



U.S. DEPARTMENT OF
ENERGY



*Presentation to the SRS
Citizens Advisory Board Waste Management Committee*

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

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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



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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



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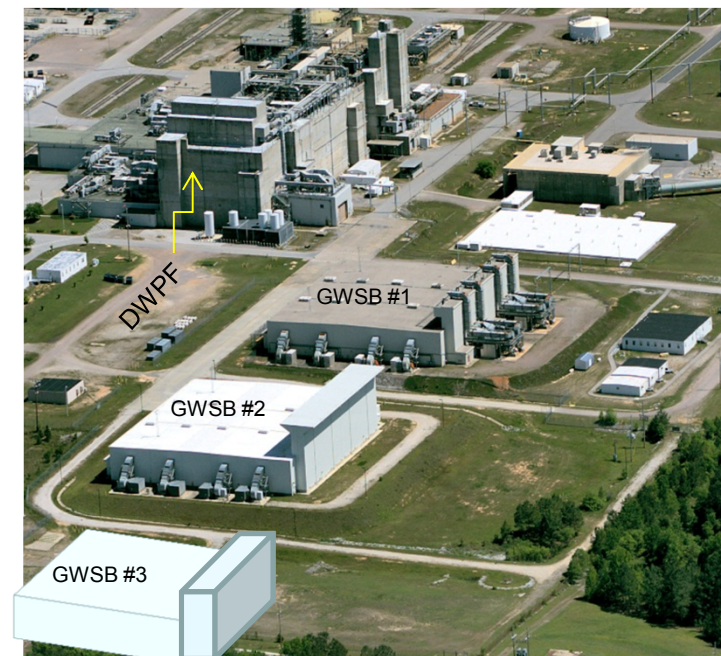
Background

- 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.



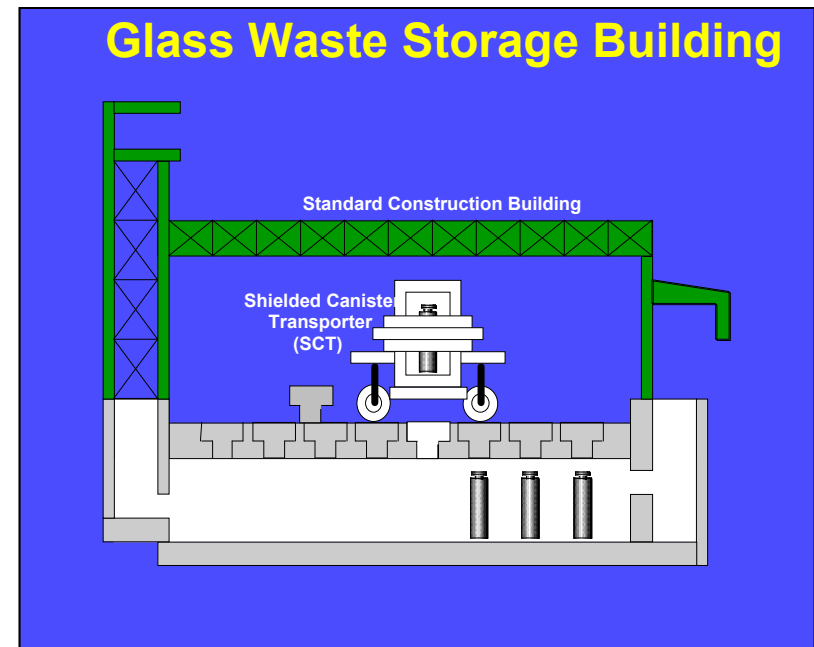
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Alternatives Analysis

