STORAGE of VITRIFIED HLW

Brenda Green
Savannah River Remediation

October 29, 2014

SRR Savannah River Remediation
A URS COMPANY TEAMED WITH BECHTEL | CH2M HILL | B&W | AREVA

Savannah River National Laboratory™
OPERATED BY SAVANNAH RIVER NUCLEAR SOLUTIONS

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**

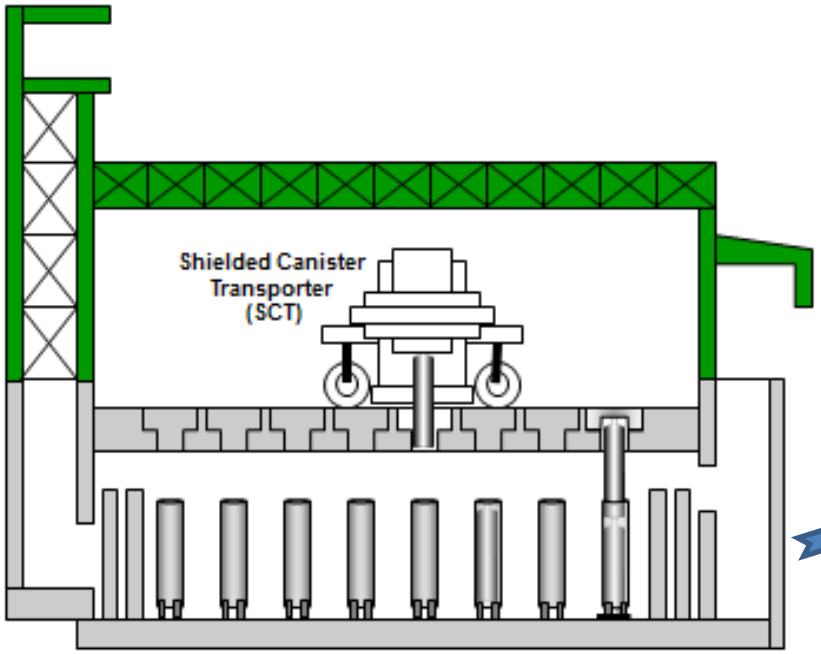
- **Canisters Produced (% of Total) 45.2**

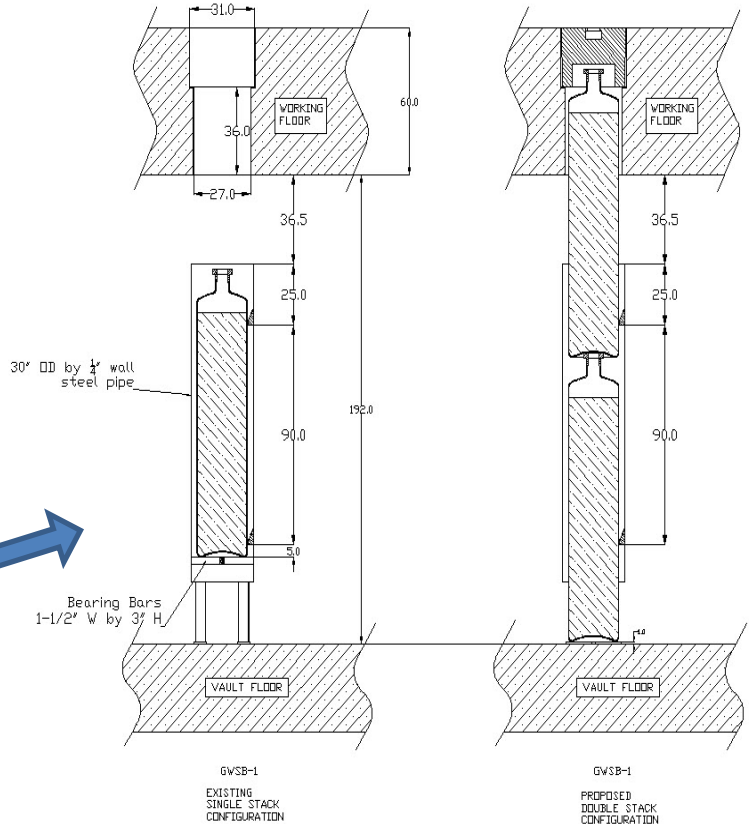
- **Canister Production Exceeds Canister Storage in FY19**

