STORAGE of VITRIFIED HLW

Brenda Green
Savannah River Remediation

October 29, 2014
Projected Canister Production Rates

- **Canister Production Rate Based on System Plan 19**
  - FY15  156
  - FY16  136 with 4 month melter outage
  - FY17  168
  - FY18  160 with 4 month outage for transition to SWPF operation
  - FY19  276
  - Beyond 276

- **Canisters Produced To Date (Sept 30, 2014)**  3877

- **Estimated Total Canister Production**  8582

- **Canisters Produced (% of Total)**  45.2

- **Canister Production Exceeds Canister Storage in FY19**
Supplemental Canister Storage

- No 3rd Glass Waste Storage Building (GWSB) (~ $130 million)
  - Large upfront cost & future D&D cost
- Glass Waste Storage Project (GWSP) Being Developed to Provide
  - Supplemental Canister Storage in above ground storage containers similar to commercial SNF storage
  - Loading Station for SCT transfer of canister to storage containers
  - Storage pad for storage containers
  - Storage containers procured to support canister production
  - Allow future construction of canister transportation capabilities
- GWSP Deferred Until FY18 Line Item
- Interim Canister Storage Required
  - Double Stack of Canisters in GWSB1 increases capacity from 2254 to 4508
- 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
Glass Waste Storage Building 1 Vault

- Inside vault looking across rows of canister supports
- Inside canister storage location
  - Minimum Opening in floor is 27 inch ID
  - Cross Bar Assembly is 1 ½ inch x 3 inch galvanized carbon steel bars
  - Cross Bar Assembly~ 18 ft down with 30 inch OD
  - 2 sets of guides (3 tabs each) to guide canisters
  - Bottom guides sit 5 inches above cross bar assembly
Proposed Modifications

Plug Replaced

Crossbar Removed

Single Stack (Current)

Double Stack (Modified)

Tapered Plug

Floor Plate Added
Impact of ICS-DS on Canister Storage Space

Available Canister Storage Positions

- **Start in Nov 16**
- **Start in Nov 17**
- **No ICS-DS**

Assumptions:
300 ICS-DS Modifications Per Year
GWSB 1 Storage Increases to 4508
Adequate Space Through FY 26
Technical Feasibility Summary

- Heat Model supports canisters produced to date and future sludge batch forecast
- Seismic/Structural calculations support adequate margin for static and seismic performance category and canister integrity
- Cutting tool technology exists
- Radiological calculations support acceptable dose rates during modification w/o emptying vault
- GWSB1 remains Underground Radioactive Material Area posting
- No safety basis or fire hazard concerns – implementation actions only
Canister Storage Summary

- Technical Feasibility Evaluation Supports Double Stacking GWSB1
- Use Interim Canister Storage – Double Stack to Bridge Canister Storage Gap
- Increases GWSB1 capacity to 4508 canisters
- Provides adequate storage through FY26