



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
ENVIRONMENTAL
MANAGEMENT

STORAGE of VITRIFIED HLW

Brenda Green

Savannah River Remediation

October 29, 2014



**Savannah River
Remediation**

A URS COMPANY TEAMED
WITH BECHTEL | CH2M HILL | B&W | AREVA

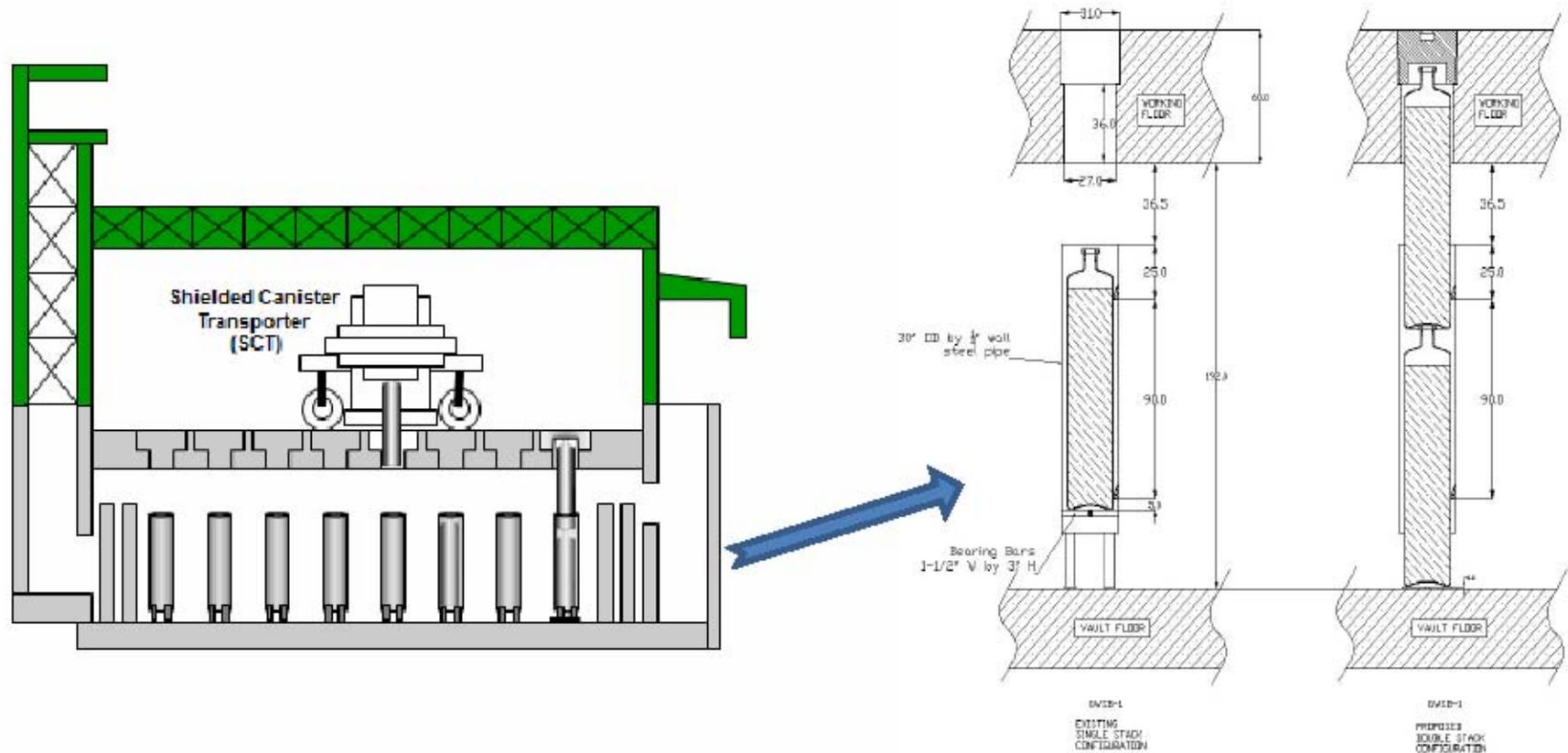


**Savannah River
National Laboratory™**

OPERATED BY SAVANNAH RIVER NUCLEAR SOLUTIONS

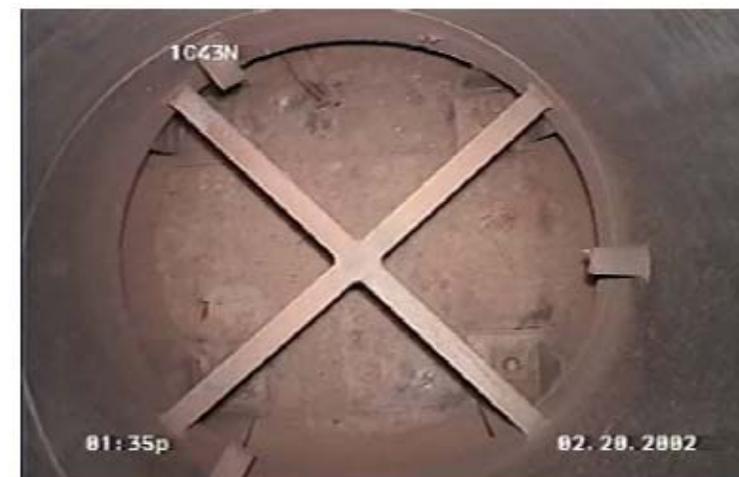
