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

Overview of EM Waste Disposition

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EM SSAB Chairs Meeting – Pasco, WA
April 23, 2014

Discussion Topics

- EM Waste Disposition Updates by Site
- LLW/MLLW Disposal Update
- Disposition Strategies
- Questions and Answers

OFFICE OF ENVIRONMENTAL MANAGEMENT

Waste Management Activities Comprise Half the EM Budget

Radioactive Tank Waste
$ 2,042M / 36%

Special Nuclear Materials and Used Nuclear Fuel**
$ 971M / 17%

Soil and Groundwater
$ 466M / 8%

EM's FY 2015 Budget Request - $5.622 Billion Total

Facility D&D
$ 992M / 18%

Transuranic & Solid Waste
$ 758M / 13%

Site Services*
$ 392M / 7%

*Includes Program Direction, Program Support, Technology Development & Deployment, Post Closure Administration and Community and Regulatory Support

**Includes Safeguards and Security

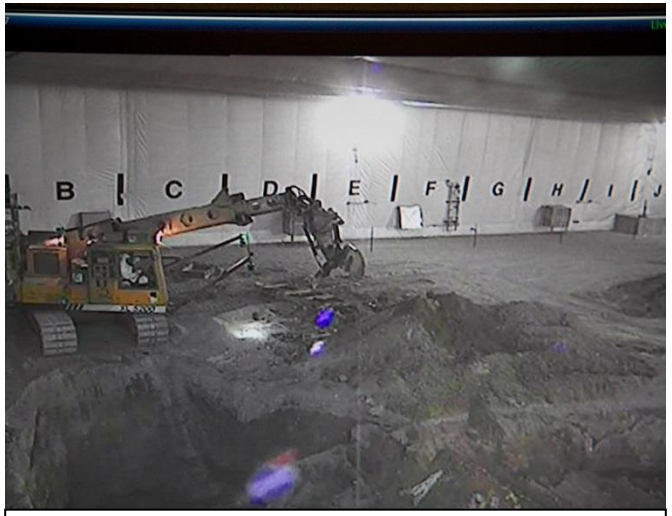
Los Alamos

- Despite current inability to ship to WIPP, we are on track to complete removal of 3706 cubic meters of TRU waste by June 30, 2014 , in accord with Framework Agreement

- FY2014 volume: 521 cubic meters
- Shipping for temporary staging at Waste Control Specialists
- Estimated 10 shipments a week for a total of up to100 shipments

Idaho

- Completed targeted exhumation at 3.22 out of a total of 5.69 acres at the Subsurface Disposal Area
  - Exhumations ongoing at Accelerated Retrieval Project VII and VIII enclosures
- Treated and repackaged over 5,000 of 6,000 sludge drum campaign
- Completed installation of sodium distillation system to treat reactive sodium remote-handled wastes
  - Operations to begin around June
- Completed Readiness Assessments for Integrated Waste Treatment Unit
  - Simulant testing will soon begin to support start of radioactive waste treatment



Targeted Waste Exhumations at Accelerated Retrieval Project VIII facility

Integrated Waste Treatment Unit Facility

Oak Ridge

- K-25 final phase demolition and waste disposal completed
- Increased focus on mercury cleanup at Y-12; completed conceptual design for new treatment facility
- CH TRU processing activities continue at TRU Waste Processing Center
- Evaluating options to mitigate impacts from inability to ship TRU offsite

Savannah River

- Reduced legacy CH-TRU stored down to 600 cubic meters from over 12,000 cubic meters
- Planning for transfer of lessons learned and equipment for use of TRUPACT-III at other sites
- Closed Tanks 5 and 6, which are the 5th and 6th tanks to be closed
- Continuing production of HLW canisters at the Defense Waste Processing Facility (over 3,700 since 1996)
- Continuing construction of the Salt Waste Processing Facility

Portsmouth/Paducah

Paducah

C-410 Feed Plant building slated for demolition in FY2014

Portsmouth

Cut & Cap at X-326 Process Building: More than 80 cell equivalents removed; more than 1,100 converters shipped

DUF6

13,579 metric tons DUF6 processed (>double FY2012 total) and 2,279,000 gallons hydrofluoric acid safely shipped in FY 2013

