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

EM SSAB Chair's Meeting
Waste Disposition Strategies Update

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April 25, 2013

Discussion Outline

- Recent Program Accomplishments
- FY13 Waste Management Priorities
- FY14 Waste Management Priorities
- Los Alamos Update
- LLW/MLLW Disposition Options
- Hanford TRU Tank Disposition Initiative
- GTCC EIS
- Mercury Supplemental EIS
- Excess Material and Metal Recycling
- DOE Order 435.1, Radioactive Waste Management
- Blue Ribbon Commission Related Activities

Recent Program Accomplishments

- Continued progress towards removal of Los Alamos TRU waste, in accord with Framework Agreement
- Submitted WIPP Hazardous Waste Facility permit modification for Hanford tank waste
- Supported development of the Department's *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*, in response to the Blue Ribbon Commission's recommendations
- Continued joint-planning effort with Office of Nuclear Energy on research and development for disposal of heat generating waste in a generic salt repository
- Published waste incidental reprocessing determinations for West Valley components
- Awarded national LLW/MLLW disposal ID/IQ contracts
- Assisted NNSA in issuance of the NNSS site-wide EIS

FY 13 Waste Management Priorities

- Continue implementation of the LANL Framework Agreement
  - Continue progress on "3706 Campaign"
- Optimize TRU waste shipments to WIPP
  - LANL, Idaho, Savannah River, ANL
- Idaho:
  - Sustaining performance of AMWTP, processing sludges, and resuming Accelerated Retrieval Project
- Oak Ridge:
  - Continue efforts to disposition U^{233} inventory , continue design of sludge processing capability, continue processing of legacy TRU in anticipation of FY 14 shipments
- Publish final GTCC LLW EIS
- Continue to improve production rates at the Depleted Uranium Hexafluoride (DUF6) conversion plants
- Safely transport 650,000 tons of mill tailings from the Moab project to Crescent Junction for disposal

FY 14 Waste Management Priorities

- Idaho: Start treatment of sodium bearing waste, continue CH and RH TRU projects
- Los Alamos: Work toward completion of the 3706 Campaign; continue planning for below-ground TRU
- Carlsbad: Continue optimized TRU program: LANL, INL, OR and potentially SRS
- Oak Ridge: Continue disposition of U^{233} inventory , resume certification and shipment TRU waste
- Office of River Protection: Continue planning for TRU waste retrieval
- Portsmouth/Paducah: Continue operation of DUF6 Conversion Plants
- Portsmouth/Paducah: Records of Decision regarding on-site disposal facilities
- Savannah River: Disposition non-MOXable plutonium
- West Valley: Begin planning for disposition of WIR components

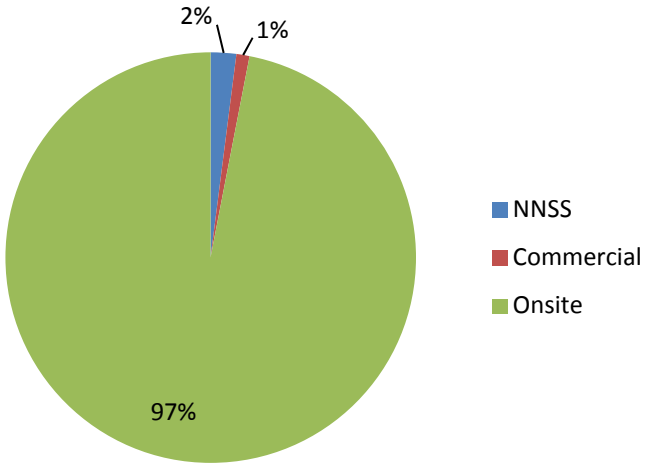
Los Alamos Update

- LANL Framework Agreement remains a priority
  - Negotiated in early 2012, commits to the removal of 3,706 cubic meters of above-grade combustible TRU by end of June 2014
  - First year goal to remove 800 cubic meters was exceeded; current year efforts on track, but requires substantial increase in remediation and shipping rates
- Continued progress in FY 13
  - March 2013 ahead of schedule - 30 percent of FY 13 goal achieved
  - 39 percent of 2014 total goal achieved
- Continuing resolution and sequestration funding jeopardizes campaign milestones

