

Transuranic Waste Sub-Project Overview and Update



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TRU/Mixed TRU

Community Advisory Board Meeting

November 8, 2006

**U.S. Department of Energy Nevada Site Office
Environmental Management**

What is Transuranic Waste?

Transuranic (TRU) waste contains items contaminated by man-made radioactive elements heavier than uranium (atomic number 92) with half-lives greater than 20 years

A glovebox (interior seen here) is a large metal sealed box with Plexiglas windows and glove ports used to open, sort, and repackage the contents of drums without direct contact by workers – provides workers and the environment the protection from exposure to radioactive contaminants



Where is TRU Waste Disposed?

- The Waste Isolation Pilot Plant (WIPP) is the federally-operated facility near Carlsbad, NM where TRU waste is permanently disposed (opened March 1999)
- TRU waste must meet the WIPP Waste Acceptance Criteria prior to shipment and disposal
 - Characterization processes are used to verify that the waste conforms to the WIPP Waste Acceptance Criteria which includes identifying prohibited items (such as liquids)
 - TRU waste packages must fit within approved TRUPACT-II shipping containers in order to be transported to WIPP



Nevada Test Site TRU Project History

- Lawrence Livermore National Laboratory shipped approximately 2,000 TRU waste drums to the Nevada Test Site (NTS) for temporary storage between 1974 and 1990
 - Examples of items in the drums include laboratory equipment and protective clothing
- Small quantity of TRU waste generated by environmental restoration activities on the NTS and Tonopah Test Range
- The TRU waste sub-project was created to characterize, package, and ship TRU waste to the WIPP



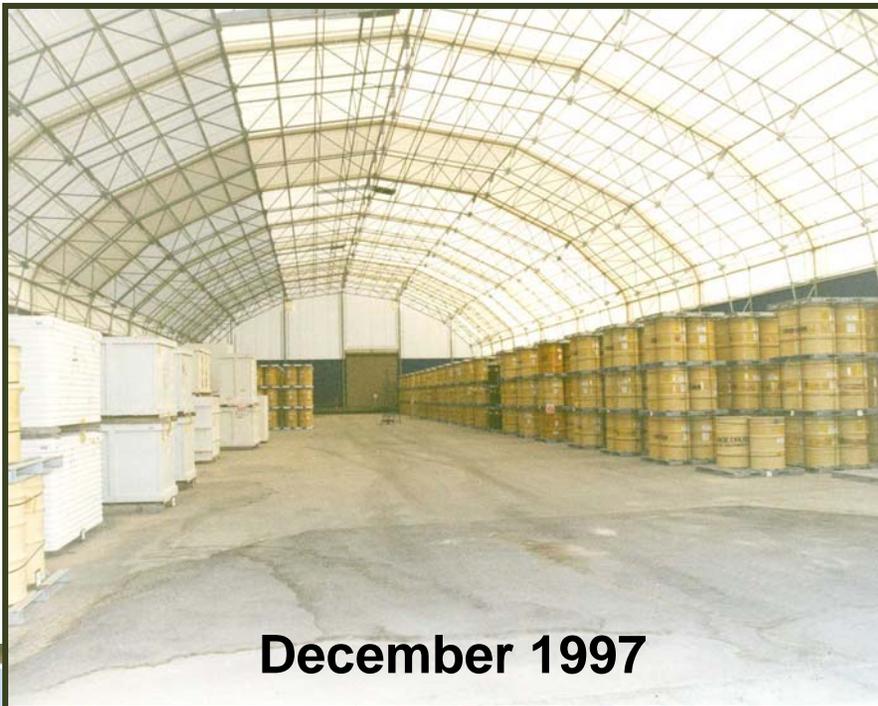
Original NTS TRU Waste Inventory

- 1,650 drums (ultimately repackaged into 2,011 drums as a result of characterization conducted at the NTS)
- 58 oversize boxes
- 2 spheres



NTS TRU Project Accomplishments

- Nevada Site Office completed 48 shipments (1,860 drums) from the NTS to WIPP between January 2004 and November 2005



