



U.S. DEPARTMENT OF
ENERGY

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Update on H-Canyon

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

Current Status of H Canyon/HB-Line

- **The dissolution and processing of highly enriched uranium (HEU) materials to meet the current HEU blend down commitments to Tennessee Valley Authority (TVA) will be completed in September 2011**
- **HB-Line is preparing to begin dispositioning non-MOXable plutonium (Pu) to the Waste Isolation Pilot Plant (WIPP)**
- **Safety basis to support processing of Used Nuclear Fuel (UNF) has been completed and approved**
- **H Canyon has completed revising all required procedures, updating operator training, and a readiness assessment to support UNF processing**
- **The Supplemental Analysis and Amended Record of Decision to support processing UNF must be approved**
- **DOE is awaiting the Blue Ribbon Commission's recommendation concerning fuel processing and the prohibition of a new start during a Continuing Budget Resolution**



FY2011 and FY2012 Operational Activities – H Area Facilities

- **June 2011- Complete flushing of the HB-Line facility to improve the safety posture of the facility**
- **August 2011 – Initiate disposition of non-MOXable plutonium by dry blending in existing HB-Line gloveboxes, packaging into pipe-overpack containers, and shipping to WIPP in TRUPAC IIs**
- **September 2011 – Savannah River will complete the dissolution and processing of highly enriched uranium (HEU) materials to meet the current HEU blend down commitments to Tennessee Valley Authority (TVA)**
- **December 2011 – Complete shipping the low enriched uranium solutions to Nuclear Fuels Services to meet the current TVA commitments**
- **FY2011 and FY2012 – Continue disposition of the SRNL and F Area Lab returns to the SRS liquid waste system (H Canyon removes the organics, adds a neutron poison, neutralizes the acidic solution, and transfers the solutions to the liquid waste system.**
- **FY2011 and FY2012 – Continue demonstration of vacuum salt distillation on non-MOXable plutonium to transform it as potential feed to MOX**
- **FY2012 – Continue the disposition of the remainder of the Non-MOXable plutonium from the initial campaign**



Disposition Non-MOXable Pu to WIPP

- **Evaluated utilizing HB-Line**
 - Utilize up to three of the existing HB-Line glovebox lines and ventilation system
 - 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
- **Initial Campaign in HB-Line**
 - Utilize one of three gloveboxes
 - Expect to prepare 2 shipments this fiscal year
 - Interim Action has been approved to allow disposition up to ~85kgs 3013 surveillance material
 - The Plutonium Disposition Supplemental Environmental Impact Statement is under development and required to support remainder of campaign



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 E Area material through HB-Line or H Canyon**
4. **Disposition of F/H Lab & SRNL sample returns**
 - Liquids through H-Canyon
 - Pu oxide through HB-Line
5. **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

- **High Level Waste Program is the site's highest disposition priority**
- **H Canyon/HB-Line are National Assets**
- **While not performing traditional missions, H Canyon/HB-Line will transition to embark on new missions of national importance**
- **Will ensure all nuclear materials are safely and securely stored during this transition period.**

