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

Waste Disposition Update

EM Site-Specific Advisory Board Chairs Meeting

May 11, 2017

Overview

- Low-Level Radioactive Waste (LLW) Policy & Goals
- Waste Management Highlights
- Status of Greater-Than-Class C (GTCC) LLW and GTCC-like Waste Disposal
- Update on Waste Isolation Pilot Plant (WIPP)
- Transportation Program

LLW Policy & Goals

- DOE Order 435.1, *Radioactive Waste Management*, defines waste management policy, e.g., use of on-site and off-site disposal paths; commercial treatment and disposal facilities.
- DOE closely monitors potential changes in the commercial market – treatment and disposal waste volumes are lower because of the reduction of the inventory of legacy mixed low-level/low-level waste.
- Low-level Waste Disposal Facility Federal Review group (LFRG) Goals:
  - Confirm that the disposal of LLW at DOE facilities is conducted in a manner that is protective of public health and safety and the environment, by providing regulatory oversight.
  - Ensure consistency in approach and application with the design, construction, operation, and closure of LLW disposal facilities.
  - Ensure compliance with DOE 435.1 requirements.
- DOE promotes open dialogue with the Environmental Protection Agency and the States to ensure effective communications.

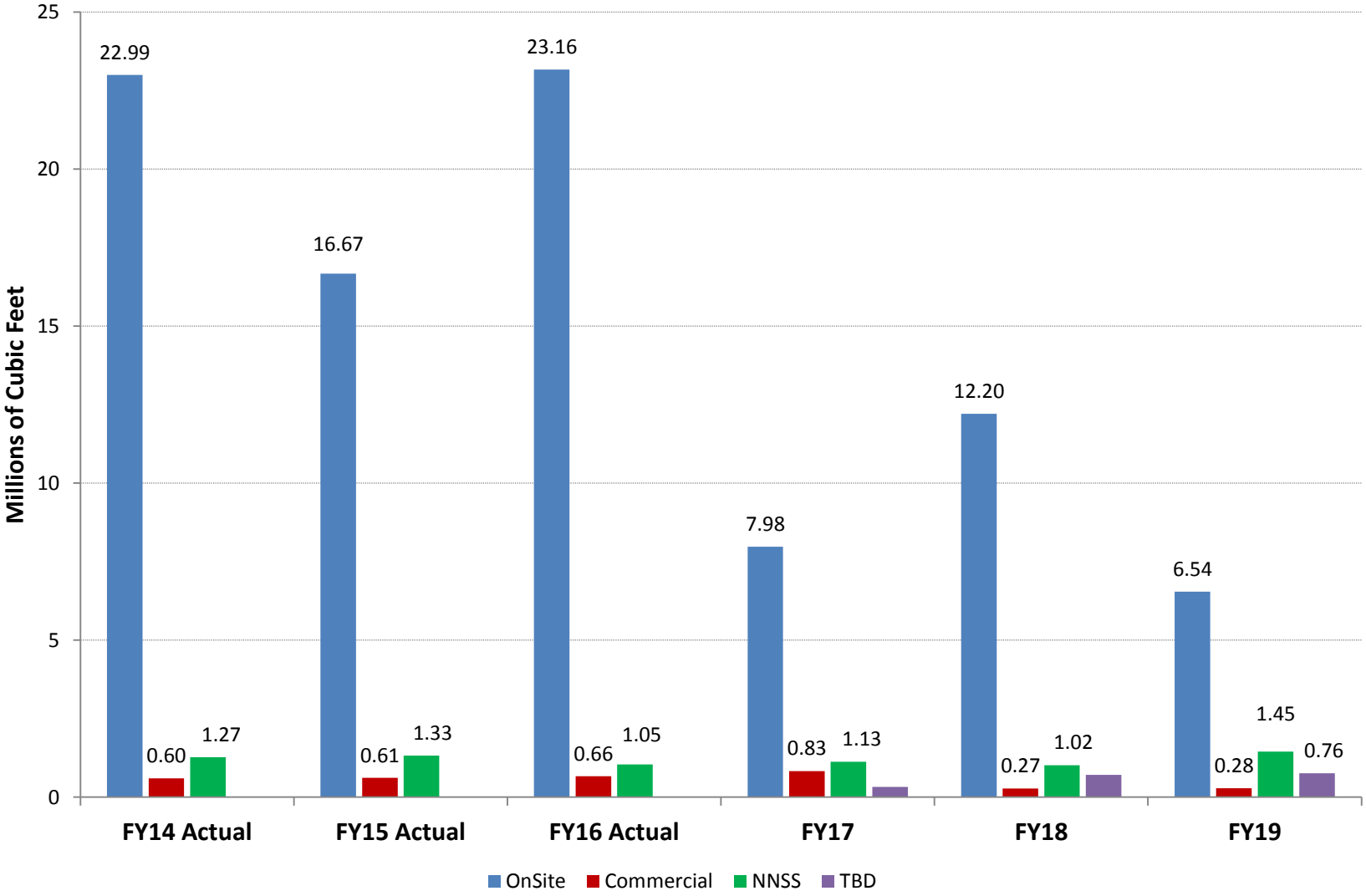
Waste Management Highlights

- Nevada National Security Site (NNSS)
  - Continues to serve an important role in DOE's waste management system.
  - DOE and the State work collaboratively in accordance with the MOU.
  - NNSS is planning for additional mixed LLW capacity.
- Portsmouth
  - New onsite disposal facilities at the Portsmouth site to address large decontamination and decommissioning/environmental remediation volumes is under development. Site preparation and infrastructure construction continue.
- Idaho
  - Idaho's Accelerated Retrieval Project IX retrieval enclosure construction will be completed this spring.
- West Valley Demonstration Project
  - Shipment of three large components from the site for disposal as LLW was completed in November 2016.
  - The completion of relocation of the HLW canisters from the Main Plant Processing Building to onsite storage occurred in December 2016.
- Moab
  - The project has shipped 8.6 million tons of tailings material (estimated 53% of total).