- **No 3rd Glass Waste Storage Building (GWSB) (~ \$130 million)**
 - Large upfront cost & future D&D cost
- **Glass Waste Storage Project (GWSP) Being Developed to Provide**
 - Supplemental Canister Storage in above ground storage containers similar to commercial SNF storage
 - Loading Station for SCT 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

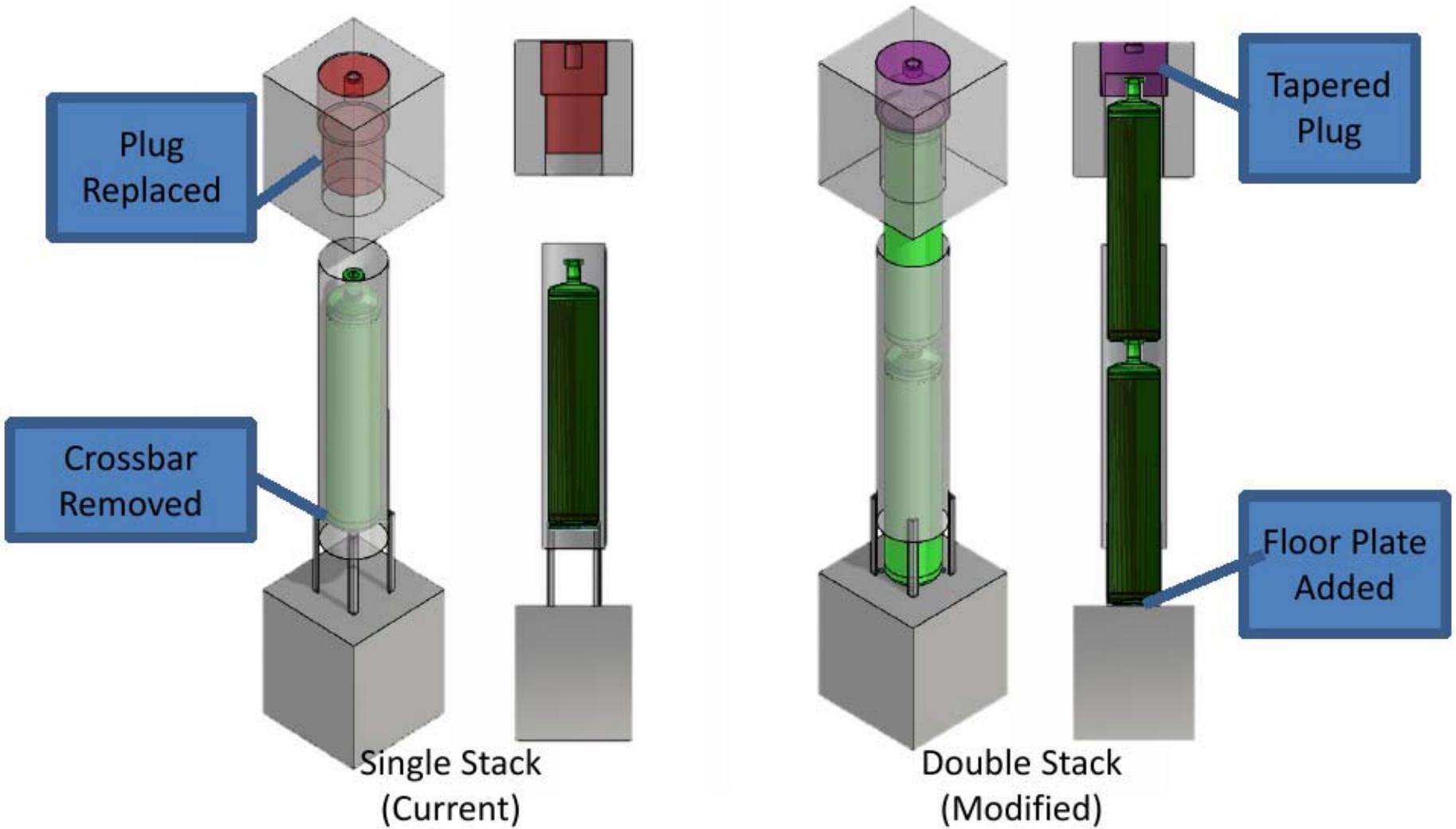
Interim Canister Storage - Double Stack (ICS-DS) Concept for GWSB1

