



General Accounting Office's Review of Savannah River Site's Processing of Nuclear Materials

Allen Gunter, DOE-SR
September 23, 2008





Purpose

- Present an overview of the methodology, results, and recommendations from the GAO review of nuclear material processing, H Canyon/HB-Line, at the Savannah River Site.





Background

- H Canyon began operations in 1955.
- Processed nuclear materials for nuclear weapons and nuclear energy.
- Previously, DOE planned to shutdown H Canyon/HB-Line in 2007.
- Then in, August 2006, Deputy Secretary approved extending H Canyon/HB-Line operations until 2019.





Why the Review was Performed?

- Subcommittee on Energy and Water Development Committee on Appropriation requested the GAO to perform the review to include:
 - Types of material to be processed in H Canyon/HB-Line and associated costs.
 - Waste generation and whether SRS facilities can process and disposition this waste.
 - Compliance with safety and environment requirements.





Methodology

- Conducted from October 2007 thru July 2008.
- Reviewed DOE's nuclear materials disposition plans.
- Reviewed DOE's project management guidance.
 - How to estimate costs
 - Determine milestones
 - Monitor performance
- Interviewed:
 - EM personnel
 - NNSA personnel
 - IG personnel
 - Two persons that performed independent reviews





Methodology (cont)

- Reviewed Waste Management plans and Risk Management plans.
- Reviewed DOE Business Plans.
- Reviewed integrated project management documents that outline the approach to meet H Canyon/HB-Line processing and waste management goals.
- Reviewed DNFSB reports.
- Toured H Canyon/HB-Line and Waste Management facilities.





Results

- GAO identified no safety concerns with operating H Canyon/HB-Line through 2019, provided DOE invests in the planned infrastructure upgrades.
- DOE's plan for processing these materials has several benefits:
 - Decreases the amount of SNF to be disposed of in the geological repository.
 - Downblends HEU to LEU, which is not weapons usable, but can be used in commercial reactors.
 - Provides revenue to the Department of Treasury from the sale of LEU.
- GAO identified several concerns:
 - DOE has not included all associated cost with storing and treating waste generated in H Canyon/HB-Line.
 - Additional nuclear materials that may be suitable for processing in H Canyon/HB-Line.
 - Additional waste from H Canyon/HB-Line cannot be received by SRS Liquid Waste processes without critical enhancements listed below:
 - Interim processes (DDA, ARP, and MCU)
 - SWPF
 - Continued delays in upgrades to H Canyon/HB-Line safety documentation





Recommendations

- Rec. 1: Ensure all material requiring H Canyon/HB-Line processing are identified.
- DOE Response:
 - NMDCCC forum provides cross-cutting nuclear materials disposition and consolidation planning.
 - Close coordination within DOE and utilizing DOE Order 413.3 will ensure future decisions about adding additional materials beyond the EU Disposition project to H Canyon/HB-Line will be coordinated to minimize impact to H Canyon/HB-Line disposition schedule.





Recommendations (cont)

- Rec. 2: Develop a comprehensive estimate for operating H Canyon including all waste storage and disposition costs.
- DOE Response:
 - EM staff have developed a comprehensive cost estimate for completing the H Canyon/HB-Line mission, including cost for storing and dispositioning the resulting wastes.





Recommendations (cont)

- Rec. 3: Direct SRS develop a plan to ensure adequate personnel are available to complete required safety analysis in a timely manner.
- DOE Response:
 - Directed the SRS contractor, on July 2, 2008, to upgrade H Canyon/HB-Line safety analysis to be consistent with DOE-STD-3009 format and content to support H Canyon operating schedule
 - EM-60, Deputy Assistant Secretary for Safety Management and Operations, will follow this progress in the preparation, review, and approval of the safety documentation upgrade to ensure completion to support SNF processing in FY2010.





Conclusion

- H Canyon can be operated safely through 2019 to disposition Al-clad SNF, HEU, and plutonium.
- SRS has, nor will not, process any materials without adequate safety basis.
- SRS has made progress on upgrading H Canyon/HB-Line safety documentation.
- EM has updated the cost estimate for dispositioning nuclear materials through H Canyon/HB-Line to include cost for waste storage and disposition.
- H Canyon has completed initiatives to minimize waste generation.





Acronyms

- AL-Clad – Aluminum Clad
- ARP – Actinide Removal Process
- CAB - Citizens Advisory Board
- DDA – Deliquification, Dissolution, and Adjustment
- DNFSB – Defense Nuclear Facilities Safety Board
- DOE – Department of Energy
- EM – Office of Environmental Management
- EU – Enriched Uranium
- GAO – General Accounting Office
- HEU – Highly Enriched Uranium
- IG – Office of Inspector General
- LEU – Low Enriched Uranium
- MCU – Modular Caustic-Side Solvent Extraction Cycle
- NMDCCC – Nuclear Materials Disposition Consolidation Coordination Committee
- NNSA – National Nuclear Security Administration
- SNF – Spent Nuclear Fuel
- SRS – Savannah River Site
- STD- Standard
- SWPF – Salt Waste Processing Facility