Disposition of West Valley Large Components

Relocation of the High Level Waste Canisters

Complex-wide LLW/MLLW Disposal Rates by Location

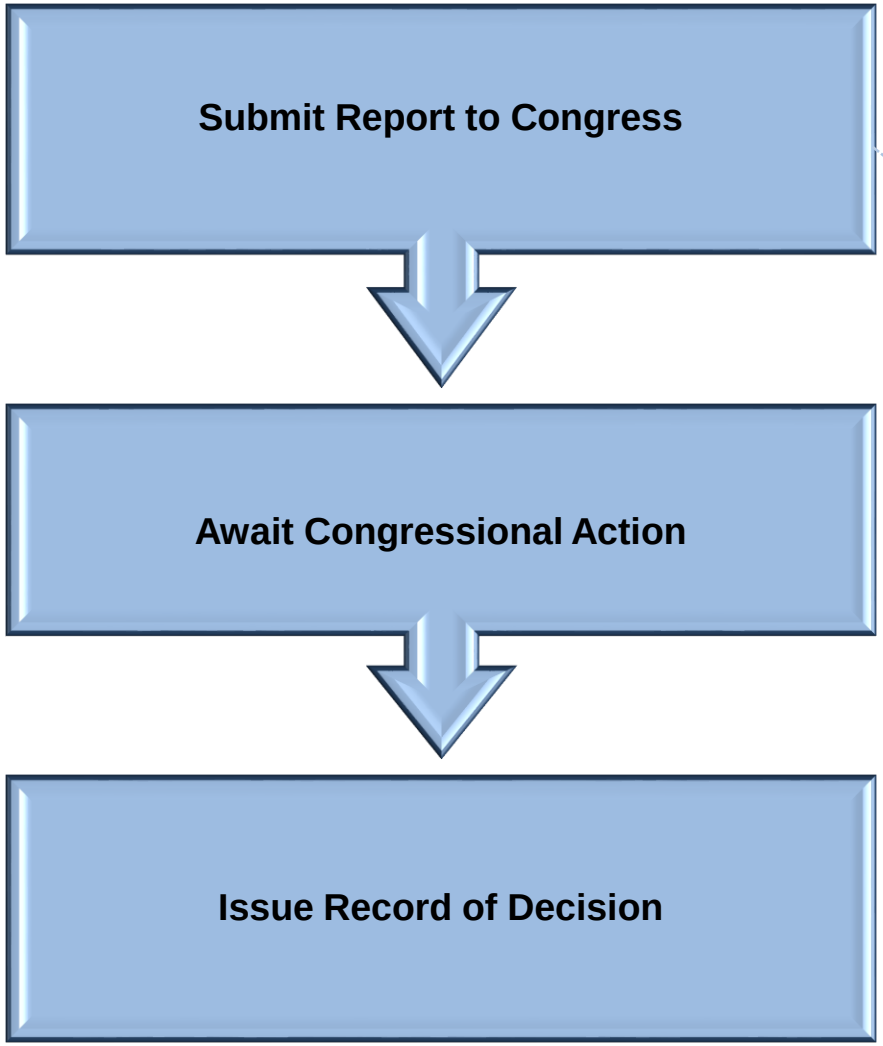


Status of GTCC LLRW & GTCC-Like Waste Disposal

- In February 2016, DOE published the *Final Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste.*
  - GTCC LLW has radionuclide concentrations that exceed the limits for Class C LLW.
  - GTCC LLW currently does not have a defined disposal path.
  - GTCC-like waste is DOE owned or generated LLW or TRU waste with characteristics similar to GTCC LLW, and with no identified disposal path.
  - Preferred alternative: land disposal at generic commercial facilities and/or WIPP geologic repository.
