U.S. DEPARTMENT OF ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

SRS Transuranic Waste Program Update

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Presentation for the Waste Management Committee
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Purpose

- Present an update on the progress SRS is making on disposition of its legacy transuranic (TRU) waste project
- Presentation requested as a topic for the Waste Management Committee 2014 Work Plan

Acronyms

CCP	Central Characterization Project
CFR	Code of Federal Register
CH	Contact Handled
DOE	Department of Energy
EPA	U.S. Environmental Protection Agency
HEPA	High Efficiency Particulate Air
MST	Mountain Standard Time
NRC	Nuclear Regulatory Commission
RCRA	Resource Conservation and Recovery Act
RH	Remote Handled
SCDHEC	South Carolina Department of Health & Environmental Control
TRU	Transuranic
TRUPACT	Transuranic Package Transporter
WAC	Waste Acceptance Criteria
WIPP	Waste Isolation Pilot Plant

Agenda

1. TRU Waste Description
2. DOE TRU Waste Program and WIPP
3. Recent Events at WIPP
4. Recent SRS Accomplishments
5. SRS legacy TRU Waste Inventory
6. SRS Storage of TRU Waste
7. Plans for Completing Disposal of SRS legacy TRU waste
8. Summary

WIPP Site and TRUPACT-II Truck

TRU Waste Description

- *The Land Withdrawal Act of 1992*, as amended, defines TRU waste and limits disposal at the Waste Isolation Pilot Plant (WIPP) to transuranic waste resulting from atomic energy defense activities which meets this definition.

Definition

TRU waste is radioactive containing more than 100 nanocuries (3700 becquerels) of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for:

1) High-level radioactive waste;

2) Waste that the Secretary of Energy has determined, with concurrence of the Administrator of Environmental Protection Agency (EPA), does not need the degree of isolation required by 40 Code of Federal Register (CFR) Part 191 disposal regulations; or

3) Waste that the Nuclear Regulatory Commission (NRC) has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61

TRU Waste Description (cont.)

- TRU waste requires geological disposal at the Waste Isolation Pilot Plant (WIPP)
  - Located in Carlsbad, New Mexico
  - Geologic Salt Formation Disposal Facility (Mine)
  - Operates 2,150 feet below the surface
  - Permitted capacity is 175,000 cubic meters of waste
- SRS legacy TRU waste
  - Mainly generated on site from years of nuclear material processing
  - Debris type waste contaminated with plutonium -238 and -239 isotopes
  - Most of the waste was packaged and stored before the waste acceptance criteria (WAC) at WIPP was finalized

TRU Pad 1 Waste Retrieval

DOE TRU Waste Program and WIPP

- DOE began managing TRU waste in the 1970s and is generated throughout the DOE Complex
- Extensive characterization and certification process of the waste conducted at the generator site to assure the waste meets the WIPP waste acceptance criteria (WAC)
- Two types of TRU waste and requires different handling at WIPP
  - Contact Handled (CH)
  - Remote Handled (RH)
- Key aspects of the National TRU Waste Program
  - WIPP waste characterization and certification program (Central Characterization Project, CCP)
  - WIPP mine operations
  - Transportation of the waste to WIPP
- Some key dates to remember:
  - WIPP began receiving waste in March 1999
  - SRS made it first shipment in May 2001