Hanford

- Disposed 15.6 million tons of contaminated material at the Environmental Restoration Disposal Facility since 1996, including recent disposal of the Plutonium Recycle Test Reactor
- Continuing construction activities for system to retrieve, package, and transport highly radioactive sludge from the K-West Basin for interim storage away from the Columbia River
- Plutonium Finishing Plant glove box removal 86% complete (204 of 238)

1,082-ton packaged PRTR being transported to ERDF for disposal

Construction of K-West Basin Annex for sludge retrieval project

Office of River Protection: Construction Continues at the Waste Treatment Plant

- FY2014 Planned work includes continuation of full construction of the Low Activity Waste Facility, Balance of Plant Facilities and Laboratory
- Resolution of technical issues

West Valley

- Following completion of waste incidental to reprocessing (WIR) determination, planning work is underway to ship WIR wastes to disposal site. Current plan is to complete the effort by the end of CY14

- Construction of HLW Storage Pad essentially complete

- Assembly of eight vertical storage casks completed and expect delivery of eight Multi-Purpose Canister Overpacks this Summer

- Deactivation of Main Plant continues: asbestos abatement, contaminated pipes, and vacuuming fine debris

SPRU

- Completed processing of tank sludge generated 28 liners of stabilized LLW for disposal at the Waste Control Specialists' Federal Waste Facility
- Resumed decommissioning activities in Building H2 and Building G2 enclosures

Moab

- To date in 2014, shipped over 427,784 tons of uranium residual radioactive material (cumulative 6.7 million tons) from Moab to our engineered disposal cell near Crescent Junction, Utah

- To date in FY 2014, extracted 5.4 million gallons of contaminated ground water and cumulatively 207.4 million gallons to date

Nevada

- Continued soil and groundwater remediation activities -- including characterization and monitoring of underground nuclear test contamination, cleanup of above -ground industrial sites and surface soil contamination

- Nevada National Security Site continues to serve an important cleanup mission as regional disposal facility for DOE LLW/MLLW:
  - FY13 Disposal: 1,099,000 cubic feet
  - FY2014 Forecast: 1,441,000 cubic feet
  - FY2014 to date: 67 percent of forecast

- Continuing working group discussions with state of Nevada on unique waste streams

Disposal Forecast at NNSS FY 2014 (cubic feet)

Generator Site	FY 2014 Forecast
Portsmouth GDP (OH)	532,000
Oak Ridge Reservation (TN)	239,000
Oak Ridge NNSA/Y-12 (TN)	151,000
Los Alamos National Lab (NM)	156,000
Idaho Site (ID)	72,000
Livermore Nat'l Lab (CA)	37,000
Paducah GDP (KY)	46,000
NNSA/Nuclear Fuel Services (TN)	79,000
Onsite NNSS (NV)	19,000
Savannah River (SC)	2,000
West Valley (NY)	12,000
All other sites	96,000
Total	**1,441,000**

- This forecast supports operational planning
- Some of the volume included within this forecasts may be dispositioned at other facilities