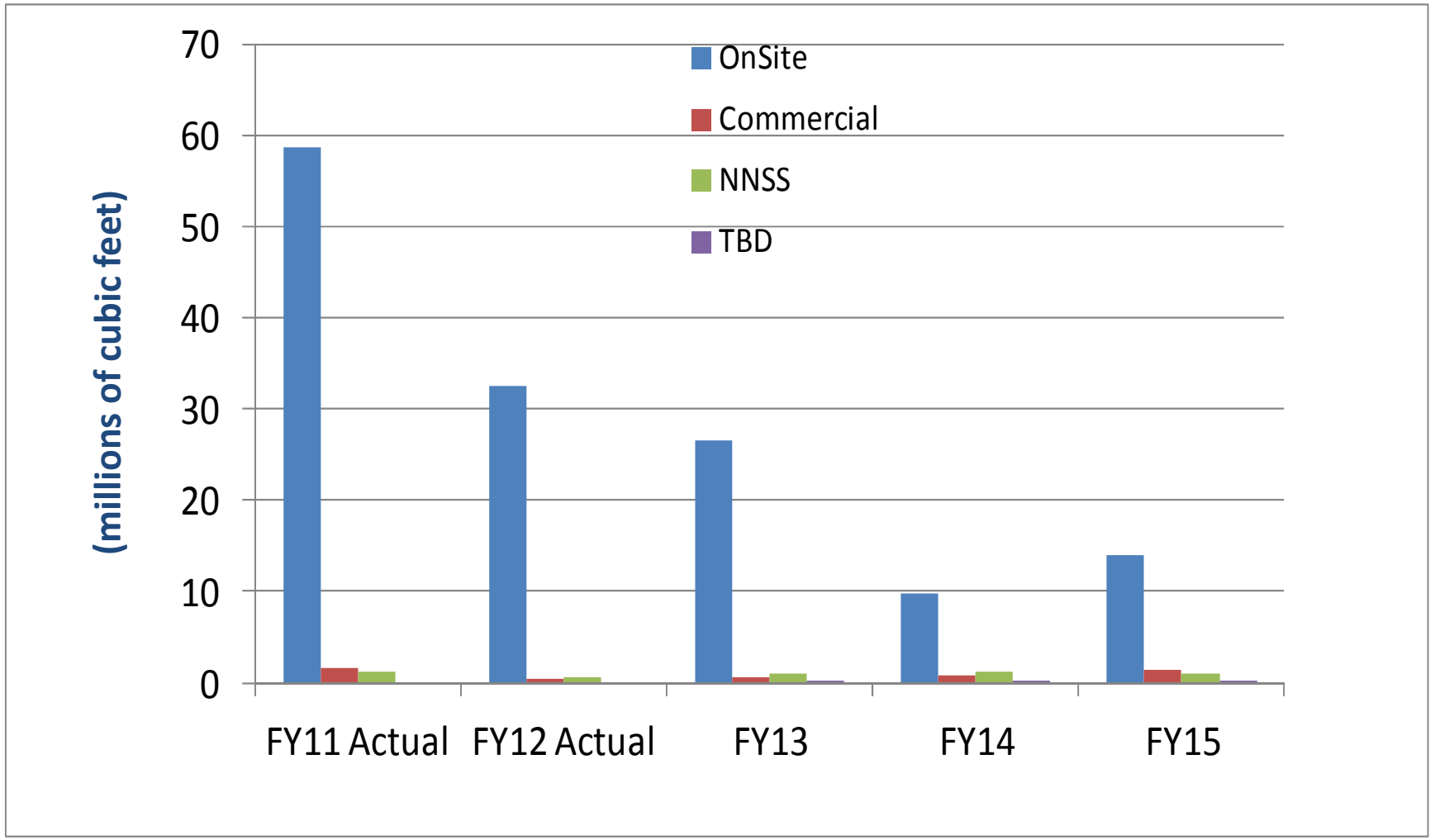
LLW/MLLW Disposition Options

- **Energy*Solutions* (Utah)**
  - Accept Class A LLW and MLLW; 11e(2); NORM
  - Offers rail access, onsite treatment, and favorable bulk waste handling and disposal
- **Waste Control Specialists LLC (Andrews County, Texas)**
  - Multiple disposal facilities/licenses
    - Hazardous/exempt; 11e(2); NORM
    - Texas Compact Class A, B and C LLW – non-DOE waste
    - Federal Waste Facility Class A, B, and C LLW/MLLW – DOE waste
  - Offers onsite rail access, onsite treatment and storage capabilities