- 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

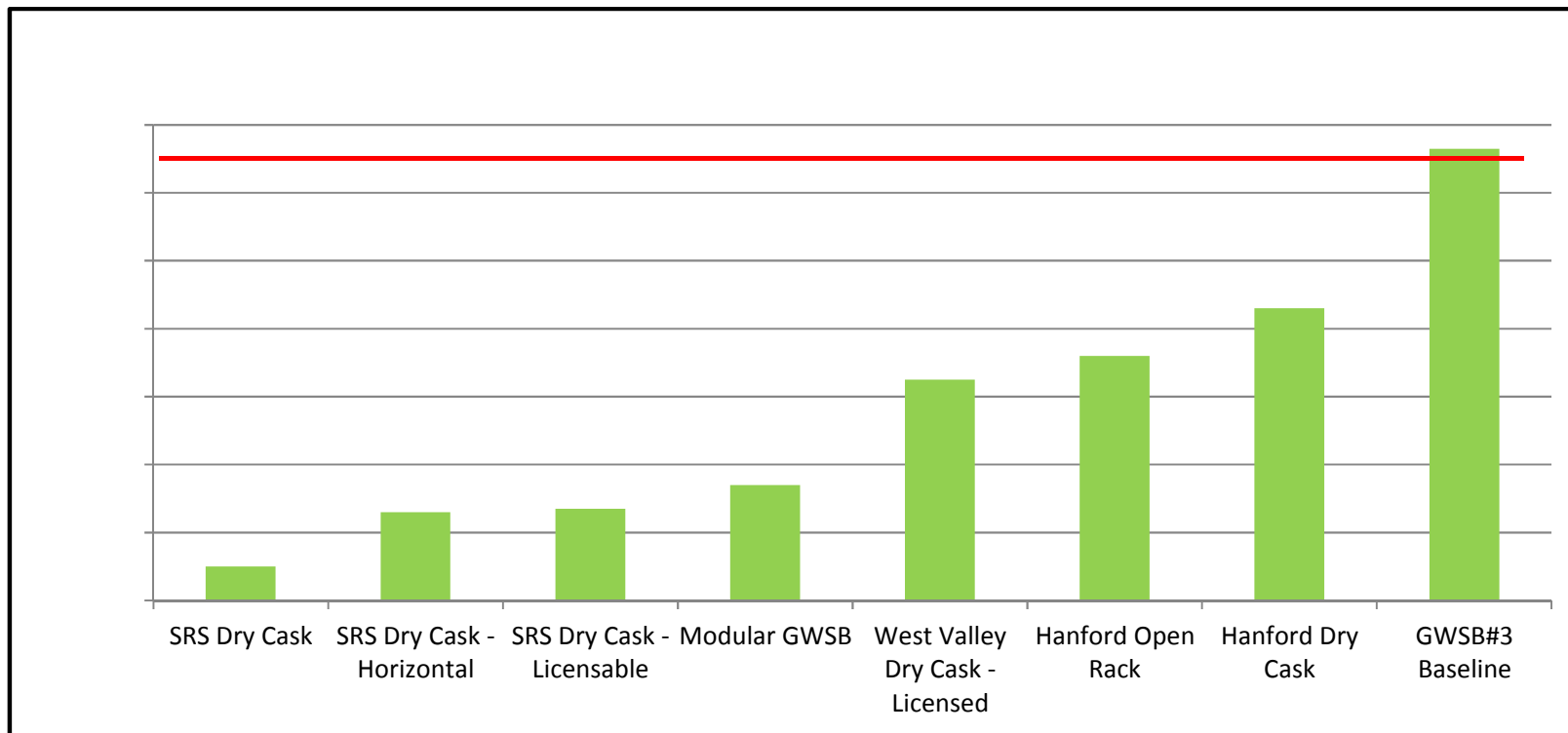


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Alternatives Analysis – Up Front Cost Comparison



