

## ***EM Waste and Materials Disposition & Transportation***

### National Transportation Stakeholders Forum

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## ***DOE's Radioactive Waste Management Priorities***

- Continue to manage waste inventories in a safe and compliant manner
- Address high risk waste in a cost-effective manner
- Maintain and optimize current disposal capability for future generations
- Develop future disposal capacity in a complex environment
- Promote the development of treatment and disposal alternatives in the commercial sector
- Review current policies and directives
- Provide needed oversight



### ***DOE Order 435.1, Radioactive Waste Management***

- DOE's waste management policy remains unchanged
  - DOE's *Waste Management Programmatic Environmental Impact Statement* and Records of Decision are still valid
- Nearly a decade has passed since last major revision
- Update planned to address multiple purposes
  - Incorporate lessons learned
  - Institutionalize informal guidance documents
  - Address changes in relevant statutes, regulations, and standards
  - Account for advances in technology
  - Address new and emerging DOE needs
- Progress to date
  - Conducted Complex-Wide Reviews to assess waste management activities and to support the update
  - Reviewed all DOE/NNSA sites that manage radioactive waste
  - Identified 69 Best Practices and 134 Areas for Improvement
  - Drafted report (expected to be final in May 2010)
  - Initiated team workshops to update DOE O 435.1



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### ***Highlights on LLW/MLLW Disposition Efforts***

- ARRA provides needed funding for solid waste disposition, soil and groundwater remediation, and facility decontamination and decommissioning projects
  - Increased volumes of LLW/MLLW are expected over next several years
- Pending EM cleanup and operations contracts include significant waste management scope
- To ensure disposal plans are optimized, EM provided enhanced guidance to sites to ensure all disposal alternatives are evaluated
- Continued use of onsite disposal at large cleanup sites
- Continued optimized operations of DOE disposal facilities, especially for those wastes that cannot be disposed at commercial facilities
  - Nevada Test Site (NTS) operates as regional LLW and MLLW disposal facility
  - New site-wide EIS underdevelopment, which will analyze continued use of NTS as regional disposal facility



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### Highlights on LLW/MLLW Disposition Efforts

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- Current Mixed Waste Disposal Unit at NTS closes November 2010
  - Conditional approval from State of NV for new mixed waste disposal cell
  - Final permit approval will be contingent upon the regulator approving the final design drawings to be provided by the Nevada Site Office later this year.
  - Design and construction contract awarded
  - RCRA storage permit under development
- Waste Control Specialists (WCS) received final license approval for commercial (Compact limited) and Federal LLW disposal facilities
  - DOE entered into agreement with TCEQ regarding coordination on Fed Facility and provided WCS written commitment regarding future ownership
- Toxic Substances Control Act Incinerator at Oak Ridge ceased operations last year and is in the midst of closure
  - DOE relying on commercial treatment alternatives
  - New complex-wide treatment contract(s) will soon be awarded
- Additional disposal alternatives are being sought
  - On site cells, NTS mixed waste cell, WCS federal disposal facility



### DOE LLW/MLLW Challenges

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- Uncertainty in continuous availability of disposal capacity
  - Regulatory and policy changes have curtailed disposal of some depleted uranium streams
- Potential challenges and changes to DOE policies and strategies
- Problematic waste streams remain and will continue to be generated through additional facility D&D work
- Contemplated changes in NRC waste classification systems and waste related guidance documents
- Possible increased disposal demand to address disused sealed sources
- Inquiries from outside DOE for access to DOE low-level and mixed low-level waste facilities, due to changing circumstances and reduced commercial disposal access for Class B & C wastes



### DOE LLW/MLLW Forecasts

- DOE updates its life-cycle LLW/MLLW forecasts annually and makes this information publically available in the Waste Information Management System (WIMS)
- Annual update recently completed – will be available in WIMS within a few weeks
- Approximately 4.7 million cubic meters of LLW/MLLW will be generated FY2010-2015
  - Vast majority targeted to be disposed on site
  - DOE plans to continue use of Nevada Test Site and, as appropriate, commercial disposal
  - Some large volume TBD streams exist

WIMS can be found at <http://wims.arc.fiu.edu/WIMS>



### Offsite Transportation is Expected to Double in FY 2010

- EM completed ~8,000 offsite shipments during the first half of FY 2010
  - Increase in number of shipments due to ARRA funding
  - There have been 7 incidents for the first half of FY 2010
  - Issued a memo to the field sites on following the requirements of DOE M 460.2-1 for preplanning and communication

FY08 Shipments	
•TRU	800
•LLW	6,650 <sup>1</sup>
•MLLW	720
•Other	430 <sup>2</sup>
<b>Total</b>	<b>8,600</b>

FY09 Shipments	
•TRU	970
•LLW	4,800 <sup>1</sup>
•MLLW	530
•Other	400 <sup>2</sup>
<b>Total</b>	<b>6,700</b>

FY10 Shipments <sup>3</sup>	
•TRU	500
•LLW	7,270 <sup>1</sup>
•MLLW	170
•Other	60 <sup>2</sup>
<b>Total</b>	<b>8,000</b>

