Presentation to the Savannah River Site
Citizens Advisory Board

Status of Depleted Uranium Shipments

November 17, 2009

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<table>
<thead>
<tr>
<th>Acronyms</th>
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<tbody>
<tr>
<td>ARRA – American Reinvestment &amp; Recovery Act</td>
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<tr>
<td>DOE – Department of Energy</td>
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<td>DOT – Department of Transportation</td>
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<td>DUO – Depleted Uranium Oxide</td>
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<tr>
<td>EM – DOE Office of Environmental Management</td>
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<td>FATS – F-Area Temporary Storage</td>
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<td>FY – Fiscal Year</td>
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<td>IP – Industrial Package</td>
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<td>LSA – Low Specific Activity</td>
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<td>NATS – N-Area Temporary Storage</td>
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<td>NRC – Nuclear Regulatory Commission</td>
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<td>NTS – Nevada Test Site</td>
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<td>NNSA – National Nuclear Security Administration</td>
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<td>ORNL – Oak Ridge National Laboratory</td>
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<td>RCRA – Resource Conservation and Recovery Act</td>
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<td>SRS – Savannah River Site</td>
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<td>WAC – Waste Acceptance Criteria</td>
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DUO Disposition Project Status

- Background
- Disposition paths
- Palletizing/loading operations
- Concerns of State of Utah
- ORNL shipments
- Summary
Background

- The nuclear weapons program left SRS with large inventories of DUO
- Originally ~35,800 drums DUO packaged in 55-gallon, carbon steel drums, including several thousand overpacked in 85-gallon drums
- Funded through ARRA
- Four successful disposal campaigns between FY03 and early FY09
- Currently final campaign is under way to dispose of the last 15,606 55-gallon drums (so far ~100 of these are overpacked)
DUO Characteristics

- DUO is low radiological hazard, DOT LSA 1
- Contains no RCRA constituents
- Heavy metal oxide health hazard
- Low level waste that meets WAC for both NTS and the Energy Solutions low level waste disposal facility in Clive, UT
Previous DUO Disposition Campaigns

Campaign 1 – 3,270 55-gal drums to UT FY03
Open-top gondola cars w/ "Superload" wrappers as container

Campaign 2 – 7,296
85-gal overpacked
IP-2 drums to UT
FY04-06, boxcars

Campaign 3 – 5,408
55-gal drums to UT
FY09, DOE-owned
lidded gondola cars
as IP-1 container

Campaign 4 – 4,015 55-gal
drums to NTS FY08-09 w/ modified cargo containers
DUO Disposition Paths

- Shipment by rail to Clive, UT for disposal (primary)
- Shipment by truck to NTS for disposal (alternate)
- Shipment by truck to ORNL for reuse
Rail shipments to Clive, UT

- F-Area inventory of 9,140 drums
  - 8,334 drums will ship by rail to Clive, UT for disposal
    - 5,408 drums will ship in first train expected to leave SRS in December 2009
    - Remaining 2,926 drums will ship in second train
- N-Area inventory of 6,466 drums
  - 2,482 drums will complete second train
  - Remaining 3,984 drums will ship in third train
  - Shipments are planned to be complete by late spring 2010
F-Area Layout

- Locomotive
- F-Area
  - Main storage & Palletizing
- FATS
  - Temporary storage of palletized drums
- Empty cars
- Cars being loaded
- Crane
- Lid laydown

Environmental Management

- Safety
- Performance
- Cleanup
- Closure
Drum Variations & Overpacking
F-Area Palletizing
F-Area Temporary Storage Fabrication
First Drums into FATS
Prepare Railcar
Lifting Pallets
Loading Railcar
N-Area Preparations

N-Area Temporary Storage under construction

N-Area storage facility
Reuse by ORNL

- 806 drums needed by ORNL for the U-233 Blend Down Project
- One of these drums shipped in September 2009 as a sample
- 805 will be shipped in IP-1 20-foot cargo containers by truck
- 35 trucks
- Will be completed after last train leaves SRS
Concerns Raised in the State of Utah

- Letter from State of Utah Congressman to Secretary of Energy dated September 16, 2009 requesting temporary suspension of SRS DUO shipments
- Concerns raised about disposal of large amounts of DU due to long term (U-238) decay over time with radon in-growth
- Under current regulations (10 CFR 61.55), DU is a Class A low level waste, but NRC rulemaking has begun to address concerns with disposal of significant quantities of DU
- Clive, UT facility is licensed for Class A wastes
- SRS DUO meets NRC definition of “Class A” low level waste and the Clive, UT, facility’s WAC
- New conditions to the Clive, UT license are currently out for public review and comment
- In October 2009, the Utah Radiation Control Board decided to add a license condition to the Clive, UT facility that would prevent the Clive, UT facility from disposing of DU until a new performance assessment is complete and approved
Alternate Disposition Path to NTS

- If shipments are interrupted to Clive, UT, shipments will be diverted to NTS using modified cargo containers similar to DUO shipments from R-Reactor from FY08/09

- Cost would increase up to 35%

- Schedule would increase by at least 12 months

- 144 railcars vs. 640 trucks
Summary

- Four successful previous DUO campaigns
- One final campaign of 15,606 drums will complete disposition of DUO from SRS
- Shipping most of inventory for disposal by rail to Clive, UT
- Shipping small quantity by truck for reuse to ORNL
- Concerns from State of Utah may delay disposition and increase cost
- SRS will continue to ensure safe and compliant packaging, transportation, and disposition of DUO
- We will keep the CAB advised of changes to the DUO Disposition Project