



U.S. DEPARTMENT OF  
**ENERGY**

**Presentation  
to the  
Savannah River Site Citizens Advisory Board  
  
Update on H-Canyon and HB-Line**

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**EM** *Environmental Management*  
safety ♦ performance ♦ cleanup ♦ closure

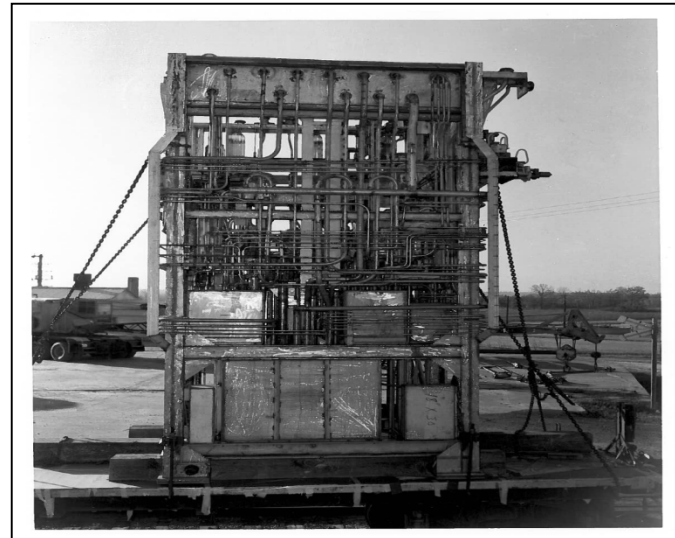
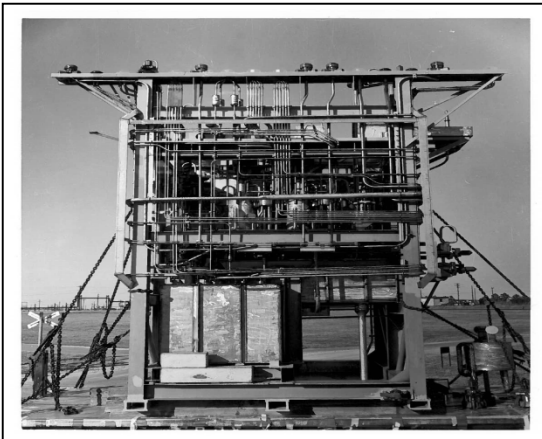
## *Current and Future (FY11 & FY12) Status of H-Canyon*

- **H-Canyon will continue traditional operations in FY11 and into FY12**
  - **Continue dissolving and blending down Highly Enriched Uranium (HEU) to meet the current commitments to the Tennessee Valley Authority – estimated completion date (ECD) September 2011**
  - **Continue shipping Low Enriched Uranium offsite to Nuclear Fuel Services – ECD December 2011**
  - **Continue to receive and disposition waste from SRNL and Analytical Laboratories (H Canyon removes the organics, adds a neutron poison, neutralizes the acidic solution, and transfers the solutions to the liquid waste system) – Ongoing**
  - **Continue to remediate legacy TRU waste**



## *Future (FY12 & Beyond) Status of H-Canyon*

- **H-Canyon will transition from traditional operations to new mission operations in FY12**
  - **Ready to begin Used Nuclear Fuel processing**
    - Continue Operator Proficiency Capabilities
    - Continue to maintain all safety systems operable
    - Awaiting NEPA (Supplemental Analysis and Amended Record of Decision)
    - Awaiting Blue Ribbon Commission's recommendation concerning fuel processing
    - Sensitivities with PUREX processing
  - **Partner with Office of Nuclear Energy and National Nuclear Security Administration on new missions (Slide 6)**
  - **Will begin flushing unit operations to improve safety posture as new missions are under development**



**Frames Modular Unit**

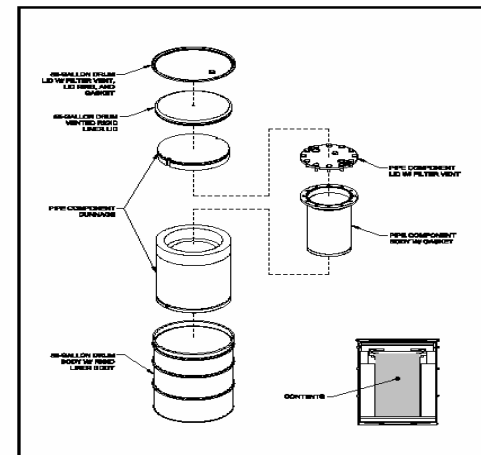


## *Current and Future (FY11 & FY12) Status of HB-Line*

- **HB-Line is preparing to begin dispositioning non-MOXable plutonium (Pu) to the Waste Isolation Pilot Plant (WIPP)**
  - **Continue flushing unit operations to improve safety posture of facility – Complete**
  - **Begin Initial Campaign (one glovebox) dry blending and repackaging non-MOXable Pu – October 2011**
    - Blend the plutonium oxide to less than 10% plutonium
    - Oxidize plutonium metal as required
    - Package into Pipe-Overpack Containers
    - Ship to E Area for WIPP certification and loading into TRUPAC II container
    - Expect to prepare 2 shipments this fiscal year
    - Interim Action (NEPA) has been approved to allow disposition up to ~85kgs 3013 surveillance material



**HB-Line Gloveboxes**



**Pipe Overpack Containers**





## *Current and Future (FY11 & FY12) Status of HB-Line*

- **Expand Pu-to-WIPP campaign to three glovebox lines**
  - **The Plutonium Disposition Supplemental Environmental Impact Statement is under development and required to support remainder of campaign**
- **Continue demonstration of Vacuum Salt Distillation on non-Moxable Pu to transform it as potential feed to MOX**



**TRUPACT II Shipment**



# *H-Area Capabilities*

## **ENVIRONMENTAL STEWARDSHIP**

1. **Disposition of legacy Transuranic (TRU) waste through H-Canyon**
  - Large Steel Boxes, etc.
2. **Disposition Non-MOXable Pu to WIPP via HB-Line**
  - Up to three dedicated lines for increased throughput
3. **Disposition of F/H Lab & SRNL sample returns**
  - Liquids through H-Canyon
  - Pu oxide through HB-Line
4. **Disposition HEU aluminum-clad fuel**

## **NATIONAL SECURITY**

1. **Disposition excess HEU/Pu pit materials**
  - Provides Pu for MOX feed and uranium for HEU blend-down program with TVA
2. **Recovery of special nuclear materials, including Americium-241**
3. **Test facility for Next Generation Safeguards Initiative (NGSI) equipment**
  - Includes mock-up capability for process lines, tanks and containers mimicking reprocessing facility operations
4. **Blend down HEU from aluminum-clad fuel to LEU**

## **CLEAN ENERGY**

1. **Utilize H-Canyon as robust and flexible platform for advanced fuel reprocessing R&D**
2. **Utilize vacuum salt distillation (VSD) technology to purify non-MOXable Pu into MOX feed**
3. **Blend HEU to LEU providing fuel for electrical power generation in commercial reactors**
4. **Purification of Pu-238 to support NASA Outer Planet Flagship Mission**



## *Summary*

- **H-Canyon will continue traditional operations in FY11 and into FY12**
- **With new partnerships, H-Canyon will transition from traditional operations to new mission operations in FY12**
- **HB-Line is preparing to begin dispositioning non-MOXable Pu to WIPP**
- **Will ensure all nuclear materials are safely and securely stored during this transition period**