NTS TRU Project Accomplishments

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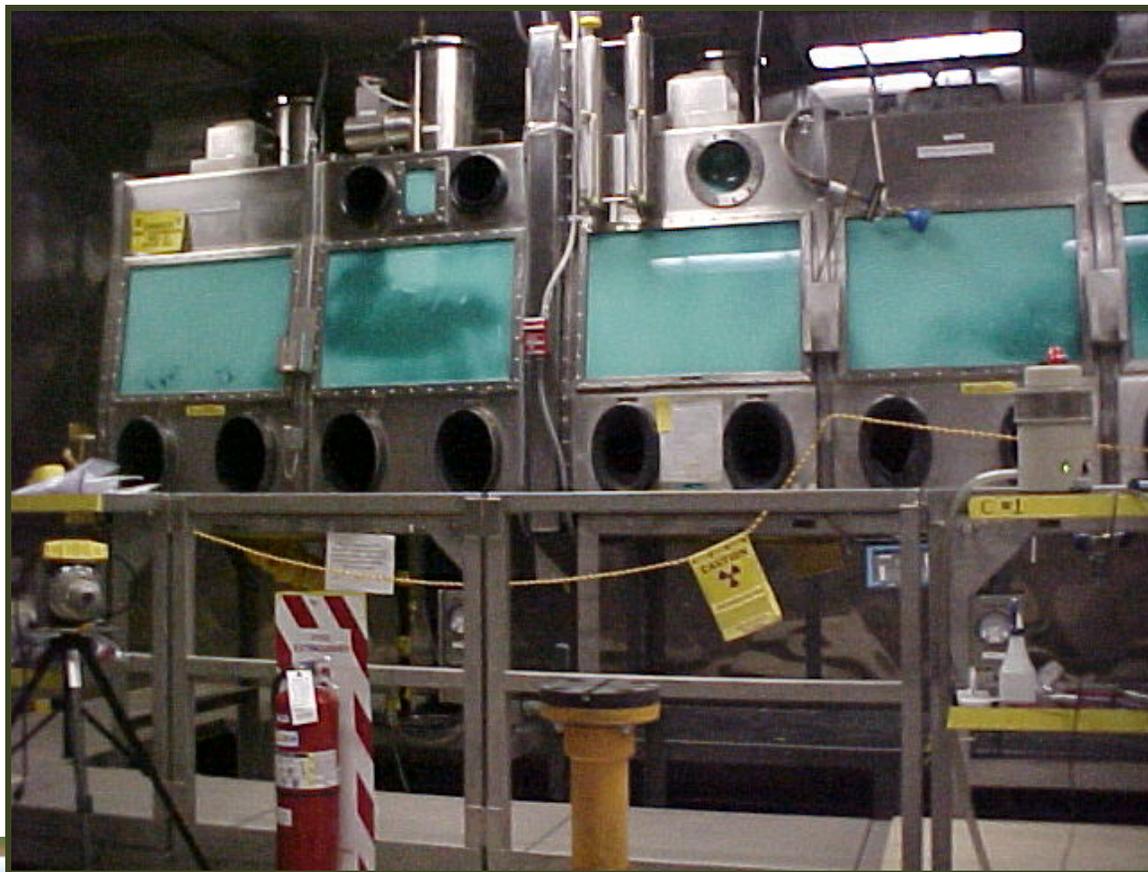
- Glovebox removed from NTS Visual Examination and Repackaging Building (VERB) and disposed on-site as low-level waste

September 25, 2006



Glovebox Removal Process

"Fixative" (used to seal/contain contamination) applied to glovebox interior



Glovebox Removal Process

(continued)

Disconnecting glovebox



Glovebox Removal Process

(continued)

Removing glovebox legs



Glovebox Removal Process

(continued)