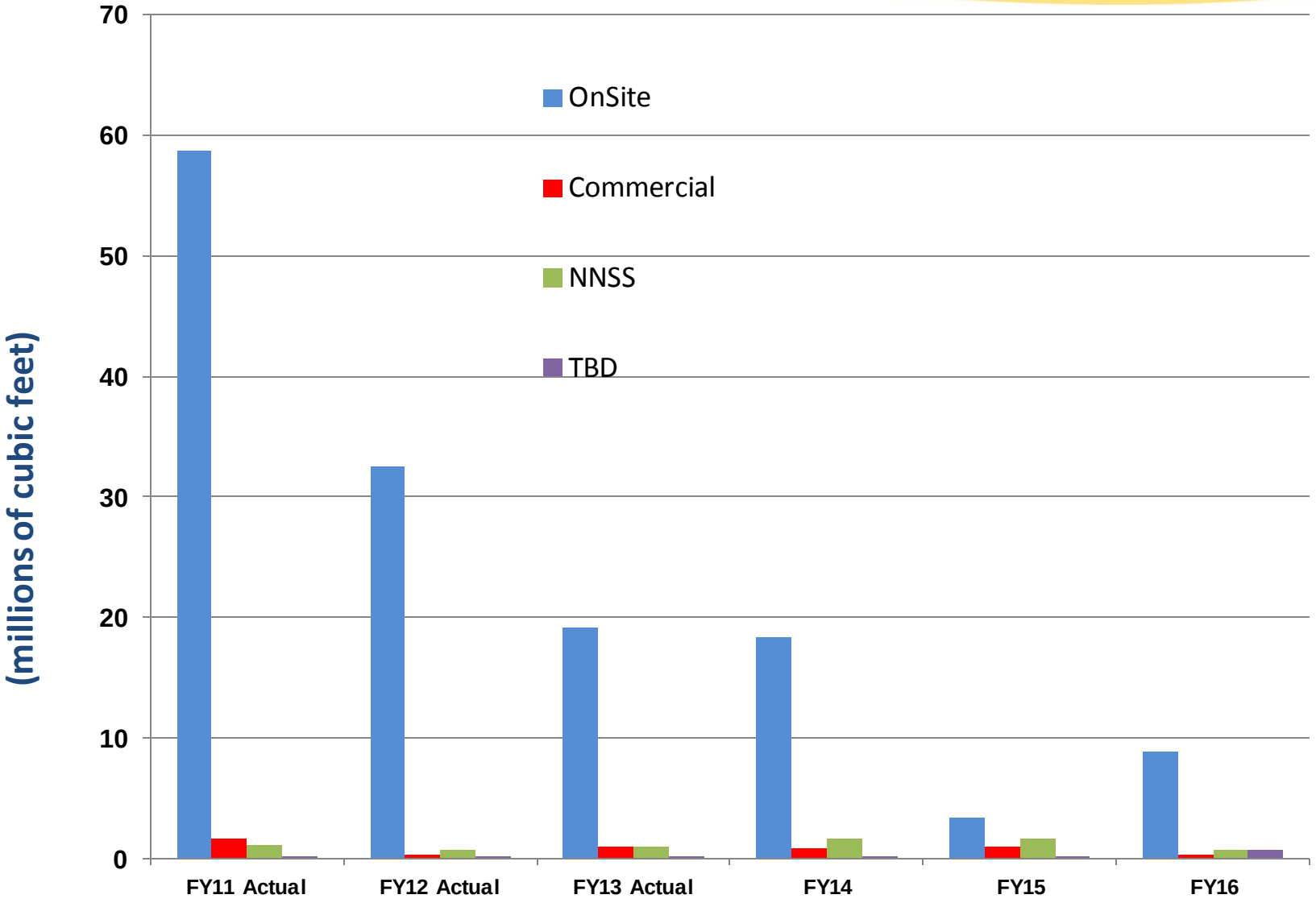
Commercial Disposal Options

- DOE policy supports consideration of commercial disposition options in addition to DOE options, when compliant, cost effective, and in the best interest of the U.S. government
- **Energy*Solutions* (Clive, 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

DOE LLW/MLLW Forecasts

- DOE updates its life-cycle LLW/MLLW forecasts annually. EM coordinates collection of DOE-wide data with other Program Offices – NNSA, SC, NE, and Naval Reactors
- This information publically available in the Waste Information Management System (WIMS) maintained by the Florida International University (FIU)
- FY 2014 forecasts are expected to be updated by April 30 and will be available at http://www.emwims.org/
- This data set reflects approved program baselines as late CY 13