Recent Events at WIPP

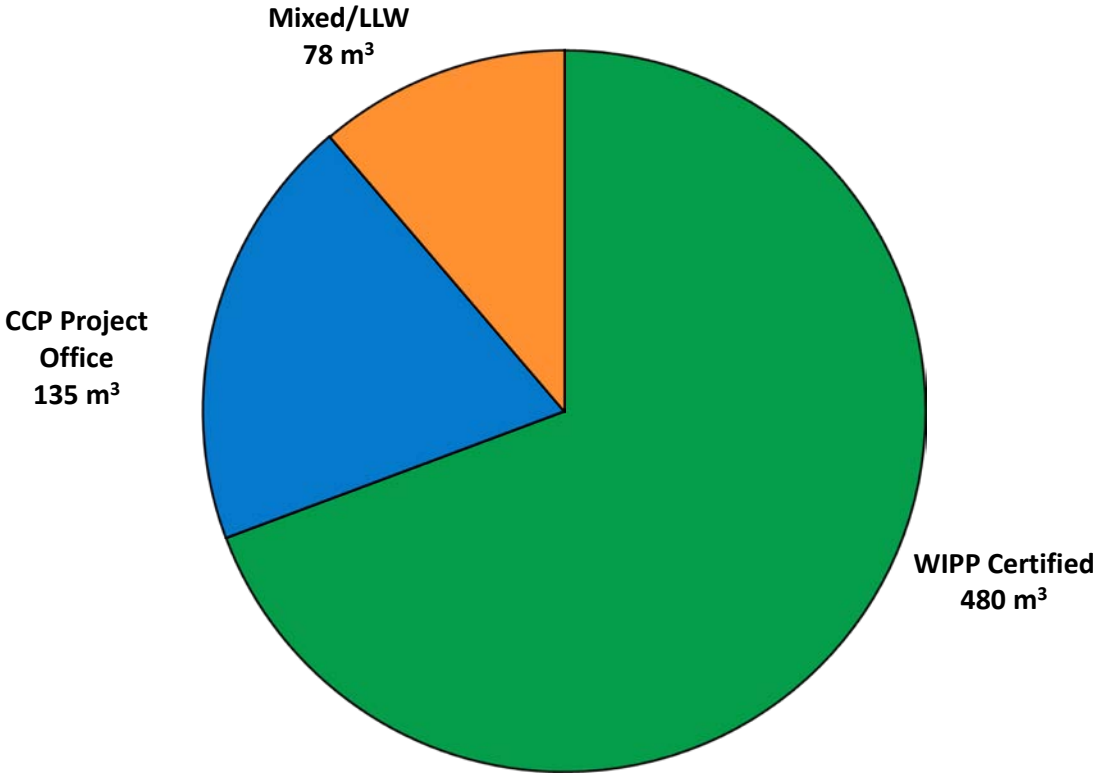
- On February 5, 2014, underground vehicle used to transport salt caught on fire
- On Friday, February 14, at approximately 11:30 PM MST, a continuous air monitor detected airborne radiation in the underground. The monitor detected high Alpha/Beta activity, which is consistent with the type of radiation in the transuranic (TRU) waste being placed in the repository. Immediately upon activation of the monitor the air being exhausted routinely from the mine was immediately diverted through the high-efficiency particulate air (HEPA) filters to capture any contamination. The system worked as designed.
- WIPP is recovering from the February events and is not currently receiving waste shipments
- Visit the WIPP website for updated information http://www.wipp.energy.gov

Recent Site Accomplishments

- Reduced the legacy TRU waste stored at SRS from over 12,000 cubic meters to 615 cubic meters today
- Made 1,652 shipments to WIPP
  - Completed 232 TRUPACT-III shipments to WIPP
- Completed all repackaging of legacy TRU waste containers into WIPP compliant containers earlier this fiscal year
- Completed all field WIPP certification activities on SRS legacy TRU waste last month

WIPP Trucks leaving SRS

SRS legacy TRU Waste Inventory



Total legacy inventory is 693 cubic meters (TRU waste to WIPP is 615 cubic meters)

Site Storage of TRU Waste

- SRS TRU Pads are located in E-area at the central part of the Site
- SRS TRU waste is stored in cover above grade concrete pads
- SRS TRU waste pads are permitted under Resource Conservation and Recovery Act (RCRA) by South Carolina Department of Health and Environmental Control (SCDHEC).
- TRU Waste Storage Pads also meet Federal Standards and DOE Orders for the management of radioactive waste
- TRU waste containers are inspected routinely by trained and qualified Site personnel

Plans for Completing Disposal of SRS Legacy TRU Waste

- SRS legacy TRU waste is all compliantly packaged and field certification activities complete
- Remaining waste certification activities at WIPP expected to be completed later this year and will make all SRS waste certified and ready for shipment to WIPP
- Waste will remain safe and compliantly stored on TRU waste Pads in E-area until shipped
- Approximately 125 shipments to WIPP are required to complete the SRS legacy TRU waste program

Waste disposed at WIPP

Summary

- SRS has completed all field activities and will have all its legacy TRU waste certified and ready to ship later this year
- Waste will be safely stored at SRS until it can be shipped to WIPP
- DOE will continue to keep the CAB informed on the WIPP recovery