Environmental Management
West Valley Demonstration Project (WVDP)
Cleanup Vision

U.S. Department of Energy
Bryan Bower
March 2011

Environmental Management: A National Responsibility

✓ We reduce risks and protect our workers, our communities and the environment through cleanup

✓ Our work is urgent and essential to the health and economic vitality of our communities and the nation and positions our Sites for future missions and use

✓ Our mission is not discretionary – it is a Federal obligation to address the cold war environmental legacy cleanup and honor our regulatory commitments

✓ We have demonstrated value for the American Taxpayer by delivering significant progress in the past several years in reducing risks and the overall liability – but our work is not done

✓ The Environmental Management portfolio is one of our nation’s largest liabilities – we have a responsibility to relieve future generations of this environmental and financial liability

✓ Time is not on our side – costs and risks increase over time
Key Slides from EM Budget Briefing

U.S. DEPARTMENT OF ENERGY

EM FY 2012
Presidential Budget Request

Key Slides from EM Budget Briefing

Leveraging strategic investments to meet compliance and maintain cleanup momentum

EM’s Cleanup Vision: Journey To Excellence

Building on the APRA momentum, the EM team will:

- Complete the three major tank waste construction projects:
  - Sabot Ground Storage Facility by 2011 (operational 2012)
  - Cold War Processing Facility by 2014 (operational 2014)
  - Waste Treatment Plant by 2018 (operational)

- Reduce the life-cycle costs:
  - Recovery not re-invest.
  - Less than 10 percent of total costs.
  - Transuranic Tank Waste Technology - $19 billion reduction
  - High Level Waiver Program - $2 billion reduction

- Disposition 50% of legacy TRU waste by 2015

- All EM cleanup in wastes by 2021, except for harvest

- De-Operation the EM legacy footprint 50% by 2015

- In 2015, legacy waste reduction was 6,097,727 US tons.
  - by 2015, 6,548,685 US tons. For EM cleanup.
  - by 2015, 3,548,685 US tons. For EM cleanup.

- By 2020, EM legacy cleanup will be virtually completed.
  - Hanford will be the only large site remaining.
  - Minor cleanup will remain at Savannah River, Portsmouth, and Oak Ridge.

EM’s Environmental Management

safety performance cleanup closure

www.em.doe.gov
Leveraging strategic investments to meet compliance and maintain cleanup momentum

Program Priorities

- Essential activities to maintain a safe, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent (used) nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, processing, and disposition
- High priority groundwater remediation
- Transuranic and mixed low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning (D&D)

FY 2012 Budget Request
Key Slides from EM Budget Briefing

Leveraging strategic investments to meet compliance and maintain cleanup momentum

WVDP’s Cleanup Vision

How does the WVDP Vision align with the EM Vision?
WVDP 2020 Cleanup Vision

Complete WVDP Cleanup Vision by 2020

Building on the ARRA momentum, the WVDP team will:

✓ Complete HLW activities at the WVDP
   • Relocate 275 HLW canisters to a new on-site dry cask storage facility
   • Maintain the waste tanks in a dry and stable condition pending future decision making
✓ Ship and dispose all Low Level and Transuranic Waste
✓ Complete demolition of Main Plant Process Building, Vitrification Facility, and Remote Handled Waste Facility
✓ Disposition and demolish all remaining surplus facilities (43 facilities)
✓ Protect the groundwater: Ensure the on-going performance of the Permeable Treatment Wall
✓ Remove and dispose of all contaminated soils from Waste Management Areas (WMA) #1 & #2
✓ Complete Phase 1 Decommissioning per Record of Decision by 2020

Return on American Taxpayers’ Investment at WVDP - Key Cleanup Accomplishments

<table>
<thead>
<tr>
<th>Cleanup Scope</th>
<th>Accomishments To Date</th>
<th>Accomishments By FY 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid HLW Solidified</td>
<td>All 600,000 gallons of liquid HLW solidified into 275 canisters</td>
<td>By 2015, all 275 HLW canister placed into interim dry storage awaiting permanent disposal decision</td>
</tr>
<tr>
<td>TRU Waste Disposed</td>
<td>1,650 of 2,280 cubic meters TRU waste disposal ready</td>
<td>All TRU waste disposed (2,280 m³)</td>
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<tr>
<td>HLW Tanks Stable</td>
<td>98% of curies removed, Tank &amp; Vault Drying System installed</td>
<td>HLW tanks dry and stable awaiting Phase 2 Decision</td>
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<tr>
<td>Groundwater Plume Remediated</td>
<td>Permeable Treatment Wall (PTW) installed</td>
<td>Plume being remediated by PTW</td>
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<tr>
<td>Main Plant Process Building and Vitrification Facility</td>
<td>MPPB Decontamination 70% complete</td>
<td>Main Plant Process Building and Vitrification Facility Demolition Complete</td>
</tr>
<tr>
<td>Remote Handled Waste Facility</td>
<td>RHWF in use for remote waste processing</td>
<td>Remote Handled Waste Facility Demolition Complete</td>
</tr>
<tr>
<td>WMA 1 &amp; WMA 2</td>
<td>Active WIMAs</td>
<td>All Soil Remediation Complete</td>
</tr>
<tr>
<td>Balance of Site Facilities Removal</td>
<td>18 of 61 Facilities Removed</td>
<td>All 61 Facilities Removed</td>
</tr>
<tr>
<td>WRC Licensed and State-Licensed Disposal Areas (NDA &amp; SDA)</td>
<td>Both Disposal Areas (NDA and SDA) under interim caps*</td>
<td>Capped and stable awaiting Phase 2 Decision</td>
</tr>
</tbody>
</table>

