



U.S. DEPARTMENT OF
ENERGY

Savannah River Site

Savannah River Site Citizens Advisory Board Waste Management Committee

PUREX Waste Disposition Update

Presentation By

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June 9, 2009



A M E R I C A N R E C O V E R Y A N D R E I N V E S T M E N T A C T

ARRA-FY09-001-(#)



Acronyms

- **AG** – Attorney General
- **CIF** - Consolidated Incineration Facility
- **DOE** - Department of Energy
- **EPA** – Environmental Protection Agency
- **ETF** – Effluent Treatment Facility
- **m³** - Cubic meters
- **PUREX** - Plutonium Uranium Extraction Process
- **RCRA** - Resource Conservation and Recovery Act
- **NTS** – Nevada Test Site
- **SRNS** – Savannah River Nuclear Solutions
- **SRS** - Savannah River Site





Purpose

Update the CAB on PUREX solvent treatment and disposal project.

Funding

Source: American Recovery and Reinvestment Act

Scope: Ship 129 boxes (21 shipments)

Cost: \$170,000 - \$210,000





PUREX Waste Types

Legacy PUREX Waste

- Aqueous PUREX Waste
 - Non-organic liquid from canyon washing operations and old solvent tank closure in E-Area
 - Volume: ~12,500 gallons
 - Classification: Low-level Waste
- Organic PUREX Waste
 - Actual solvent liquid: Tributyl phosphate/n-paraffin
 - Volume: ~ 25,000 gallons
 - Classification: Mixed Low-level Waste

F-Canyon PUREX Waste

- Additional solvent waste generated from F-Canyon deactivation in 2004
 - Volume: ~60,000 gallons
 - Classification: Low-level Waste





PUREX Waste Treatment History

- Disposition path for PUREX waste was thermal treatment at the Consolidated Incineration facility (CIF).
- CIF suspended operation in 2000; alternative treatment needed for PUREX waste.
- CIF Focus Group and Savannah River Site pursued optional alternatives.
- Systems Engineering evaluation identified alternative treatments to CIF for both aqueous and organic PUREX.





PUREX Waste Treatments

- Legacy Aqueous PUREX
 - Effluent Treatment Facility (ETF)
 - **Completed March 2004**
- Legacy Organic PUREX
 - Commercial solidification/macroencapsulation
 - **Completed January 2009**
- F-Canyon PUREX Waste
 - Commercial solidification
 - **Completed April 2007**





PUREX Waste Disposal

- Nevada's Attorney General (AG) protested PUREX disposal at the Nevada Test Site (NTS) in a December 2008 letter to Secretary of Energy.



PUREX in N-Area Storage

- Treated legacy organic PUREX waste is in interim storage at SRS N-Area RCRA permitted facility.





PUREX Waste Disposal (continued)

- April 2009 letter from Nevada AG to Acting Assistant Secretary for Environmental Management allowed for resumption of shipments.
- Shipments to NTS for disposal will resume no later than early July, completing in September 2009.
- Allows for de-inventory of N-Area hazardous/mixed low-level waste facility in support of the SR Recovery Act footprint reduction initiative.





Summary and Path Forward

- All PUREX solvent waste has been successfully treated.
- Treated material is currently being stored at SRS in a permitted facility.
- Issues with the State of Nevada over disposal at NTS have been resolved.
- A ten week shipping campaign to the NTS is scheduled to begin no later than early July 2009; thereby, completing disposition of all PUREX waste currently in inventory.

