense in Depth
- ITS: Equipment Important to Safety
- EG: Evaluation Guidelines
- CW: Collocated Worker
- FW: Facility Worker
- SS: Safety Significant
- SC: Safety Class
- FY: Fiscal Year
- SAC: Specific Administrative Controls
- MREM: One thousands of a REM
- REM: Roentgen Equivalent Man
- HLW: High Level Wastes
- D&D: Decommissioning and Demolition
- Hg: Mercury

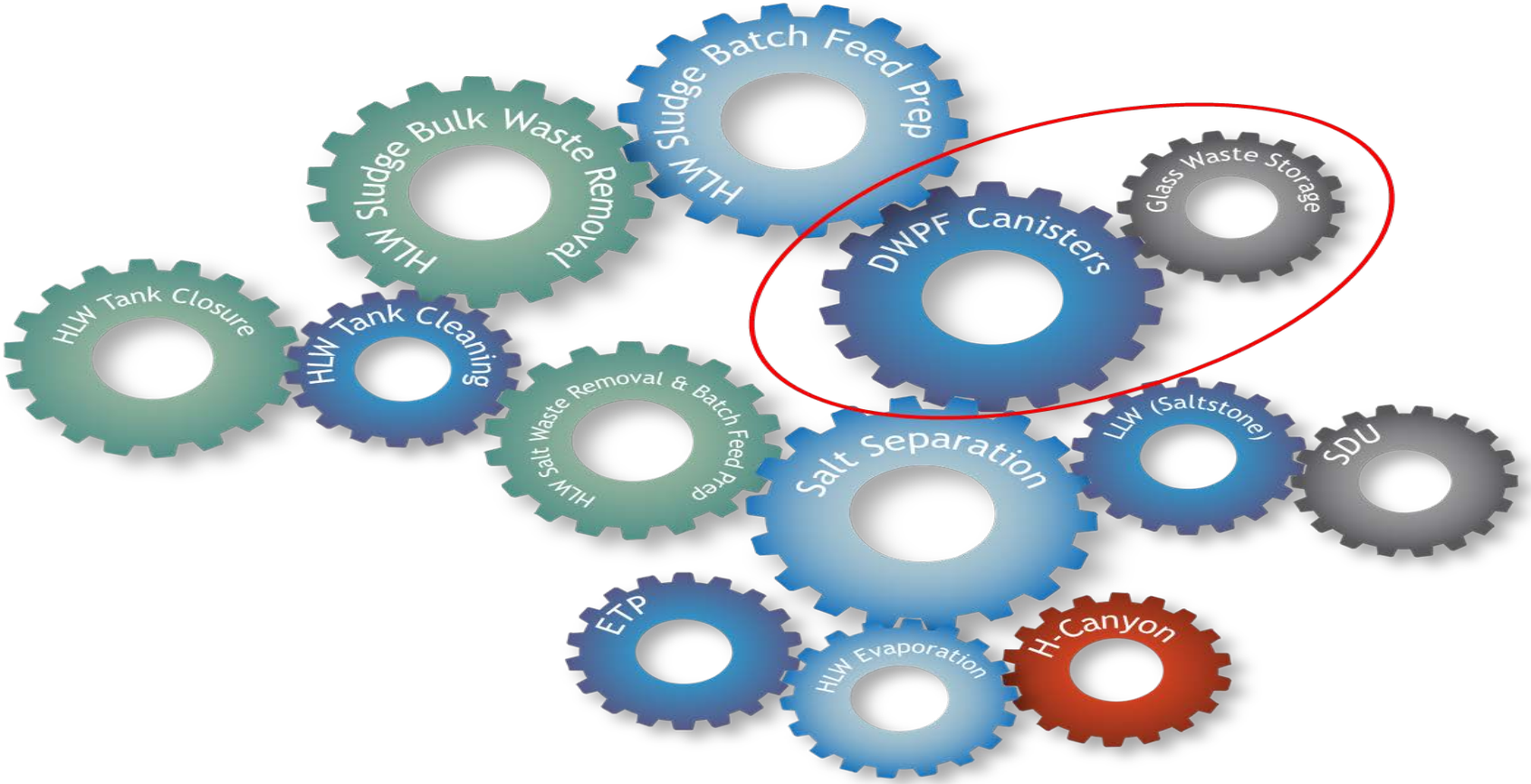
SRS Liquid Waste Program

We do the right thing.