* SDA capped by New York State prior to Consent Decree
Economic Benefits at West Valley

- Received $63M in Recovery Act funds
- 84 jobs created and 19 jobs saved with Recovery Act funds
- $45M of Recovery Act funding paid to date
- $19M in Recovery Act prime and subcontracts awarded to small business
- $13M of $60M in Base prime and subcontracts awarded to small businesses in FY 2010

Report reflects jobs and small business reporting through the end of FY 2010

Recovery Act Performance Metrics at West Valley

<table>
<thead>
<tr>
<th>Measure</th>
<th>Actuals to Date</th>
<th>Targets to Date</th>
<th>Total Target</th>
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<tbody>
<tr>
<td>CH TRU Waste Processed</td>
<td>213</td>
<td>181</td>
<td>181</td>
</tr>
<tr>
<td>(Certification Ready)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>C:tric meters</td>
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Graphic reflects key performance metrics through December 2010

Note: Key Recovery Act TRU waste metrics at West Valley have been completed, but Recovery Act work at the site is on-going in the facility demolition preparation.
Phased Decisionmaking

Phase 1 Decommissioning

- Phase 1 Facility Disposition
  - Relocate 275 HLW Canisters to new dry cask storage facility
  - Demolish Vitrification Facility (Vit) and Main Plant Process Building (MPPB)
  - Remove ancillary facilities
  - Ship legacy Low Level Waste

- Phase 1 Soil Remediation
  - Remove Below Grade Portion of MPPB and Vit (including source area of plume)
  - Remove Lagoons and Liquid Waste Treatment Facilities
  - Ship Legacy TRU Waste
  - Remove Remote Handled Waste Facility and remaining ancillary facilities
  - Remediate all WMA 1 & 2 Soil

Phase 2 Decommissioning

- Phase 2 Decisions
  - HLW Canister Shipment (permanent disposal decision)
  - Phase 2 Decision for:
    - Waste Tank Farm
    - NRC-licensed Disposal Area (NDA)
    - State-licensed Disposal Area (SDA)
    - Construction and Demolition Debris Landfill (CDDL)
    - Non-source area of groundwater plume

Phase 1 Decommissioning

- Below Grade Portion of MPPB and Vit Removed
- Vitrification Facility (Vit) Removed
- Remote Handled Waste Facility Removed
- Waste Tank Farm Dried and Monitored
- Lagoons and Water Treatment Removed
- Main Plant Processing Building (MPPB) Removed
- HLW Canister Interim Storage
- State-Licensed Disposal Area (SDA) Monitored
- NRC-Licensed Disposal Area (NDA) Monitored

Key:
- Phase 1 Facility Disposition
- Phase 1 Soil Remediation
- Phase 2 Decision

Investing Our Talents in Our Future
West Valley Demonstration Project is a Sound Investment

- Overall alignment with New York State and our regulators on Phase 1 Decommissioning, and general support from our stakeholders
- Additional $20M annually (2012 – 2016) allows WVDP to complete its cleanup vision by 2020 saving $120M LCC and reducing completion date by 4 years
- All the waste packaged and ready to go, awaiting decision on a future disposal site for TRU waste
- Every taxpayer dollar invested in this project (both Federal and state) is precious, and provides significant economic benefit to the region with an emphasis on small business
- As demonstrated by our outstanding safety and environmental record, we are committed to worker and public safety, and protection of the environment

Back up Information
# WVDLP's Accomplishments by Year

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<tr>
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<tbody>
<tr>
<td>Liquid HLW Solidification</td>
<td>Preliminary Planning</td>
<td>Preliminary Planning</td>
<td>Complete Eng &amp; Design of Containers</td>
<td>Relocate all HLW Canister to new Onsite Storage System</td>
<td>-</td>
<td>HLW Canister Project completed</td>
</tr>
<tr>
<td>TRU Waste Disposed</td>
<td>WVES Packaging &amp; Shipping</td>
<td>WVES Packaging &amp; Shipping</td>
<td>Resume Legacy LLW Waste Shipping</td>
<td>Ship all legacy waste with a pathway for disposal (3,760 m3)</td>
<td>Resolve all legacy waste issues (GTCC EIS ROD) Complete TRU and GTCC Waste Shipping (2,283 m3)</td>
<td>All Legacy Waste removed from WVVP</td>
</tr>
<tr>
<td>Main Plant Process Building and Vitrification Facility</td>
<td>Phase I O&amp;D</td>
<td>Phase I O&amp;D</td>
<td>Begin Pre-Demo Characterization</td>
<td>Demolition Prep Complete</td>
<td>Complete MPPB and Vit Demolition (21,000 m3)</td>
<td>MPPB and Vit Facility Demolition Complete</td>
</tr>
<tr>
<td>Remote Handled Waste Facility</td>
<td>Last Major Structure To be Demolished &amp; Removed</td>
<td>RMF in use for sorting, segregating and packaging RH waste</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Complete RHWF Demolition (3,000 m3) LLW Waste</td>
</tr>
<tr>
<td>WMA 1 &amp; WMA 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Complete WMA #1 and #2 Soil Removal (60,000 m3)</td>
</tr>
<tr>
<td>Balance of Site Facilities Removal</td>
<td>15 Facilities Removed Demolished</td>
<td>-</td>
<td>-</td>
<td>33 Facilities Removed</td>
<td>13 Facilities Removed</td>
<td>All remaining 43 Balance of Site Facilities Removed</td>
</tr>
</tbody>
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