Shrink-wrapping glovebox



Glovebox Removal Process

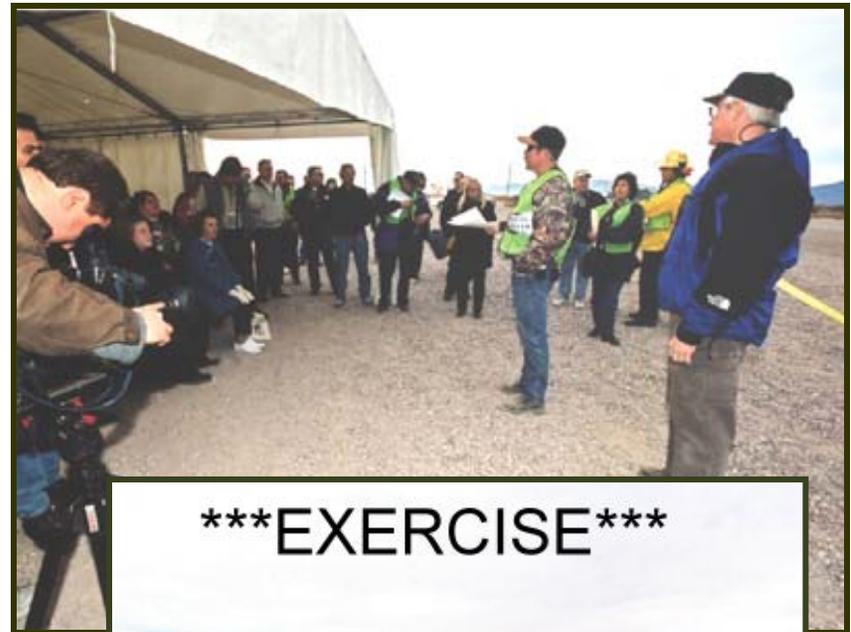
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Glovebox moved to the TRU Pad Cover Building while awaiting approval for on-site disposal as low-level waste



Historical CAB Involvement

- Provided input on budget prioritization
- Participated in the WIPP transportation exercise
- Hosted public meetings related to TRU waste activities
- Visited and toured WIPP
- Wrote a letter supporting shipment routes to WIPP
- Wrote letters regarding the scheduling of the TRU waste characterization vendors at the Nevada Test Site



Oversize Boxes Disposal Path

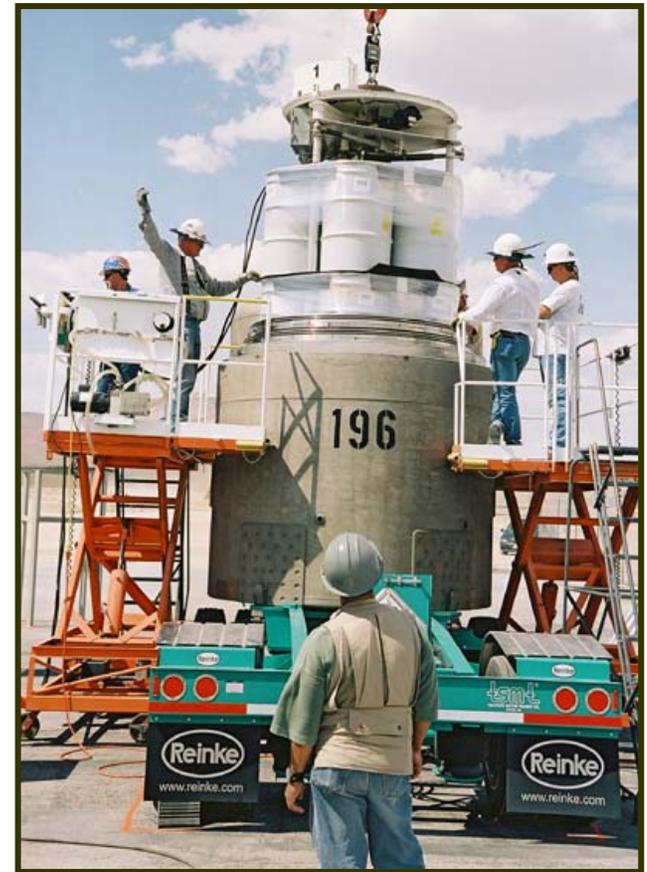
- Previously planned to use a commercial vendor to segregate and repackage 58 oversize boxes containing TRU waste
 - No compliant proposals received so NTS Management and Operating (M&O) contractor (National Security Technologies, LLC) prepared a strategy to perform work
- M&O to segregate and repackage oversize boxes within a contained area of the VERB (modification required) using workers outfitted in personal protective equipment and breathing supplied air
 - Workers will identify and separate items that are low-level/mixed low-level waste from TRU/mixed TRU waste



Oversize Boxes Disposal Path

(continued)

- Items prohibited by the WIPP or NTS waste acceptance criteria will be removed and prepared for the appropriate treatment and disposal
- Segregated and repackaged waste will be placed in the appropriate packaging such that TRU waste will fit within approved shipping containers



Oversize Boxes Disposal Path

(continued)

- Compliantly-packaged TRU waste will be shipped to another U.S. Department of Energy site for characterization and certification prior to disposal at WIPP since the required characterization equipment is no longer available on-site
- Low-level and mixed low-level waste identified during repackaging will be prepared for disposal on-site