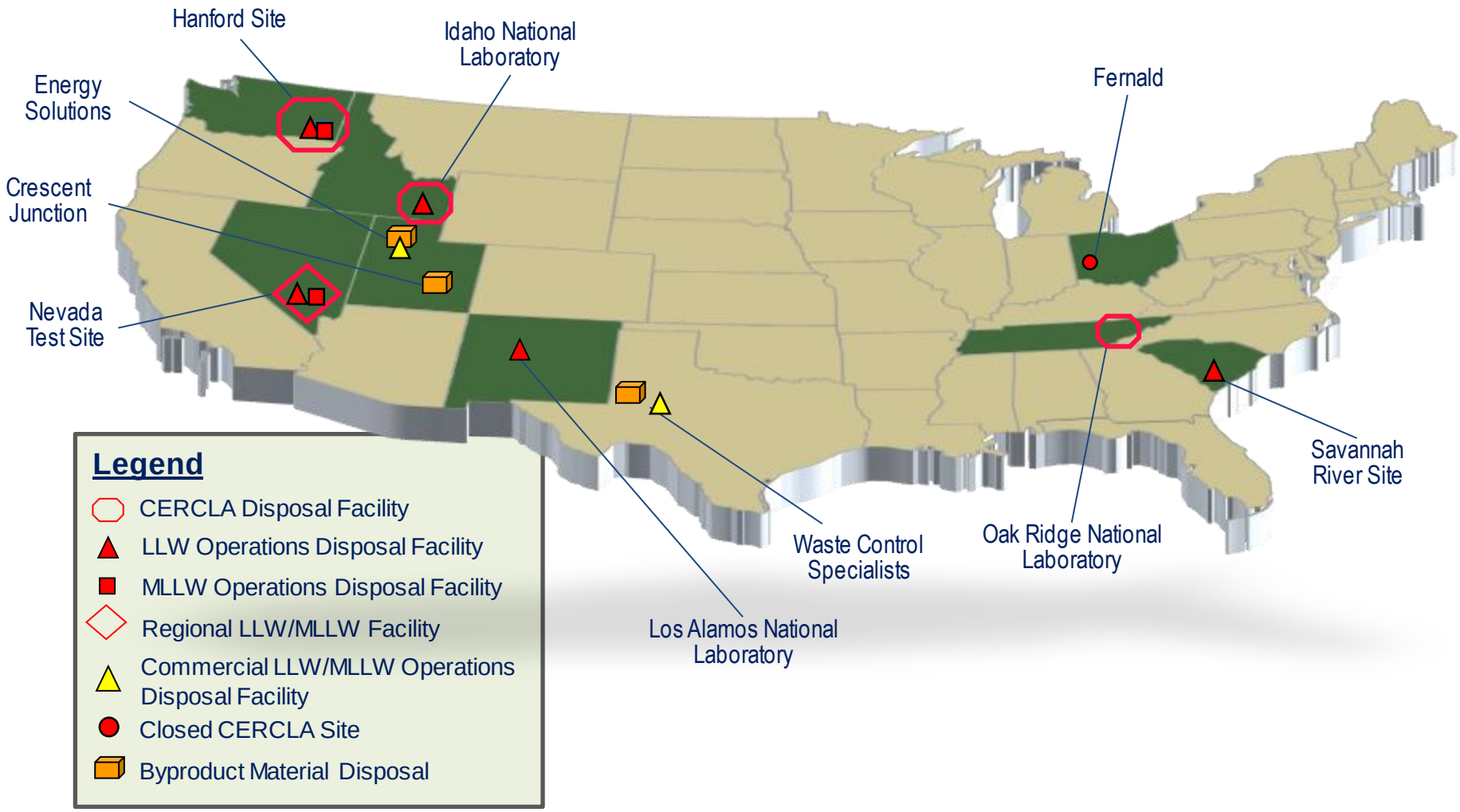
Complex-wide LLW/MLLW Disposal



Disposition Planning– LLW/MLLW

- EM recognizes the Chairs have particular interest in development of disposition strategies and communicating the current and potential plans
- WIMS was developed to provide publically available and interactive planning and mapping information for DOE LLW and MLLW streams
- LLW and MLLW system includes the greatest number of variables given the numerous treatment and disposal alternatives available to sites

