Presentation to the SRS
Citizens Advisory Board Waste Management Committee

Alternative Storage of Vitrified Waste Canisters:
Canister Interim Storage Project (CISP)

June 12, 2012

Jean M. Ridley, P.E.
Federal Project Director
DOE-SR/AMWDP
**Acronyms**

- **CISP** – Canister Interim Storage Project
- **CISC** – Canister Interim Storage Container
- **CISCC** – Canister Interim Storage Container Carrier
- **CTS** – Canister Transfer Station
- **DWPF** – Defense Waste Processing Facility
- **GWSB** – Glass Waste Storage Building
- **SCT** - Shielded Canister Transporter
- **SRS** – Savannah River Site
Purpose

- Discuss storage of vitrified high level waste canisters produced by the Defense Waste Processing Facility (DWPF)
- Discuss the most promising storage alternative to a Glass Waste Storage Building
Background

- Additional storage for vitrified high level waste canisters is needed by December 2016.

- A 3rd Glass Waste Storage Building (GWSB #3) has high upfront costs:
  
  Total Project Cost Range:
  
  $96 - $138 Million

- SRS pursuing a lower cost alternative - impacts to the public and environment are less than or equal to that of existing GWSBs.
Alternatives Analysis

Alternatives Analysis was conducted:
- GWSB #3 with an option to increase capacity to 3,000 canisters
- Above grade cask storage
- Additional options

Final Report issued January 17, 2012
- “SRS Dry Cask” Alternative selected for further development
- Based on commercial spent nuclear fuel dry storage concept
Alternatives Analysis – Up Front Cost Comparison

- Cask Options include: vertical or horizontal w/ shielding only, licensable, or NRC licensed
- Hanford Open Rack – underground open vault – cans stacked 2 high
- GWSB – underground concrete vault with individual canister supports
Alternatives Analysis – Life Cycle Comparison
SRS Storage Alternative - Development/Decision

- Titled: Canister Interim Storage Project (CISP)

- Conceptual Design Prepared - Feb – May 2012
  - Define scope and prepare conceptual design drawings (~5% of total design)
  - Perform risk assessment
  - Prepare a preliminary hazards assessment
  - Prepare schedule and cost estimates
  - Reduces risk by supporting more accurate cost estimates for all project scope
Canister Interim Storage Project

- Use existing Shielded Canister Transporter (SCT)
- Remove ~ 3000 lowest radiological dose canisters from GWSB #1 and #2
**CISC - Canister Interim Storage Container**

- Concrete-reinforced with 30” wall x 12’ diameter x 15.5’ high
- 106 tons empty; 126 tons w/7 canisters
- Safety: Preliminary analysis indicates mass, low center of gravity, and height-to-diameter ratio, CISC will not tip during high winds or a tornado and cannot be significantly damaged by missiles. Seismically safe configuration.
- Not licensed for shipment
CISP – Canister Transfer Station & Carrier

- Shielded Canister Transporter (SCT) will remove canister from GWSB and transport canister to Canister Transfer Station (CTS)
- SCT will place 7 canisters into the container in the CTS
- Carrier will move container to storage pad
Proposed CISP Site Plan

- Reinforced concrete pad 18” thick x 350’ x 350’ for 430 containers
- Canister Transfer Station (CTS)
Alternative Storage of Vitrified Waste - Conclusion

- DOE Reviewed Multiple Alternatives for Storage
  - Upfront costs of GWSB #3 are not supported by out year budget projections
  - Other safe storage options provide opportunity for improved cash flow and lower overall costs
  - Above ground storage option developed – Canister Interim Storage Project (CISP)

- Next step – Selection of Preferred Alternative

- Projected path forward:
  - FY 13 – Design Start
  - FY 14 – Long-Lead Procurement Start
  - FY 15 – Construction Start
  - FY 16 - Ready for Operations