- **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**

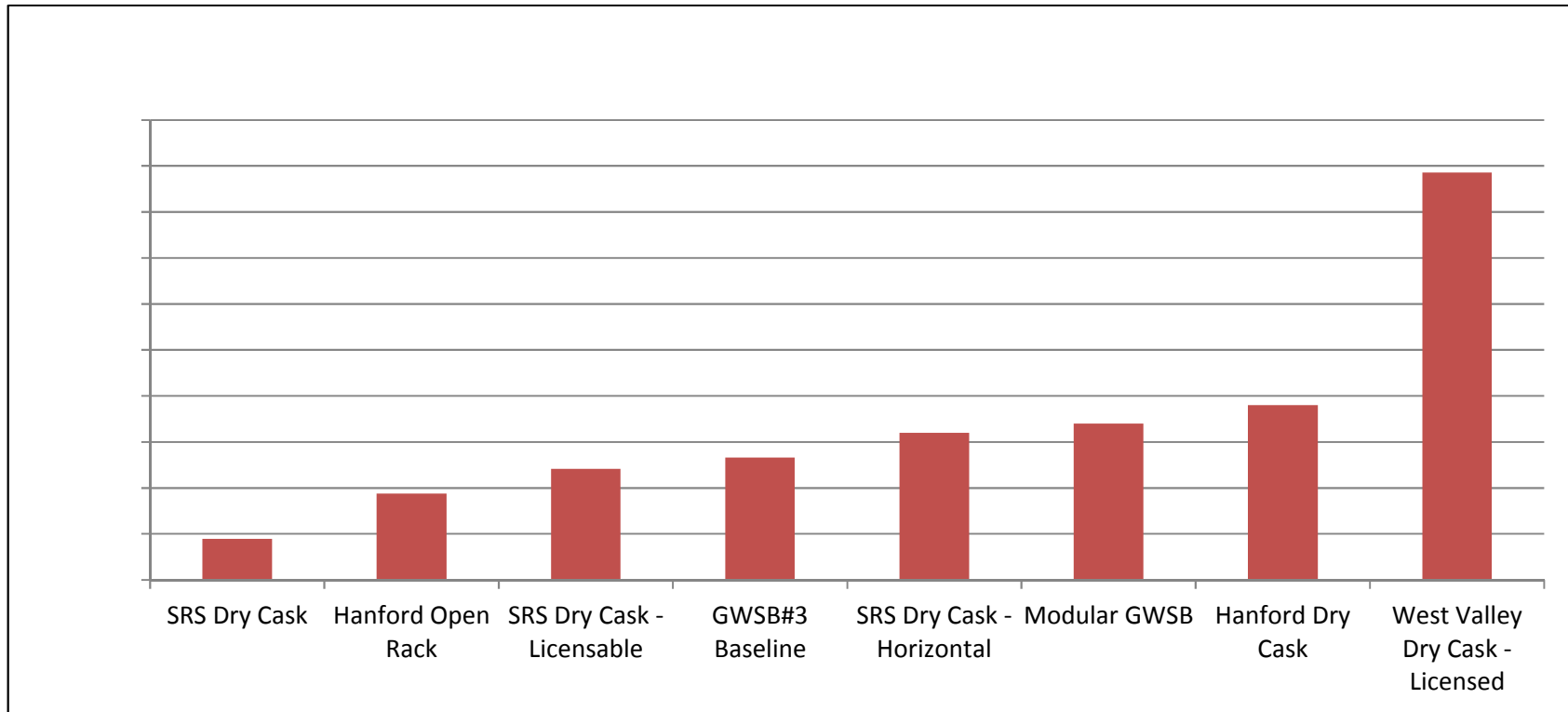


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Alternatives Analysis – Life Cycle Comparison



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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**



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Canister Interim Storage Project

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



GWSB #1



Shielded Canister Transporter



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CLSC - 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, CLSC will not tip during high winds or a tornado and cannot be significantly damaged by missiles. Seismically safe configuration.
- Not licensed for shipment

