Transuranic (TRU) Waste Overview and Status

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Transuranic Radioactive Waste Management per DOE Order 435.1

Radioactive Waste

>100 nCi/g alpha-emitting TRU nuclides with half-life >20 yrs?

YES

TRU Waste

NO

Byproduct or NORM?

Tailings or otherwise not LLW

YES

NO

Low Level Waste

TRU: transuranic
NORM: naturally occurring radioactive material
LLW: low-level waste
Transuranic Waste Disposal

- **National Transuranic Program**
  - DOE Headquarters and Field Sites
  - Waste Isolation Pilot Plant (WIPP)
  - DOE Carlsbad Field Office (CBFO)

- **DOE-SR Interactions**
  - Program Level
    - Weekly site specific and complex wide conference calls
    - Generator Site Technical Reviews
  - Site level
    - CBFO characterization contractors
    - CBFO loading and shipping contractors
    - Central Procurement Program
  - WIPP
    - Coordinating shipments based on priority
    - Technical reviews
Solid Waste Management Facility
Transuranic (TRU) Waste Management Overview

1. SRS Generated TRU Waste
2. Packaged to WIPP Requirements
3. Perform WIPP Characterization
4. Meets WIPP Waste Acceptance Criteria
5. Ship to WIPP for Disposal
Transuranic (TRU) Waste Status

- Annual waste generation rate: approx. 30 cubic meters per year
- FY19: approx. 720 cubic meters in storage at Solid Waste Management Facility (E-Area)
- TRU waste meets current WIPP waste acceptance criteria
- Shipments to WIPP resumed in 2017
  - FY17: 9 shipments (55 cubic meters)
  - FY18: 1 shipment (9 cubic meters)
  - FY19: 2 shipments (22 cubic meters)
Transuranic (TRU) Waste Focus Area: Waste Shipments

- **TRUPACT-III (TP-III) Shipments**
  - 7 remaining Standard Large Boxes (SLB2s)
  - All previously characterized
  - 2 certified for shipment; 5 in progress (complete by Dec 2019)
  - Expect to start shipments in Winter 2019

- **TRUPACT-II (TP-II) Shipments**
  - Approx. 100 containers certified
    - 9+ shipments
  - Over 900 containers remaining
    - 40+ shipments

- **RH-TRU Waste Shipments**
  - Approx. 151 drums
  - All previously characterized
  - Shielded Container Assemblies (future)
    - Potential use for approx. 100 drums
    - 15+ shipments
Transuranic (TRU) Waste Focus Area: E-Area Characterization

- Goal: Re-establish Characterization Capabilities by 3QFY21
- Newly Generated TRU Waste Containers
  - 4 waste streams
- Equipment procurement in progress
  - Real-time Radiography (RTR)
  - Non-Destructive Assay (NDA)
  - Flammable Gas Analysis (FGA)
- E-Area Facility Modifications and Procedure Updates in progress
- DOE-Carlsbad Field Office (CBFO) Audit & EPA Inspection required
Transuranic (TRU) Waste Focus Area: Loading and Shipping Facilities in E-Area

- Characterization
- TP-II Loading
- TP-III Loading
- Inspection Area
Transuranic (TRU) Waste Focus Area: Plutonium Oxide Downblend (K-Area)

- **Goal:** Ready to Ship Criticality Control Overpacks (CCOs) by 3QFY22
- **NEPA Approval for 6 Metric Tons (MT)**
- **Equipment procurement in progress**
  - Real-time Radiography (RTR)
    - To be transferred from E-Area after Newly Generated TRU waste is characterized
  - Non-Destructive Assay (NDA)
- **CCO Storage Pad design in progress**
- **DOE-Carlsbad Field Office (CBFO) Audit & EPA Tier I Inspection required**
Transuranic (TRU) Waste Focus Area: DWPF RH-TRU Waste (S-Area)

- DWPF contaminated equipment to be packaged into 30-gal drums
  - Approx. 25 drums to be generated
  - Potential future generation (approx. 5/year)
- Procedures in progress
- Characterization & Certification Planning in progress
  - Remotely Monitored Visual Examination (VE)
  - Dose-to-Curie with Qualified Distribution
- Overpack into SC-30G1 SCAs
- DOE-Carlsbad Field Office (CBFO) Audit & EPA Tier I Inspection required
- Ship in HalfPACTs from E-Area
Questions?