  - The Final EIS has the potential to enable disposal of the entire GTCC LLW and GTCC-like waste inventory of approximately 12,000 cubic meters (m^3).
  - Presently there is no preference among the three land disposal technologies (intermediate-depth borehole, enhanced near-surface trench, and above-grade vault) at generic commercial facilities.

- In accordance with the Energy Policy Act of 2005, before the Secretary of Energy makes a final decision on the disposal alternative(s) to be implemented, a Report to Congress must be submitted.
  - The Report to Congress has been drafted and is in concurrence.

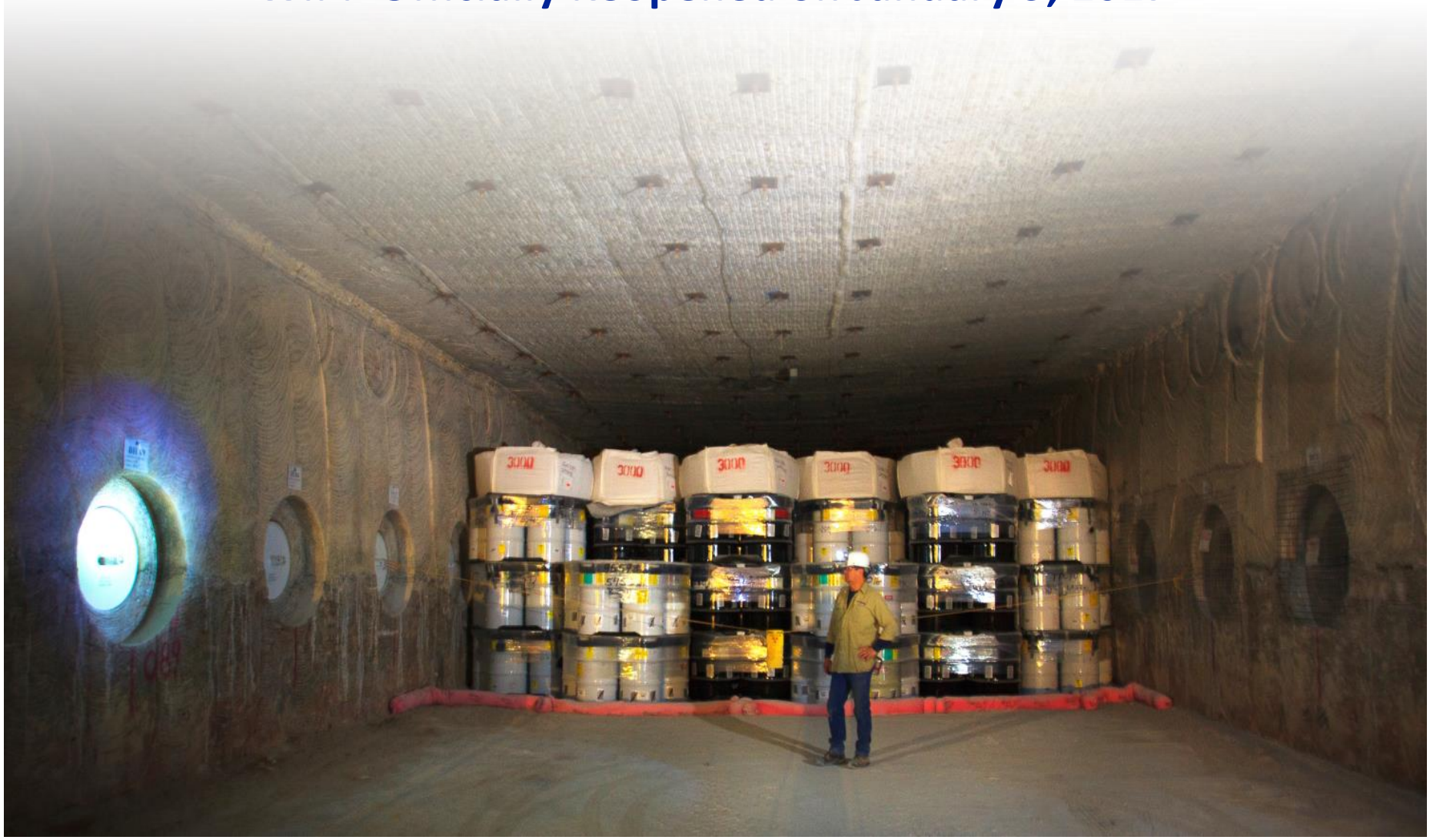
Status on GTCC LLW & GTCC-Like Waste Disposal (cont'd)