FY12 LLW/MLLW Disposal



Forecast Complex-wide LLW/MLLW Disposal Forecasts Continue Downward Trend



Hanford TRU Tank Disposition Initiative

- **December 14, 2012 :** DOE announced in the Federal Register the Notice of Availability for the Tank Closure & Waste Management Environmental Impact Statement at the Hanford Site
- **March 11, 2013:** DOE announced preferred alternative in the Federal Register its to retrieve, treat, package, characterize and certify certain Hanford tank waste for disposal at the Waste Isolation Pilot Plant (WIPP), subject to a number of conditions.
- **April 8, 2013:** DOE Submitted a Class 2 permit modification to the Waste Isolation Pilot Plant Hazardous Waste Facility Permit to the State of New Mexico Environment Department
- Additional Actions Required:
  - Formally characterize the waste as defense-related mixed TRU waste
    - EIS identified 20 tanks for classification as mixed TRU – 3.1 million gallons
    - Potentially 11 tanks CH TRU/9 RH TRU
  - Issuance of Record of Decision (ROD) which incorporates the basis for the TRU determination
  - Obtain appropriate permits at WIPP and at Hanford and ensure that Waste Acceptance Criteria and all other applicable regulatory requirements have been met.
  - Develop and acquire needed retrieval and processing capabilities

GTCC EIS Update

Prepare Final EIS (2012/2013)

Issue Final EIS (spring 2013)

Await Congressional Action (2013)

Issue Record of Decision (2013/2014)

Submit Report to Congress (2013)

In accordance with Section 631 of EPAct & Section (3)(b)(1)(D) of Low-Level Radioactive Waste Policy Amendments Act , the Report to Congress will:

- Propose actions to ensure safe disposal of such identified radioactive wastes
- Describe alternatives under consideration
- Identify the Federal and non-Federal options for disposal
- 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

Mercury Supplemental EIS

- *Draft Supplemental Environmental Impact Statement for Long Term Management and Storage of Elemental Mercury* evaluates additional locations near WIPP for storage facility (April 19, 2013)
- 45-day public comment period – Hearings in New Mexico in May
- Final EIS scheduled for September
- No change in Preferred Alternative (WCS site, Andrews, TX) at this time
- Export of mercury banned as of Jan. 1, 2013 (Mercury Export Ban Act (MEBA))
- DOE required to site and operate storage facility for mercury generated in US
- DOE has received five notifications so far from private facilities that can store Hg as allowed under MEBA until DOE ready to receive mercury

Excess Material and Metal Recycling

- Portsmouth Nickel Feasibility Evaluation
  - DOE has determined it is not in the Government's best economic interest to recycle the Portsmouth nickel at this time
  - Emergence of future commercial ultra-pure, high value nickel market could result in significant savings and jobs for the local economy
- Draft Clean Metal Programmatic Environmental Assessment – pending review of stakeholders' comments by the NNSA
- EM-1 response to the 2/27/2013 EM SSAB recommendation to place more emphasis and priority on evaluating technologies to make recycling excess materials cost effective:
  - Decontamination and resale of excess materials have many positive impacts
  - Adding recycling and repurposing element to future cleanup contract is a fine concept
  - Will consider the establishment of a national recycling center of excellence