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

Interim Canister Storage - Double Stack (ICS-DS) Concept for GWSB1

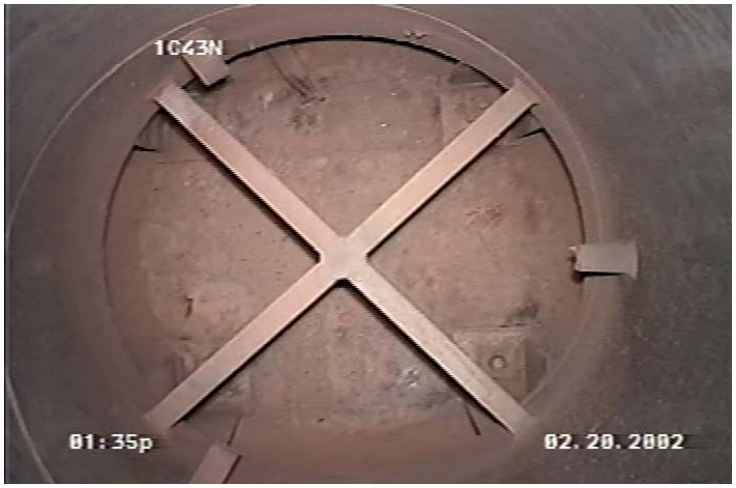




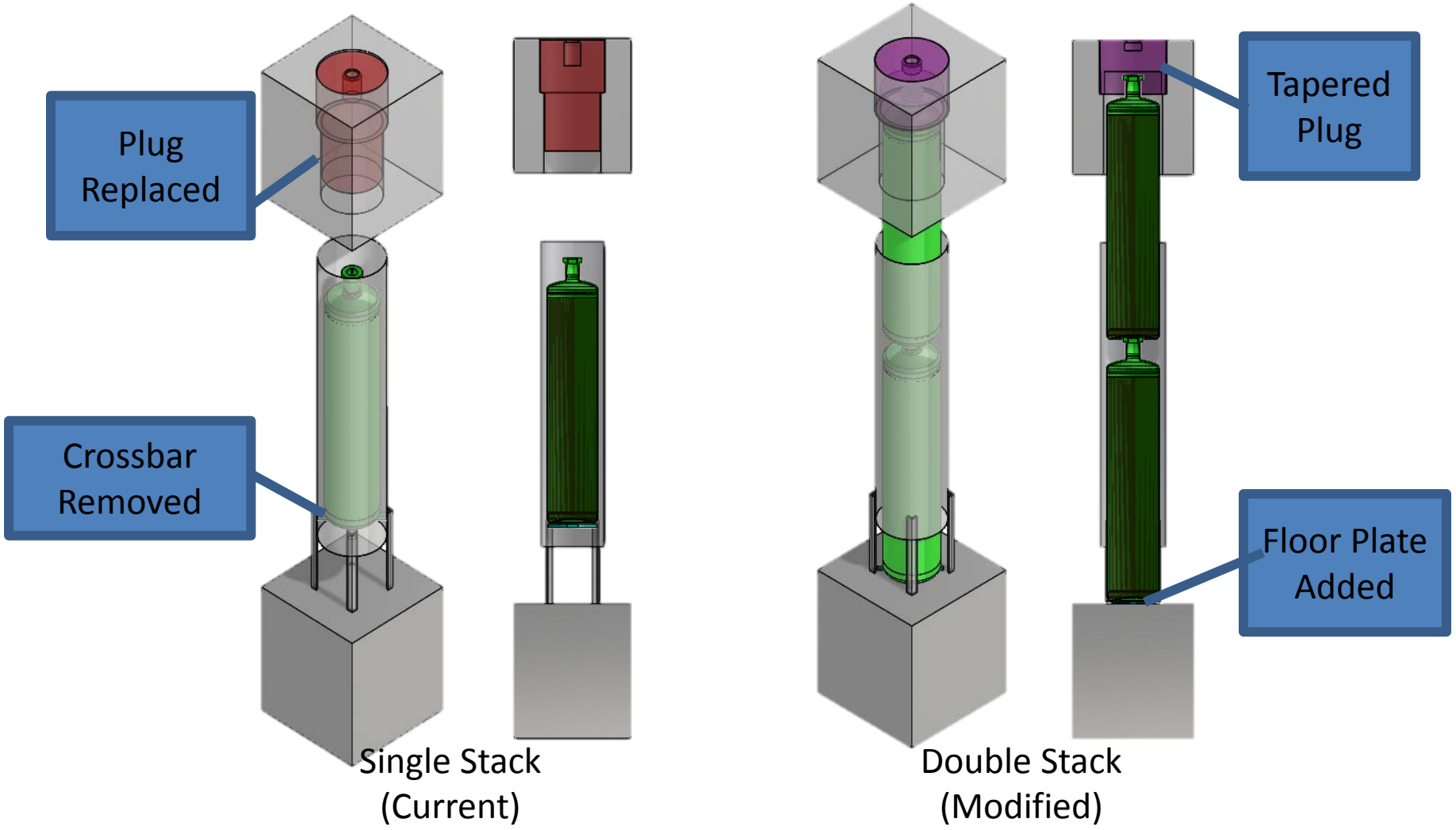
- Two canisters per location (vs. one can per location)
- Lower canister on support on vault floor (vs. cross bar support 3’ off floor)
- Upper canister placed directly on top of lower canister
- Upper canister extends into operating deck floor, but remains below grade
- Shield plug redesigned for equivalent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