The Report to Congress will:

- Describe alternatives under consideration
- Identify waste volume, concentration, and other relevant characteristics
- Identify the Federal and non-Federal options for disposal
- Describe actions to ensure safe disposal of identified radioactive wastes
- Describe projected costs
- Identify options for ensuring that the beneficiaries of the activities resulting from the generation of GTCC waste bear all reasonable costs of disposing of such wastes
- Identify statutory authority required for disposal of GTCC waste

WIPP Officially Reopened on January 9, 2017



WIPP Update: Look Ahead

- **Near-Term (next 12 months)**
  - Waste emplacement operations in Panel 7
  - Shipping has resumed – establishing priorities
  - Supplemental Ventilation
  - Restart of mining operations
  - Continue preparation for closure of the far south end of the WIPP underground

- **Long-Term (1 to 5 years)**
  - New air intake shaft
  - New safety significant permanent ventilation system: air intake shaft and filter building

WIPP Update: Projected Shipping Estimates

Key considerations in the development of the shipping estimate and points of origin included:

- WIPP waste emplacement rate;
- Available waste to ship;
- Regulatory commitments and agreements;
- WIPP transportation/waste acceptance capabilities; and
- Flexibility for changing technical and policy constraints.

April 8th - TRU waste shipment from Idaho arrived at WIPP.

April 13th - TRU waste shipment from SRS arrived at WIPP.

Site	Projected Shipments (Through the end of January 2018)
Idaho	61
Oak Ridge	24
Savannah River	8
Waste Control Specialists	11
Los Alamos	24
TOTAL	128

April 28th - TRU waste shipment from WCS arrived at WIPP.

