CAB AGENCY UPDATE

SAVANNAH RIVER SITE

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DOE-Savannah River Operations Office

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Citizens Advisory Board
July 23, 2013
SRS Size Comparison

**Structural Steel**
- 27,000 tons (a train eight miles long)
- 118,000 tons (a train 30 miles long)

**Roads**
- 230 miles of new roads (including South Carolina’s first cloverleaf intersection)

**Concrete**
- 1.5 million cubic yards (a highway 6 inches thick and 20 feet wide from Atlanta to Philadelphia)

**Railroads**
- 63 miles of permanent new track
Integrated Workforce

- U.S. Department of Energy - Savannah River Operations Office (DOE-SR)
- National Nuclear Security Administration (NNSA)
  - Savannah River Field Office
  - Office of Site Engineering and Construction Management
- U.S. Forest Service (USFS)
- Office of Inspector General (OIG)

Contractors
- Savannah River Nuclear Solutions (SRNS)
  - Management & Operations
  - Savannah River National Laboratory
- Savannah River Remediation (SRR)
  - Liquid Waste Operations
- Parsons (Salt Waste Processing Facility)
- Ameresco (Biomass Cogeneration Plant)
- WSI-SRS (Security)
- Shaw AREVA:
  - Mixed Oxide Fuel Fabrication Facility (MOX)
- University of Georgia
  - Savannah River Ecology Laboratory (SREL)

SRS Workforce = 12,131
-March 2013
Transuranic Waste Disposition

- Continue disposition of 12,000 cubic meters legacy transuranic (TRU) waste (1.2 million curies)
- Completed 1,536 TRU waste shipments to Waste Isolation Pilot Plant (WIPP), New Mexico
Tank Closures

- Closed 2 waste tanks under current regulatory regime in 2012, three months ahead of schedule Federal Facilities Agreement (FFA) commitment
  - Outstanding collaboration and integration with SC Department of Health and Environmental Control, Environmental Protection Agency Region IV, and Nuclear Regulatory Commission
  - Full compliance with FY 2005 NDAA Section 3116 process for Secretarial Waste Determinations

- Another 15 radioactive waste tanks in stages of being emptied and prepared for closure
Liquid Waste Disposition

- DWPF vitrified radioactive tank waste canister production
- **FY13 to date:** 118 canisters
- **Since 1996 startup:** 3,644 canisters
- **48% of sludge waste inventory immobilized**
Salt Waste Processing Facility

- Achieved 72% construction completion of Salt Waste Processing Facility (SWPF)

**SWPF Stats**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>~140,000 ft²</td>
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<tr>
<td>Basemat</td>
<td>8 ft. thick</td>
</tr>
<tr>
<td>Concrete</td>
<td>~40,000 yd³</td>
</tr>
<tr>
<td>Pipe</td>
<td>~23 miles</td>
</tr>
<tr>
<td>Rebar</td>
<td>~4,600 tons</td>
</tr>
<tr>
<td>Actuated Valves</td>
<td>~1,000</td>
</tr>
<tr>
<td>Manual Valves</td>
<td>~3,000</td>
</tr>
<tr>
<td>Instruments</td>
<td>~1,500</td>
</tr>
<tr>
<td>Tanks</td>
<td>85</td>
</tr>
<tr>
<td>Pumps</td>
<td>116</td>
</tr>
</tbody>
</table>

Record production milestone 771,500 gallons salt waste solutions processed through **interim salt disposition facilities**: Actinide Removal Process (ARP)/Modular Caustic Side Solvent Extraction Unit (MCU)

*3.5Mgal total since 2008 startup*
Soil, Groundwater and Associated Facilities

- Completed deactivation and decommissioning of 284 Site facilities (industrial and nuclear)
- Remediated and closed 399 of 515 waste units in compliance with FFA
- Met over 3,100 FFA & RCRA Permit commitments on or ahead of schedule

American Reinvestment and Recovery Act Footprint Reduction 2009-12

- Decommissioned 14 radioactively contaminated facilities (incl. 3 nuclear reactors) and 16 industrial facilities contaminated with hazardous materials
- Treated over 6.5 million gallons of radioactive and contaminated water
- Disposed of over 52,000 cubic yds. of debris and 90,000 cubic yds. of soils

SRS now 85% “clean”
The majority of SRS now meets industrial cleanup standards
Nuclear Materials Disposition

- Continued processing of vulnerable fuels through H-Canyon
- Completed last shipment of Low Enriched Uranium to Tennessee Valley Authority to meet fuel source contract commitments (enough to power all SC homes for 10 years)
- Down-blended and shipped non-Moxable plutonium to WIPP
- Developed Deactivation Plan for 235-F (Pu-238 production facility)
- Contract signed for receipt and processing/uranium recovery of Canadian liquids
Clean Energy Systems

- Completed 1st year operations of Biomass Cogeneration Facility
  - Reducing greenhouse gas emissions by more than 100,000 tons a year
  - Cutting energy costs with steam from renewable energy sources

Savannah River National Laboratory

- SRNL technical expertise, innovative technologies and applications deployed throughout the world
  - Nuclear Fuels Cycle Research & Development
  - Space Exploration
  - Hydrogen Production & Storage
  - Radiochemical Processing
  - Environmental Risk Reduction
  - Tritium Technology
  - National Security Threat Reduction
  - 10 U.S. patents in 2013
Waste Disposition and Risk Reduction

- Continue closure activities for Tanks 5 and 6
  - Grouting scheduled to start August 2013
- Continue construction of the Salt Waste Processing Facility
- Process 1 million gallons of salt tank waste
- Produce 100 canisters at Defense Waste Processing Facility
- Continue disposition of Site’s contact-handled legacy TRU waste (only 600 cubic meters remaining to be shipped)
- Meet all regulatory commitments
Nuclear Materials Disposition

Storage Facilities

- Continue safe receipt and storage of Foreign Research Reactor and Domestic Research Reactor used (spent) nuclear fuels (L Area)
- Continue safe receipt and storage of non-pit plutonium materials (K Area)
- Continue 235-F Facility Risk Reduction scope to meet Implementation Plan for DNFSB Recommendation 2012-1

H-Canyon

- Complete processing of vulnerable used nuclear fuel
- Continue preparations for the receipt of Canadian liquid HEU
- Continue shipment of non-Moxable plutonium to WIPP
- Continue partnership with NNSA to use H-Canyon and HB-Line to provide 3.7 metric tons of plutonium oxide through 2017
- Continue receipt of Global Threat Reduction Initiative plutonium from foreign countries
We Deliver

- Work collaboratively with regulators to meet commitments
- Execute all work safely
  Safety and Security begin with me.
- Make significant risk reductions
- SRS is investment worthy