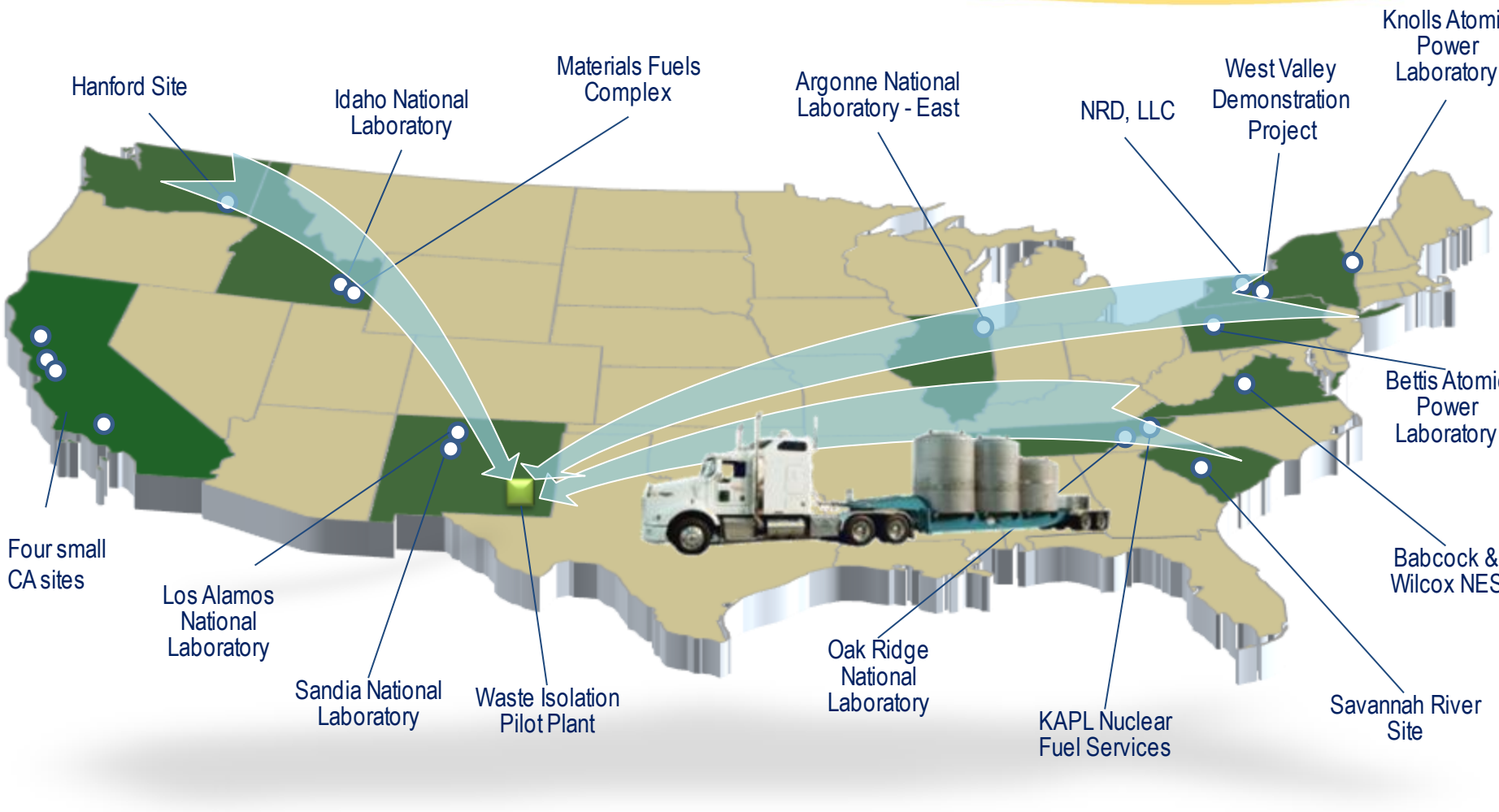
LLW/MLLW Disposition Complex



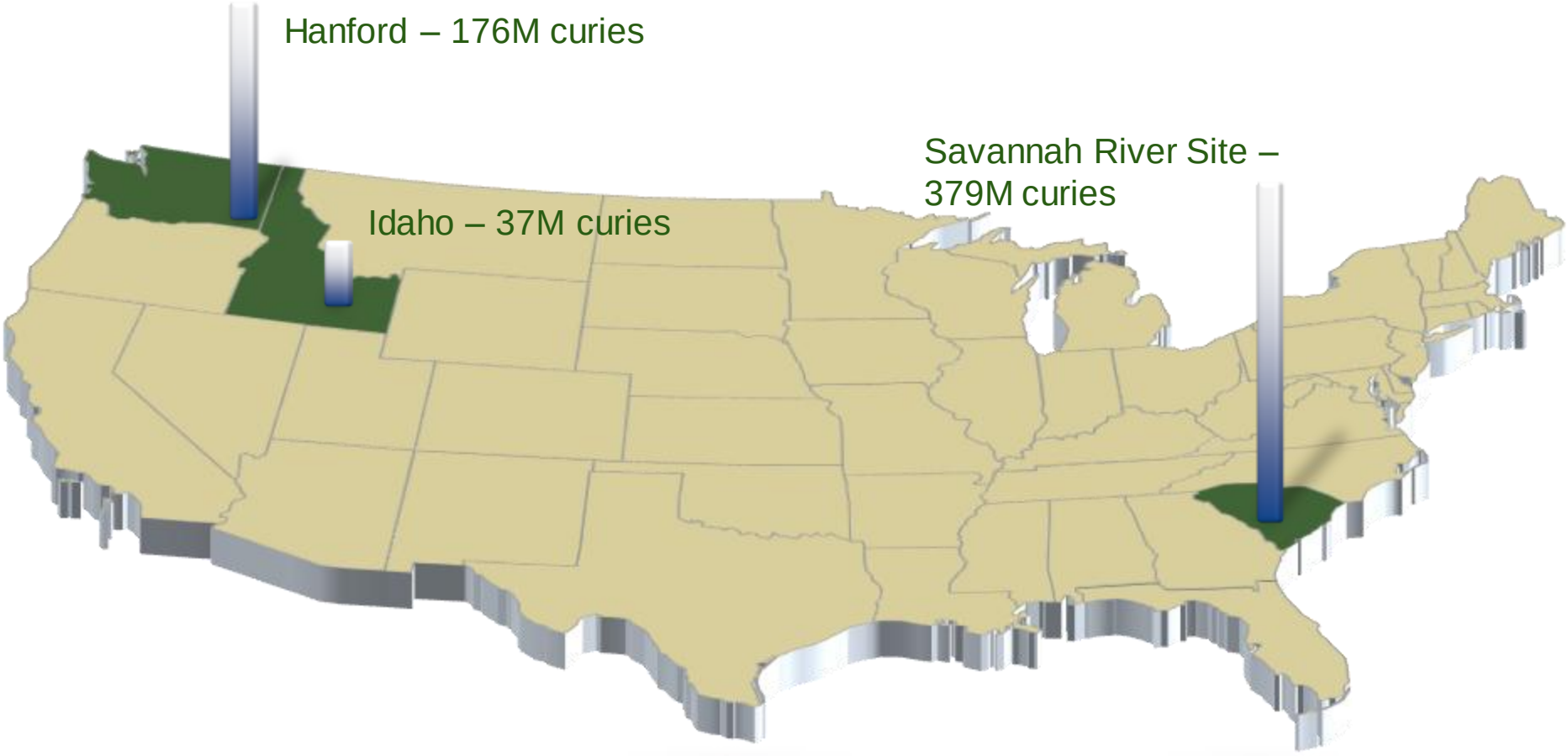
Disposition Planning – TRU/HLW

- Disposition strategies for defense TRU waste are largely defined, with larger sites generally shipping directly to WIPP
  - Small sites generally ship CH TRU to interim site for processing and/or certification prior to shipment to WIPP
  - To date, RH TRU has been shipped directly to WIPP
  - Evaluation is underway on future TRU inventory disposition that may be optimized by intersite shipments
  - Planning for temporary staging in light of current unavailability of WIPP is underway
- Disposition strategies for DOE HLW and SNF must await identification of a future Federal repository
  - Near term focus is on stabilization and safe, secure interim storage