WIPP Update: Eligibility to Ship

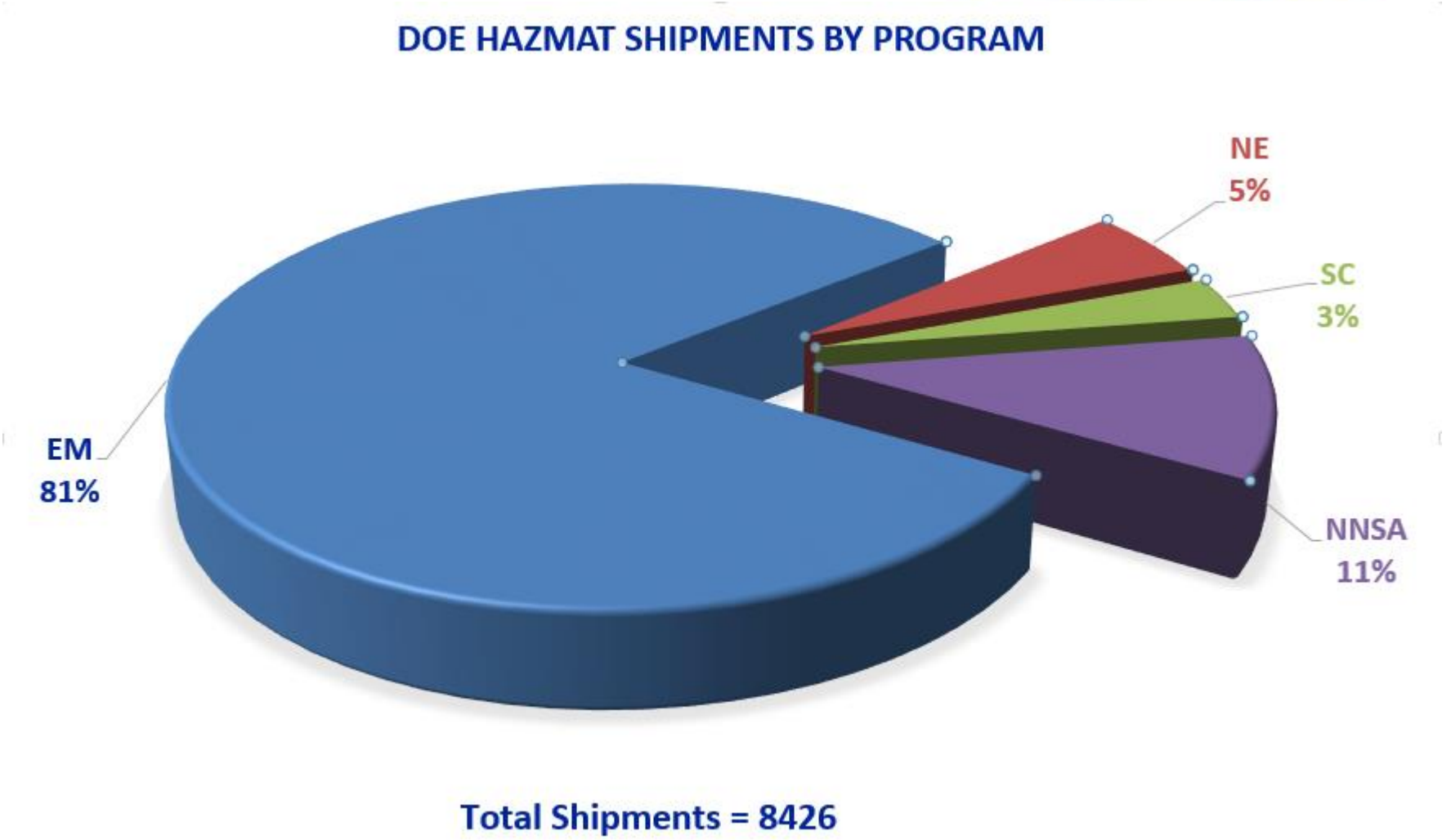
In order to be eligible to ship waste for emplacement at WIPP, sites must verify that TRU waste meets the requirements for safe transportation and disposal:

- All waste must meet requirements in the new WIPP Documented Safety Analysis, including chemical compatibility evaluations.
- TRU generator sites are updating (and must get approval for) their TRU characterization, packaging and certification programs.
- All previously certified waste must also be reviewed to verify that it meets the new Waste Acceptance Criteria.