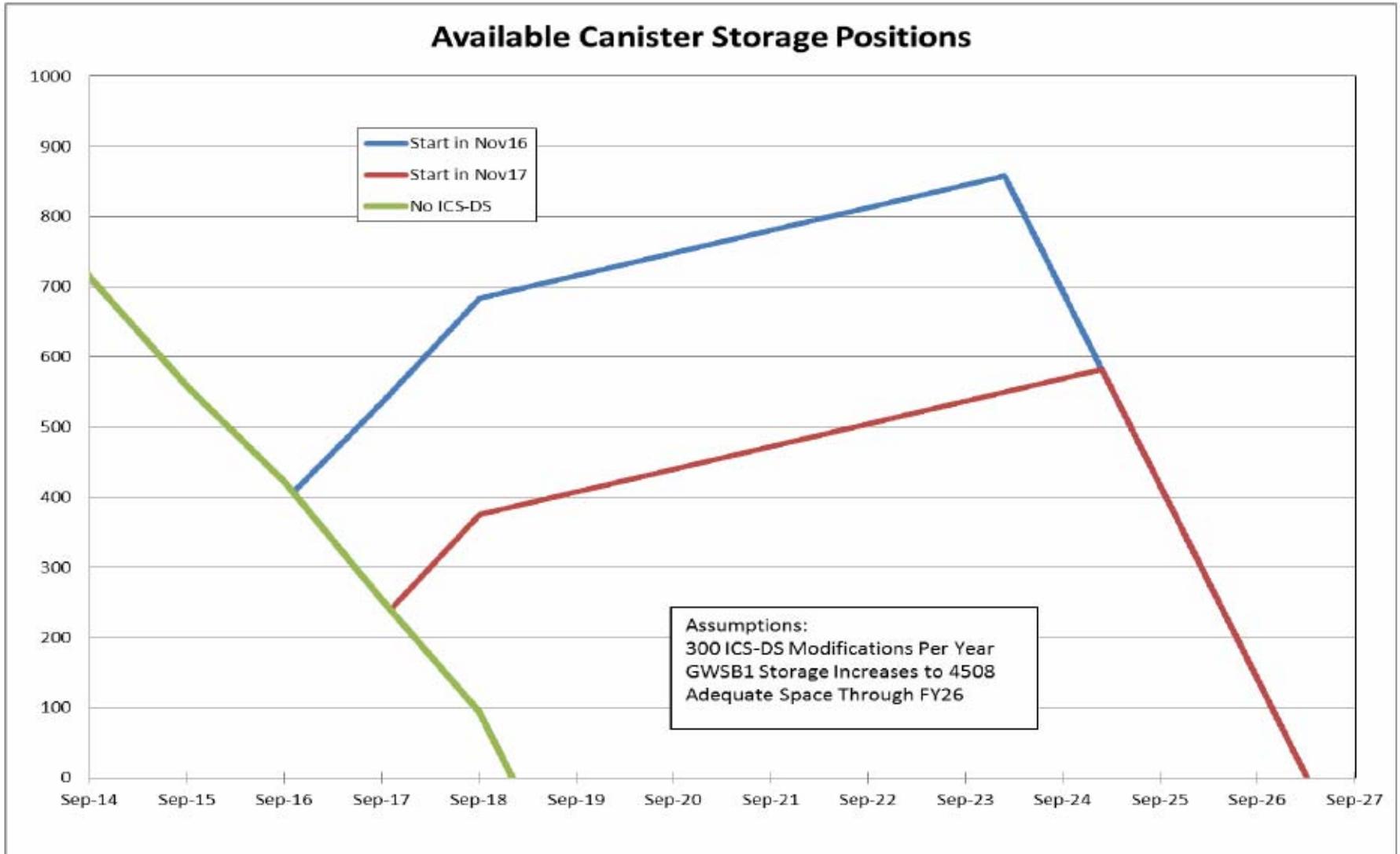


- Two canisters per location (vs. one can per location)
- Lower canister on support on vault floor (vs. cross bar support 3' off floor)
- Upper canister placed directly on top of lower canister
- Upper canister extends into operating deck floor, but remains below grade
- Shield plug redesigned for equivalent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

- **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







- 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

- 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