Remaining Drums Disposal Path

- Contents of 151 drums did not comply with WIPP Waste Acceptance Criteria
 - Some of the drums contain low-level or mixed low-level waste which will be disposed on-site once WIPP supplies the documentation obtained during characterization
 - Contents of some drums require additional characterization which will occur at another site within the U.S. Department of Energy complex



Spheres Disposal Path

- Currently stored at the Area 5 Radioactive Waste Management Complex
 - Possess substantial “*Acceptable Knowledge*” documentation to be used in lieu of characterization
 - Level of radioactivity currently exceeds the certification limit of the TRUPACT-II shipping container
 - Pending regulatory changes managed through the Carlsbad Field Office will determine disposal path



Potential Regulatory Impacts

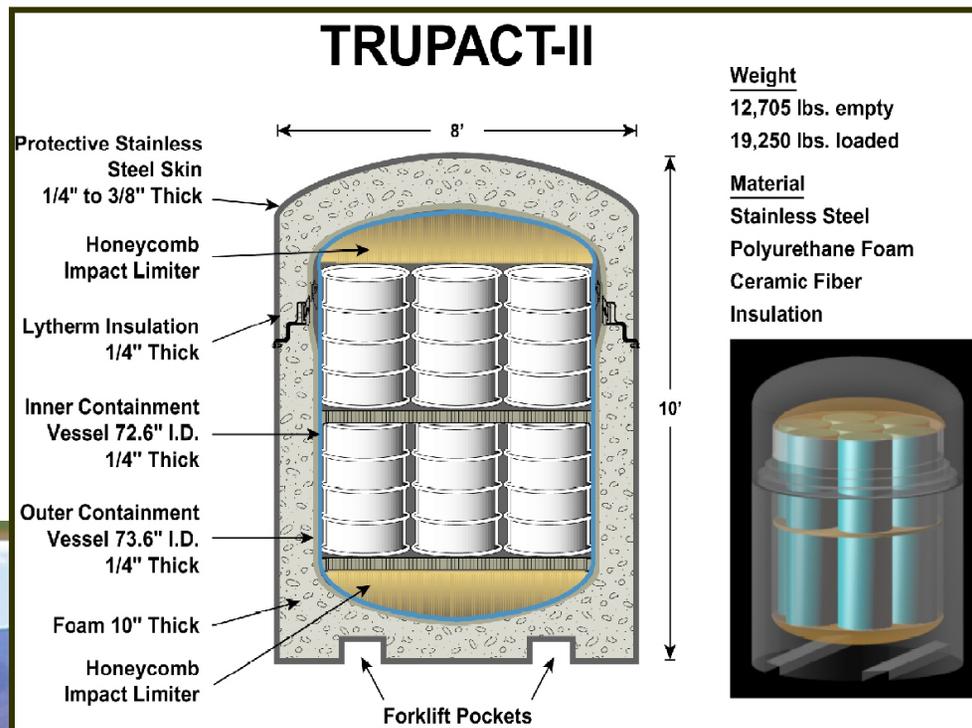
- Approval of the request by WIPP to modify the hazardous waste facility permit to allow for a decrease in the amount of characterization required if there is substantial “*Acceptable Knowledge*” documentation on the TRU waste
- Issuance of the Supplement Analysis to the Waste Management Programmatic Environmental Impact Statement
 - Will allow NTS to ship TRU waste to the Central Characterization Facility at the identified U.S. Department of Energy site
 - Continues to allow NTS TRU waste shipments directly to WIPP, but would require negotiations with affected states to reopen the shipping corridor



Potential Regulatory Impacts

(continued)

- Carlsbad Field Office is requesting that the Nuclear Regulatory Commission modify the TRUPACT-II certification to allow for the transportation of higher-activity TRU waste



Current Status

- Currently in planning stages to segregate and repackage oversize boxes (VERB modification, equipment, and schedule)
- Awaiting approval of regulatory drivers to finalize the strategy for shipping all remaining TRU waste off-site
- Planning focused on meeting Nevada Site Office TRU sub-project end-date of September 31, 2007 although State of Nevada Division of Environmental Protection imposed deadline to initiate final disposition of TRU waste in oversized boxes (267 m³) is not until December 30, 2007