Glass Waste Storage Building 1 Vault

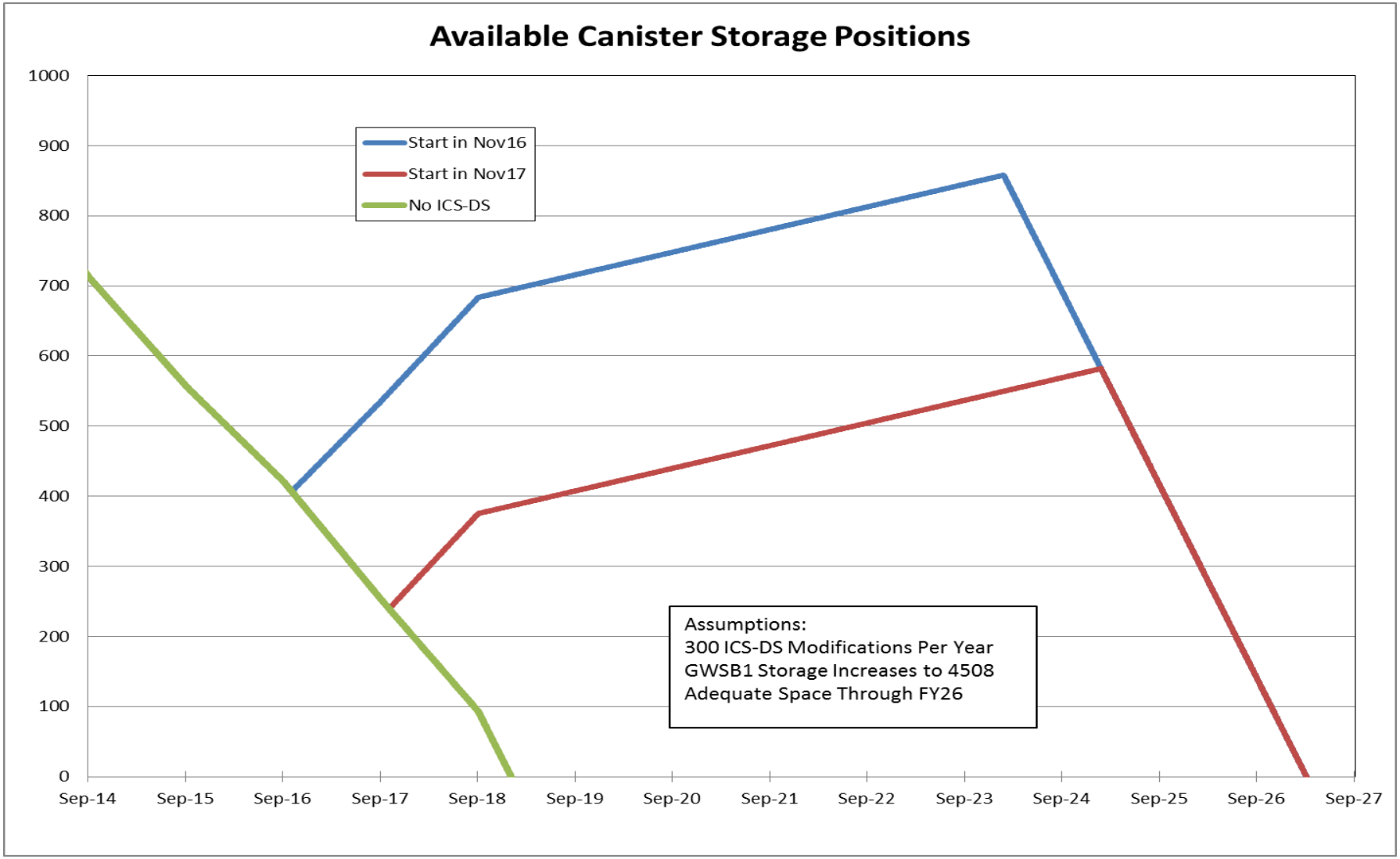
- **Inside vault looking across rows of canister supports**
- **Inside canister storage location**
  - Minimum Opening in floor is 27 inch ID
  - Cross Bar Assembly is 1 ½ inch x 3 inch galvanized carbon steel bars
  - Cross Bar Assembly~ 18 ft down with 30 inch OD
  - 2 sets of guides (3 tabs each)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



Proposed Modifications



Impact of ICS-DS on Canister Storage Space



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