<sup>1</sup> Shipment definition revised to reflect: 1 railcar = 1 shipment

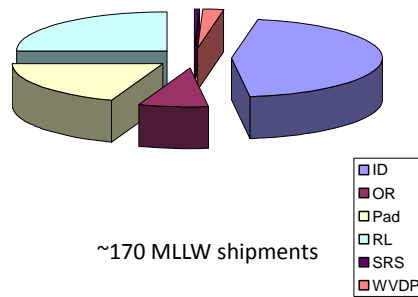
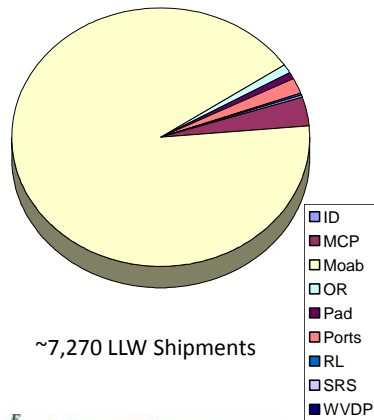
<sup>2</sup> "Other" includes non-Rad HAZMAT

<sup>3</sup> Through 2nd Quarter FY10



### Shipping locations . . .

- Moab is the big shipper of LLW
- ID is the big shipper of MLLW



### Update on EM HLW and spent fuel management efforts

- EM will continue to safely store, retrieve, and treat/repackage HLW and spent fuel
- FY 2011 budget request fully funds tank waste management and treatment activities across the complex
  - Hanford WTP (\$740M) to accelerate completion of design
  - SRS Salt Waste Processing Facility (\$288M) construction and pre-operations
  - Idaho Sodium Bearing Waste Treatment (\$6.5M) to complete construction activities
  - Tank waste retrievals at Hanford and Savannah River (\$95M) to meet regulatory commitments
- EM will assess technical needs and fund research and development to ensure continued safe, cost-effective operations, treatment, and extended storage
  - FY 2011 budget request includes \$60M for Tank Waste Technologies
  - With goal to optimize tank waste disposition resulting in technology insertion points into the tank waste system that will yield significant cost savings and reduce the period of execution
- EM will support the Blue Ribbon Commission, as needed



### ***Update on the GTCC LLW Disposal EIS***

- Alternatives for Greater-than-Class C (GTCC) waste are still being evaluated via an Environmental Impact Statement (EIS). The alternatives are:
  - Deep geologic disposal at WIPP
  - Enhanced near surface trench and vault disposal at Hanford, INL, LANL, NTS, OR, SRS, and WIPP Vicinity
  - Intermediate depth borehole disposal at the same enhanced near surface locations, as above, except SRS and OR.
- Analyzes approximately 12,000 m<sup>3</sup> of wastes requiring disposal over several decades
- Working with Tribal Nations to include their perspective in EIS
- Goal is to issue Draft EIS in Summer 2010 and Final EIS in 2011
  
- **Before issuing a Record of Decision, DOE must submit a Report to Congress on disposal alternatives and await Congressional action.**

For additional information on the GTCC EIS visit <http://www.gtcceis.anl.gov/>



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### ***EM's Mercury Management Project***

- *The Mercury Export Ban Act of 2008* requires DOE to provide storage and long-term management of mercury (non-radioactive) generated in the U.S.
  - Draft EIS published in January 2010
  - Sites analyzed in the EIS are Hanford (WA); INL (ID); Grand Junction (CO); Hawthorne (NV); SRS (SC); Andrews (TX); and Kansas City (MO)
  - WCS facility in Andrews, TX, is Preferred Alternative
- Critical Milestones
  - Final EIS, Record of Decision and selection of mercury storage site(s) -- Fall 2010
  - Mercury storage facility ready to accept mercury – 01/01/13
  - Ban on export of mercury from the U.S. effective – 01/01/13
  - DOE mercury storage facility operating under RCRA permit – 01/01/15

For additional information visit <http://www.mercurystorageeis.com/>



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## Nickel Sales Agreement



9,700 tons of nickel ingots located in Paducah

5,600 tons of shredded nickel scrap located in Oak Ridge  
(photo not available)

↑  
each ingot is 24"-25" tall, 16"-19" in diameter, weight ~1 U.S. ton.

\*Both inventories are contaminated with uranium and trace quantities of technetium, neptunium, and plutonium

- May 14, 2010, DOE issued a solicitation for disposition of ~15,300 tons of classified nickel\* recovered from uranium enrichment process equipment
- Evaluate proposals – Summer 2010
- Finalize Site-Specific Environmental Assessment – Winter 2010
- Implement Sales Agreement – Spring 2011
  - The Buyer must declassify and decontaminate the nickel prior to gaining title to the nickel
  - The cleaned nickel will be used to produce high quality end products to be used in a controlled environment; all aspects of the process, production, and end use will be controlled



## In Closing...

“An important part of a sound, comprehensive and long-term domestic nuclear energy strategy is a well-considered policy for managing used nuclear fuel and other aspects of the back end of the nuclear fuel cycle.”  
*Presidential Memorandum to Secretary Chu, 29 January 2010*

- EM’s efforts directly support the nation’s energy goals by providing a reliable waste and materials disposition system
- EM has 20 years of progress and experience in safely managing radioactive wastes and nuclear materials and is well positioned for continued success
  - EM is working to accelerate footprint reduction and solid waste disposition, and is targeting technological advances to reduce life-cycle cost of tank waste and nuclear materials disposition
  - Transportation safety will continue to be a major focus of EM activities
- A vigilant commitment to continued safety and progress and a productive investment in technology is needed for EM to maintain our momentum
- EM has a strong partnership with our regulators, host communities, Tribal governments, stakeholders and industry, which must be maintained to support the DOE waste and materials disposition system and support EM cleanup goals