An Integrated System

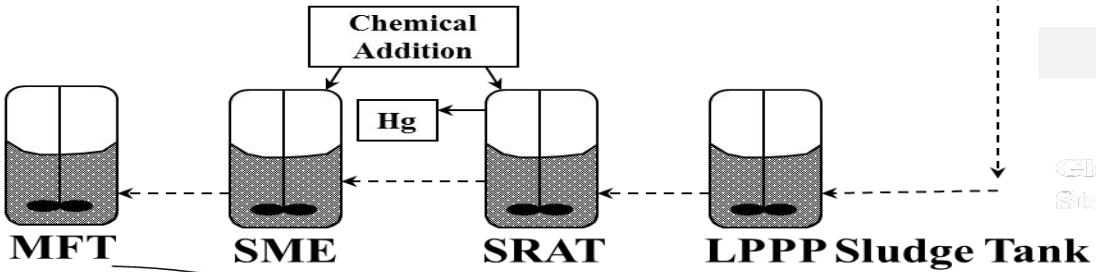
We do the right thing.



Vitrification Process

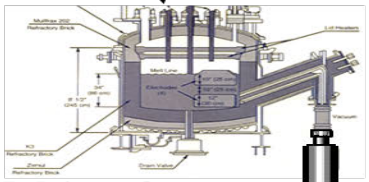
Tank Farm

DWPF Chemical Processing



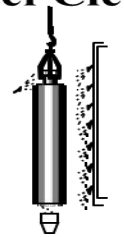
Glass Waste Storage

Transporter

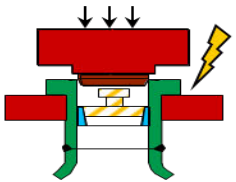


Glass Melting & Canister Closure

Canister Cleaning



Welding



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%

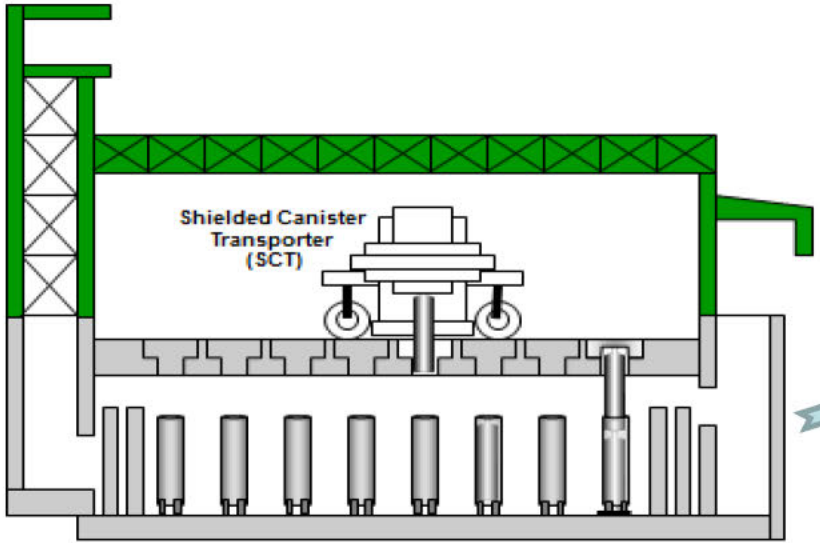
Canister Storage

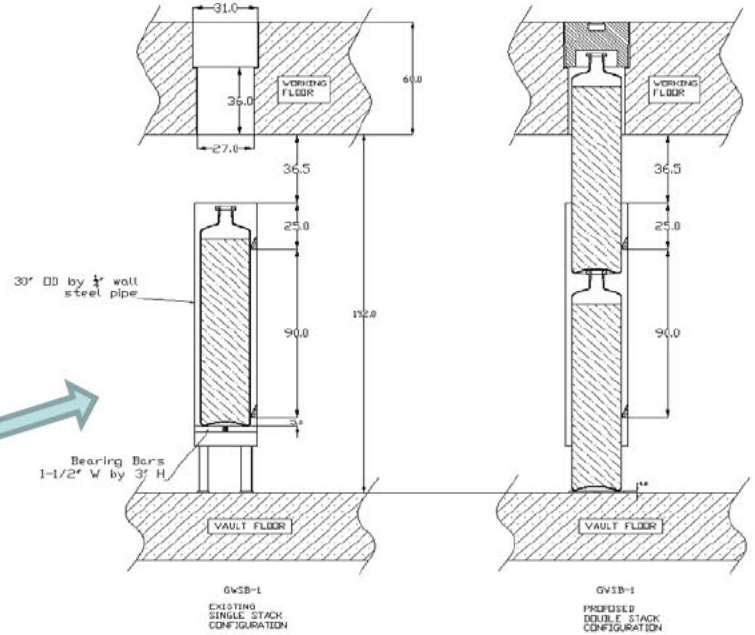
- **No 3rd Glass Waste Storage Building (GWSB)**
  - Large upfront cost & future D&D cost

- **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

Interim Canister Storage - Double Stack Concept for GWSB1

We do the right thing.

