Transuranic (TRU) Project Update

May 25, 2010

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Department of Energy
# Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ARRA</td>
<td>American Recovery and Reinvestment Act</td>
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<tr>
<td>CAB</td>
<td>Citizens Advisory Board</td>
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<tr>
<td>CH</td>
<td>Contact Handle</td>
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<tr>
<td>DOE</td>
<td>Department of Energy</td>
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<tr>
<td>FGE</td>
<td>Fissile Gram Equivalent</td>
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<tr>
<td>FY</td>
<td>Fiscal year</td>
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<tr>
<td>HA</td>
<td>High activity</td>
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<tr>
<td>NDA</td>
<td>Non-Destructive Assay</td>
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<tr>
<td>NDE</td>
<td>Non-Destructive Examination</td>
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<tr>
<td>NRC</td>
<td>Nuclear Regulatory Commission</td>
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<td>PEC</td>
<td>Plutonium Equivalent Concentration</td>
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<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
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<td>RH</td>
<td>Remote Handle</td>
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<td>SCDHEC</td>
<td>South Carolina Department of Health and Environmental Control</td>
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<td>SRS</td>
<td>Savannah River Site</td>
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<td>TRUPACT III</td>
<td>Transuranic waste shipping container III</td>
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<td>TRU</td>
<td>Transuranic</td>
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<tr>
<td>V&amp;P</td>
<td>Vent and Purge</td>
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<td>WIPP</td>
<td>Waste Isolation Pilot Plant</td>
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Agenda

- TRU Waste Inventory Overview
- Progress and Accomplishments
- TRU Metrics
- Safety Environment
- Challenges
- 200 Cubic Meters of Very Difficult Waste
- Summary
Overview Background

- Phase I (FY01 – 2Q, FY09):
  - CH-TRU Drums (~30,500 drums or ~ 6,000 m³)
  - Emptied 7 TRU Pads (Pads 7 -13)
  - Lessons learned incorporated into the Phase II Process

1st TRU Waste Shipment – May, 2001  
1,000th TRU Waste Shipment – June, 2009
Recent Accomplishments
February through April 2010

- **F Canyon**
  - Started Pad 1 drum remediation
  - Dismantled and removed old enclosure from truckwell
  - Restarted the F canyon warm crane

- **H Canyon**
  - Started box size reduction (Box #12)
  - Completed 11 large boxes (6 repackaging and 5 remediation)

- **E Area**
  - Completed 20 WIPP shipments for March and April
  - Progressing with final retrieval phase on TRU Pad 1
  - Start large box X-ray testing
  - Started box repackaging on Pad 6 on March 31
Overall TRU Waste Volume Disposed

Total Legacy TRU Program Waste Disposition
TRU Waste
Through April 30, 2010
Field Progress and Highlights
1st Year under ARRA

Pad 1 Culvert Excavation

Pad 1 Drum Mining

WIPP Shipment Inspection under “Big Top”

Mock Up Training for Drum Remediation
Overview Remaining Scope

- Phase II (3Q, FY09 – CY12):
  - Disposition of 5,000 m³ remaining legacy CH- and RH-TRU wastes with significantly higher levels of PEC and/or larger physical sizes including:
    - 1600 Special Case CH-TRU Drums
    - Pad 1 Drums and Boxes (300 cubic meters)
    - 4,300 Cubic Meters Non-Drum CH-TRU Containers
    - RH-TRU Containers
  - $400 Million Project
  - American Recovery and Reinvestment Act of 2009 Funded
  - December 2012 Completion Date
  - 200 m³ of very difficult waste planned post ARRA
ARRA – Ongoing/Enhanced Safety Focus

- **Mandatory Safety Training**
  - General Employee Training
  - Safety Culture Orientation
  - Hazards Recognition

- **Additional Project/Facility Requirements**
  - Rad Worker Training
  - Facility Orientation Training
  - Procedures Training
  - Mockup Training
  - Safety Basis Requirements Training
  - Local Safety Improvement Teams
  - BBS Program

- **Conduct of Operations Enhancement**
  - Mentor Program
  - HPI Tools
  - Daily Hot Wash
  - Housekeeping Routine

- ✓ ISMS
- ✓ Management Field Presence
- ✓ ESH&Q Functional Support
- ✓ Independent Oversight
- ✓ External Safety Assessment
- ✓ Safety Improvement Actions
Large Boxed Waste Challenges

Boxed TRU Waste on Pad 26
200 m³ of Very Difficult Waste

- High Gamma Emitting Wastes – NDA issues
  - Concrete casks from SRNL
  - Silver Saddles from F- & H-Canyons
- High Curie Content Wastes – over WIPP and/or NC limits
  - Mound and Los Alamos wastes on Pad 1
- Highly Contaminated Wastes – up to 400 million dpm alpha
  - Stainless steel boxes from H-Canyon Hot Sample Aisle
  - Robotic manipulators from 235-F
  - One-pack plywood boxes from H-area B-Line
- Waste with Integral Lead Shielding – NDA and NDE issues
  - Stainless steel boxes from H-Canyon Hot Sample Aisle
- Oversized RH Debris – size reduction needed
Summary

- Worker Safety Highest Priority
- 30,000 Drum Inventory Complete
- Multiple Size Reduction/Remediation Facilities Needed to Complete the Remaining Legacy Inventory
- Significant Technical Challenges Remain
- Progress to Date Is a Little Behind Plan