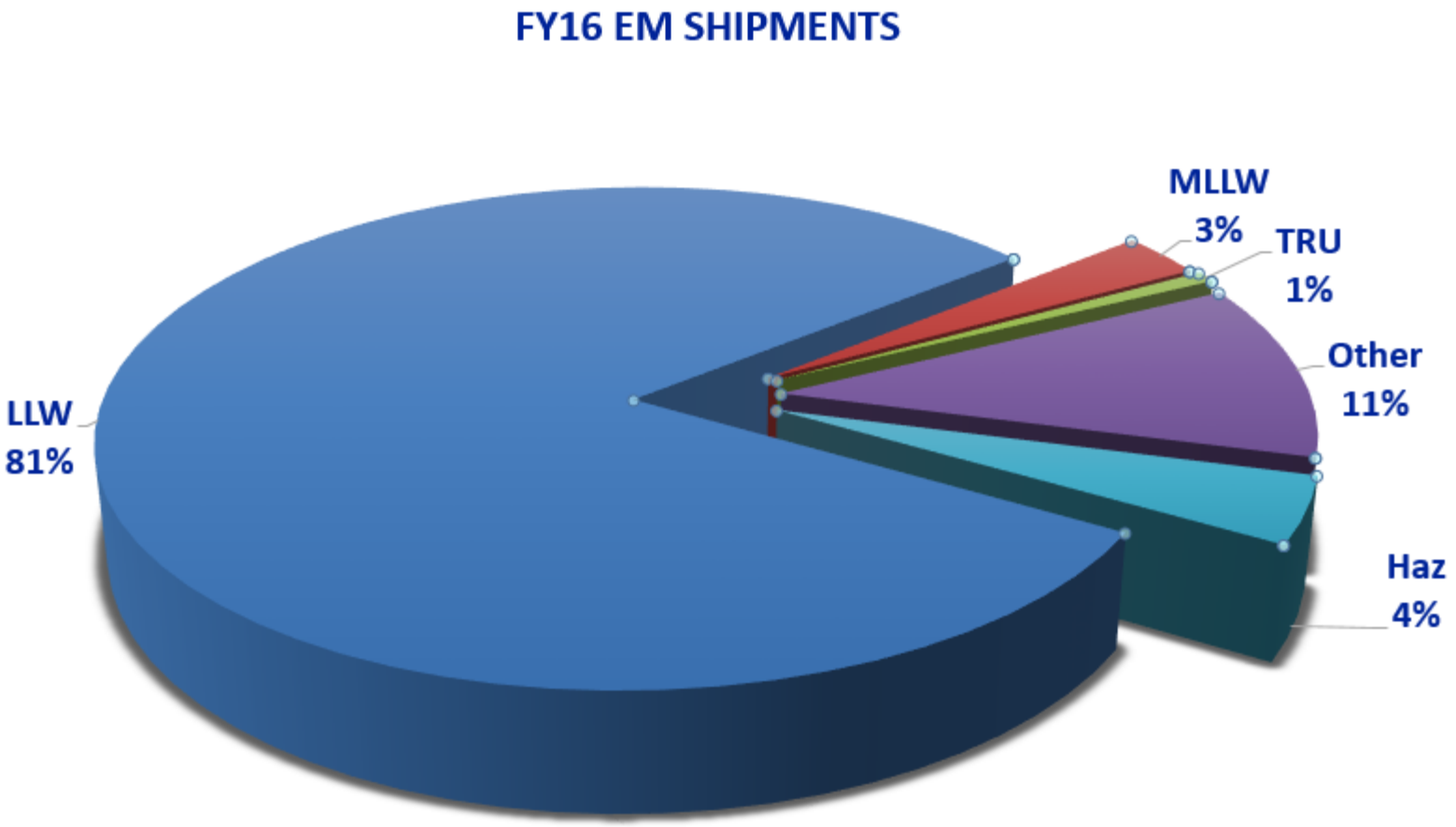
EM's Office of Packaging and Transportation

- Provides guidance, tools, and support for DOE programs and contractors to assure safe, compliant, reliable, and efficient packaging & transportation of the Department's materials (hazardous and non-hazardous).
- Management & approval of Type B & fissile packaging certification
- Transportation regulations & standards support
- DOE motor carrier evaluations
- Negotiates national freight rate tenders/contracts, program & site support
- Transportation emergency preparedness & stakeholder outreach