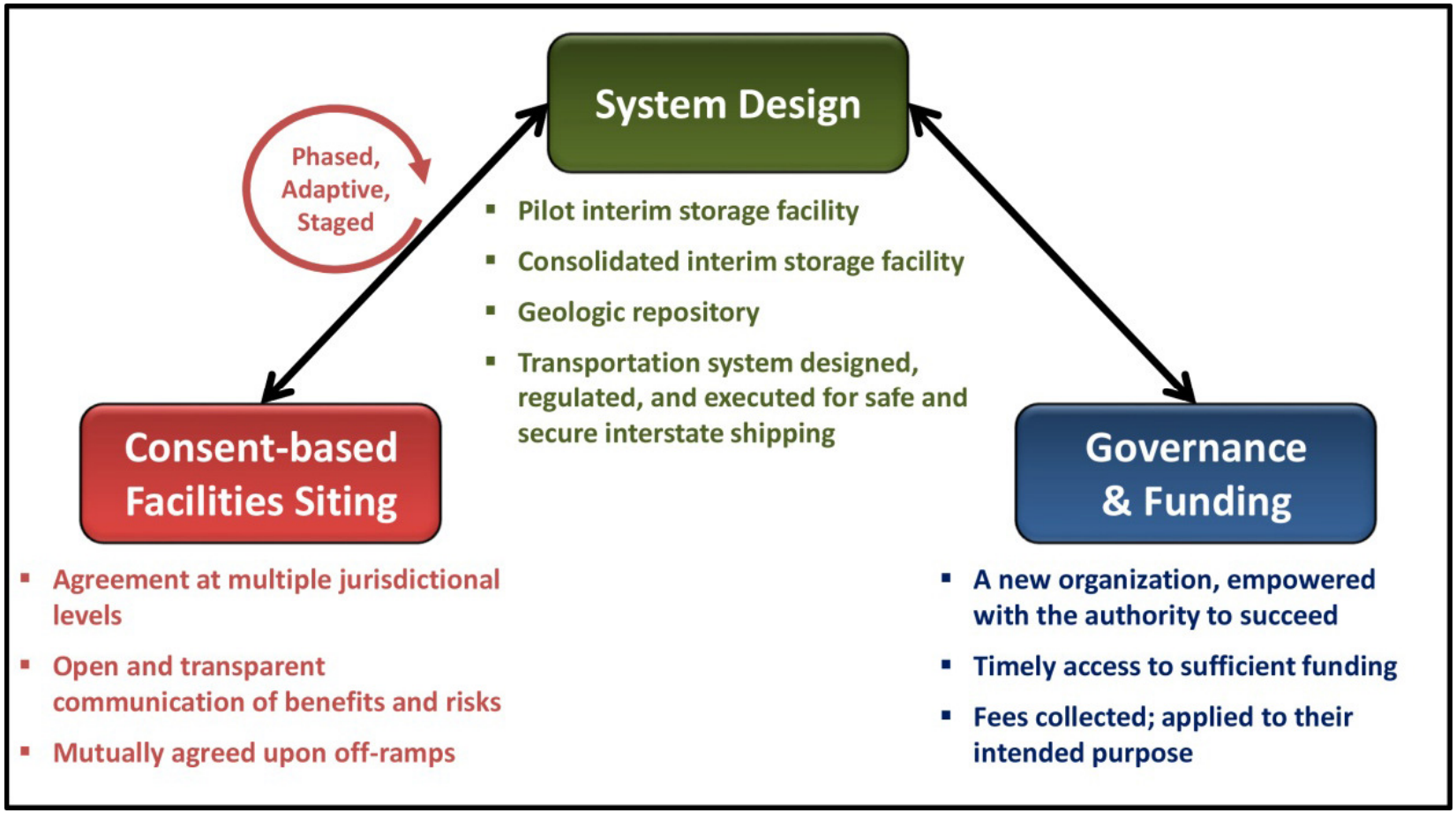
DOE Order 435.1, Radioactive Waste Management

- Proposed updates to Order 435.1 and associated guides are being reviewed by DOE General Counsel
- Major Proposed Changes:
  - Consolidation of duplicate requirements into General Requirements
  - Addressing waste consolidation (blending) as a positive, even necessary, action
  - Substantial alignment of 435.1 Waste Incidental to Reprocessing (WIR) evaluation with 3116 waste determination process
  - Increased specificity on wastes eligible for WIR Citation designation
  - Development of Technical Standard capturing all requirements and authorities associated with authorizing new LLW disposal facilities.
- Next Steps:
  - Release for 60 day public review and comment period (mid-summer)
  - At least 2 webinars for public meetings half-way through comment period
  - Response to public comments (late Summer/early Fall)
  - Final editing and Submission to DOE Approval system (REVCOM) (Fall).

Blue Ribbon Commission Related Activities

- The *Strategy for the Management and Disposal of UNF and HLW* Released Jan. 11, 2013
  - Serves as a statement of Administration policy regarding the importance of addressing the disposition of UNF and HLW, lays out the overall design of a system to address that issue, and outlines of the reforms needed to implement such a system.
  - Presents a response to the BRC recommendations. It also responds to direction in the Joint Explanatory Statement accompanying the Consolidated Appropriations Act 2012, to develop a strategy for the management of UNF and HLW.
  - Represents an initial basis for discussions among the Administration, Congress and other stakeholders on a sustainable path forward for disposal of nuclear waste.
- The BRC report and recommendations provide a starting point for this Strategy. The Administration endorses the key principles that underpin the BRC's recommendations.

Key Elements of the BRC Implementation Strategy



Blue Ribbon Commission Activities (cont'd)

Activities within existing Congressional authorization:

- Conducting disposal-related research and development work on various geologic media, thermal scenarios, and disposal containers.
- The Office of Nuclear Energy and the Office of Environmental Management (EM) are collaborating and have:
  - Embarked on review of past studies related to potential disposal of heat-generating wastes in salt;
  - Developed a re-entry plan to drill back and obtain data from past in-situ heater tests at WIPP in the 1980's;
  - Developed new coupled models (thermo, mechanical, hydro)
  - Expanded temperature range of known physical properties of salt with focused laboratory studies.
- EM continues to mine access drifts and install infrastructure using existing resources, to prepare for planned heater test which can inform future disposition plans.