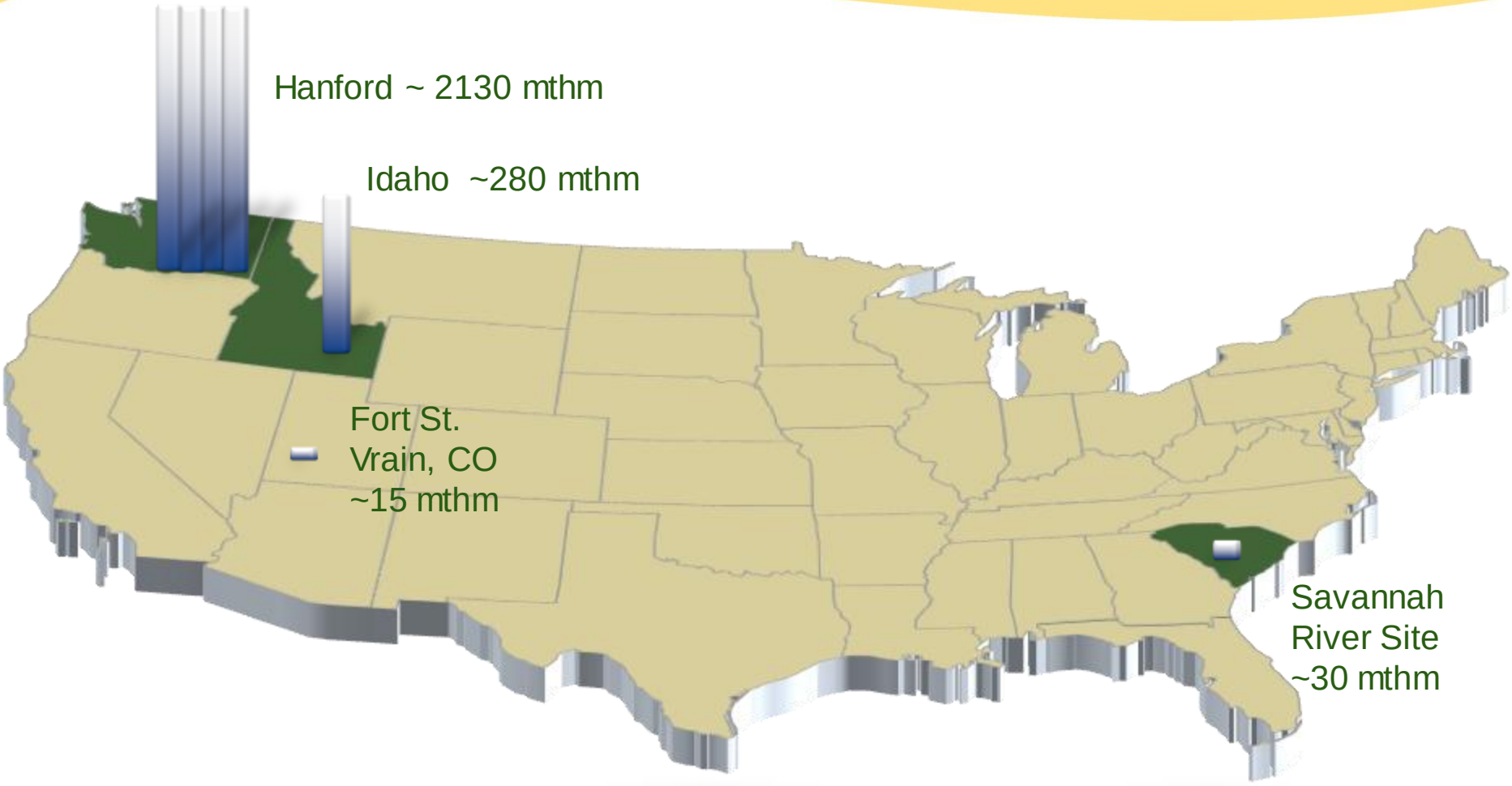
DOE TRU Waste Sites



DOE HLW Sites



DOE SNF Sites



In Closing…

- Continuing to make progress and optimize waste management system to ensure environmental cleanup can continue
  - Continued integration and flexibility are critical
  - Financial and economic factors present real constraints
  - Pending and contemplated regulatory changes will also have impact
- Given our experience and partnership with regulators and industry, we have ability to mitigate many of the impacts associated with upset conditions
- The Path Forward….
  - Continue close consultation with and among stakeholders
  - Ensure plans are risk informed
  - Continue to encourage innovation and identification of new options

Questions?