FY16 DOE Shipments

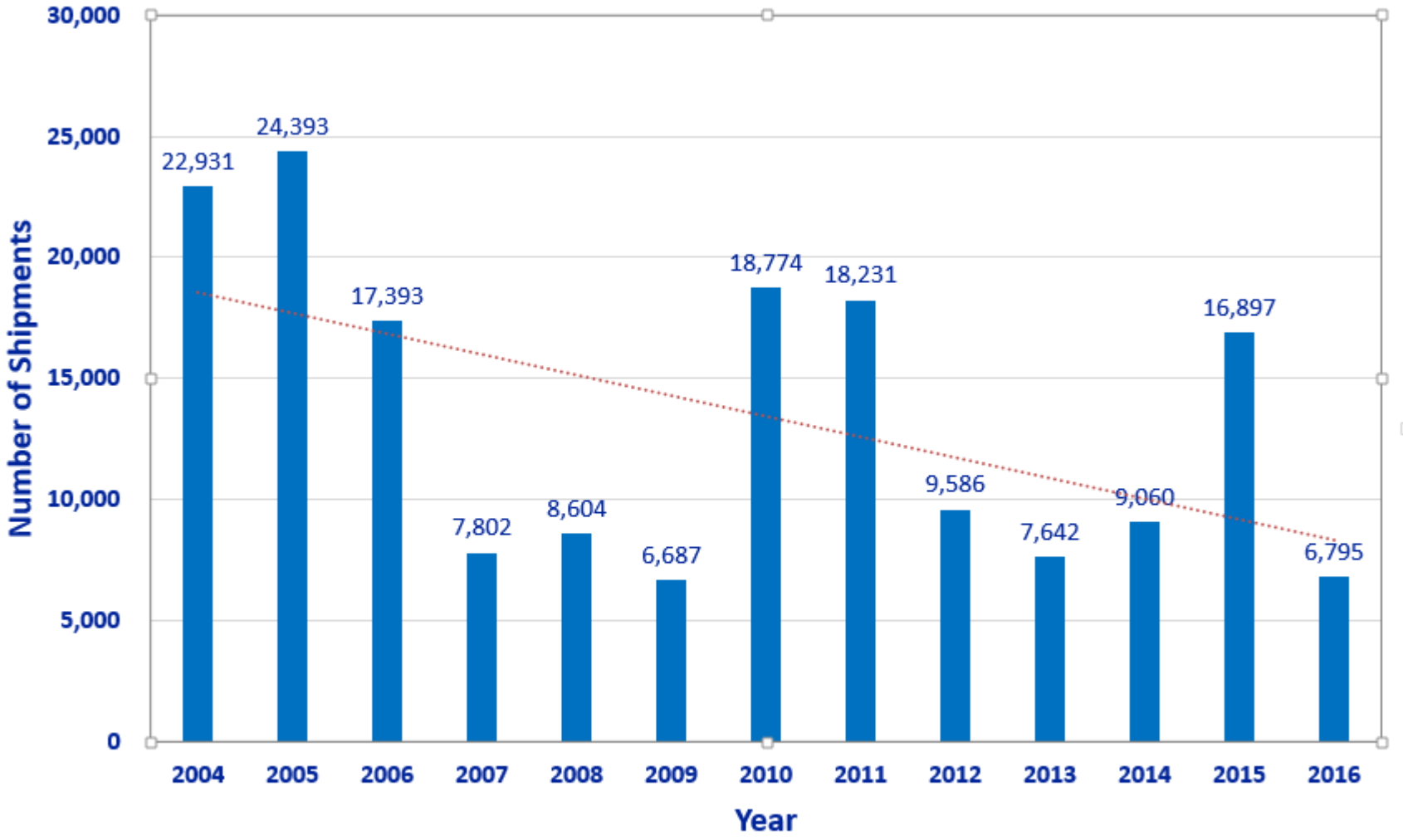


FY16 EM Shipments



Total Number of Shipments = 6795

Historical EM Shipments



Transportation Emergency Preparedness Program

- The Transportation Emergency Preparedness Program (TEPP) assists States, Tribes, and local authorities in preparing for a response to a transportation incident involving Department of Energy shipments of radioactive waste.

Transportation Emergency Preparedness Program (cont'd)

- TEPP uses Table Top and Full-Scale exercises to validate plans, procedures, and training. These exercises have been conducted across the United States.
- TEPP has worked with a number of agencies to ensure that our training programs are relevant, up-to-date, and consistent with national standards:
  - Federal Emergency Management Agency's (FEMA) National Radiological Training Coordinating Group
  - Regional governors' groups and National Transportation Stakeholders Forum (NTSF) Tribal Caucus on revision of radiological training programs
- Many of the TEPP planning products and tools are available online at **em.doe.gov/otem**
  - TEPP Points of Contact
  - Designated State and/or Tribal 24-hour Points of Contact
  - TEPP Planning Tools and Procedures
  - TEPP Model Exercise Scenarios
  - TEPP Model Needs Assessment
  - Training Aids

Questions?