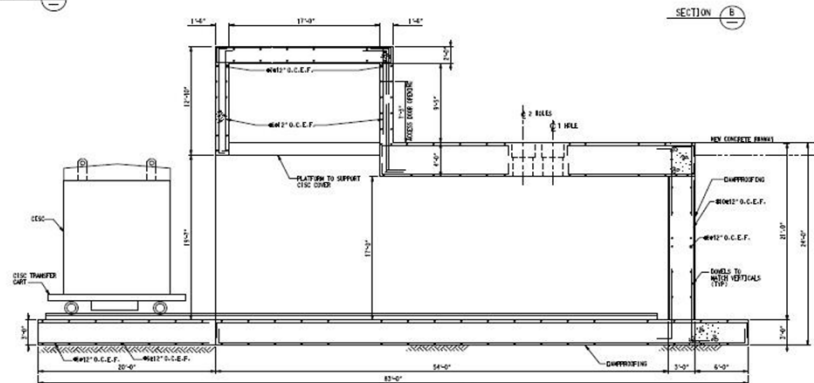


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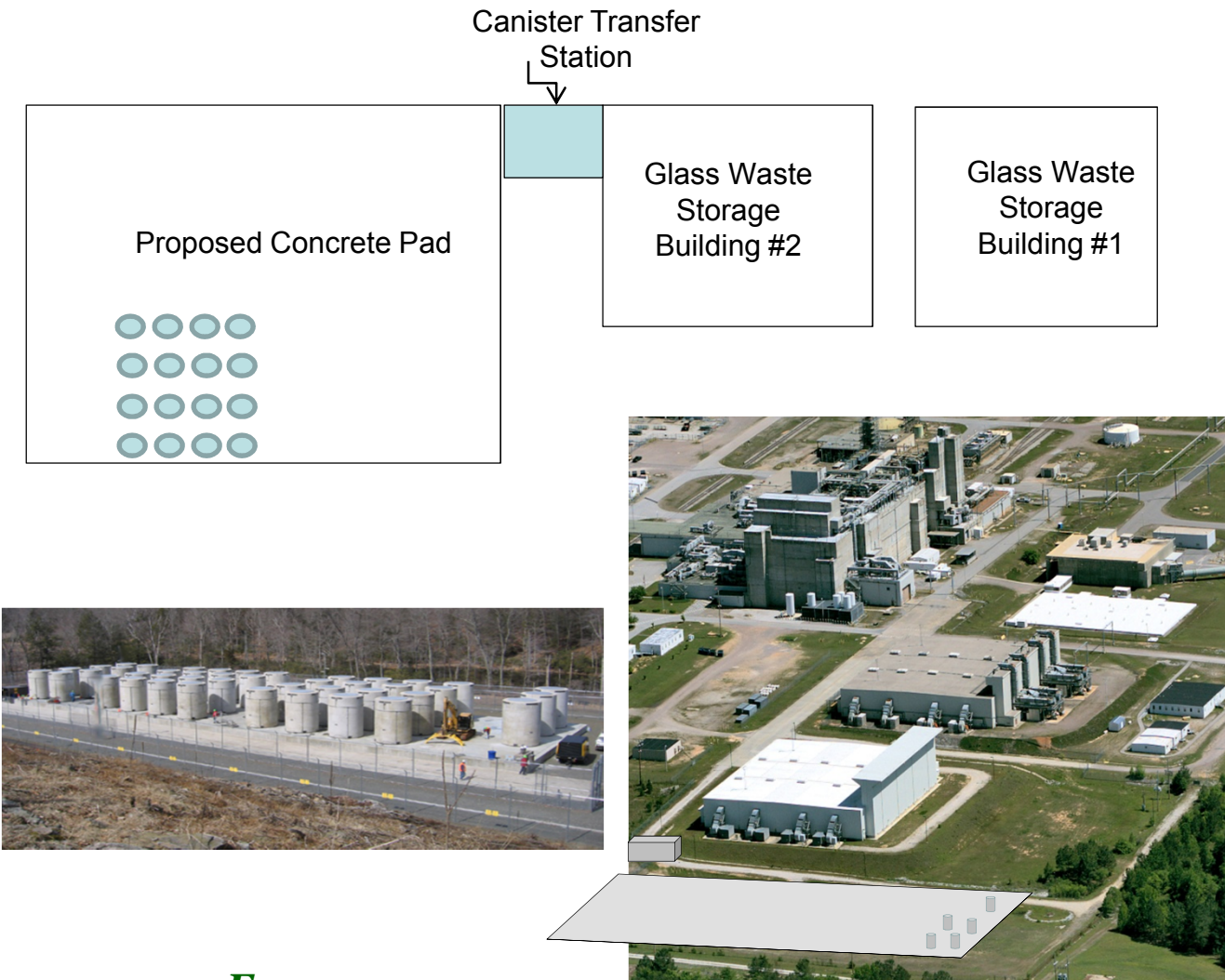
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- **Shielded Canister Transporter (SCT) will remove canister from GWSB and transport canister to Canister Transfer Station (CTS)**
- **SCT will place 7 canisters into the container in the CTS**
- **Carrier will move container to storage pad**



Proposed CLSP Site Plan

- Reinforced concrete pad 18" thick x 350' x 350' for 430 containers
- Canister Transfer Station (CTS)



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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



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