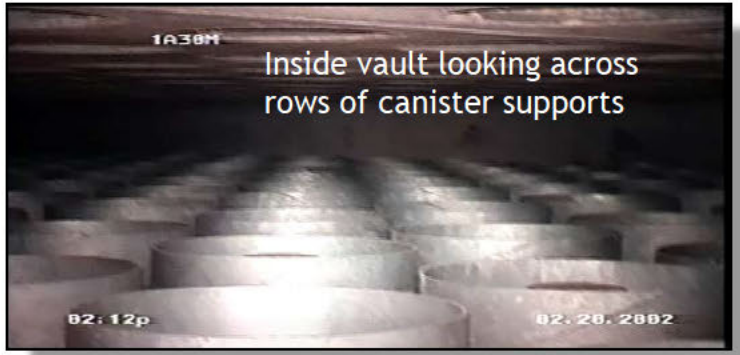


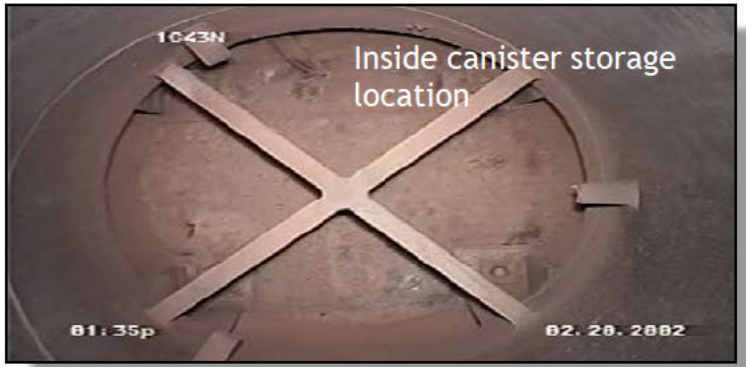


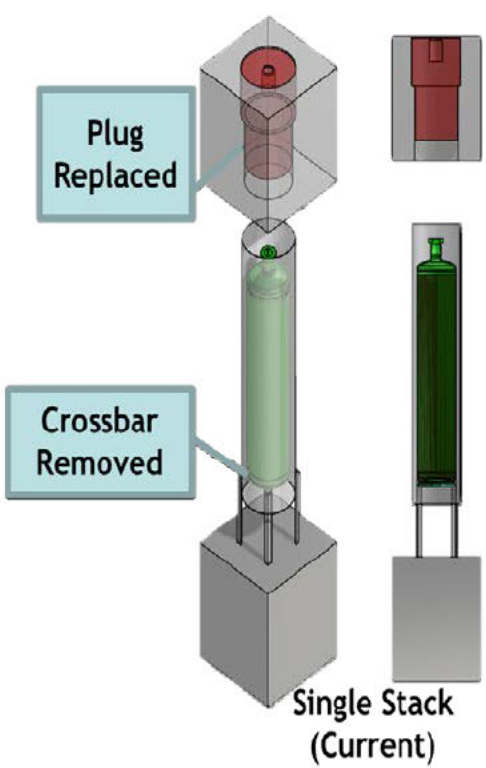
- **Two canisters per location (vs. one can per location)**
- **Lower canister on support on vault floor (vs. cross bar support 3' off floor)**
- **Upper canister placed directly on top of lower canister**
- **Upper canister extends into operating deck floor, but remains below grade**
- **Shield plug redesigned for equivalent radiological protection**

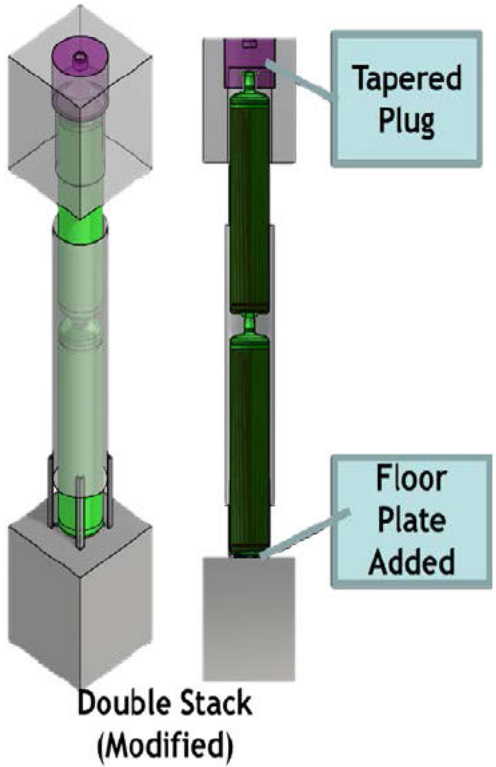
Canister Double Stack

We do the right thing.









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