West Valley Demonstration Project Decommissioning Status

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Department of Energy

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Phased Decision Making

In 2010, DOE published the Final Environmental Impact Statement and Record of Decision (ROD) for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project (WVDP) and the Western New York Nuclear Service Center (WNYNSC)

- **Phased Decisionmaking ROD**
- **Phase 1 Decommissioning Plan**

**Phase 1 Decommissioning**
(Complete by 2020*)

- **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 (including source area of plume), Vit, 01-14
  - Remove Lagoons and Liquid Waste Treatment Facility
  - Ship Legacy TRU Waste
  - Remove Remote Handled Waste Facility and remaining ancillary facilities
  - Remediate all WMA 1 & 2 Soil

* Based on funding at $75 M/yr

**Phase 2 Decommissioning**
(Decisions made by 2020)

- **Final Decommissioning ROD**
- **Phase 2 Decommissioning Plan**

**Phase 2 Decisions**

- HLW Canister Shipment (permanent disposal decision)
- Closure decision for Waste Tank Farm
- Closure decisions for NRC-licensed Disposal Area and State-licensed Disposal Area
Phase 1 Facility Disposition

- **Scope of work includes:**
  - Complete high level waste (HLW) canister relocation at WVDP
  - Process, ship and dispose of all legacy waste off-site
  - Demolition and removal of the Main Plant Process Building (MPPB)
  - Demolition and removal of the Vitrification (Vit) Facility
  - Complete all work described in the Performance Work Statement
    - Remove ancillary facilities
    - Manage and maintain site infrastructure
    - Conduct environmental monitoring
    - Maintain the underground storage tanks, the NRC-licensed disposal area, and the Permeable Treatment Wall

- **Scope of work performed by CH2M HILL B&W West Valley, LLC (CHBWV) through contract awarded in 2011**
• Plan scopes of work for Phase 1 soil remediation in ~2018*
• Award contract(s) in ~2019*
• Planned scopes of work will include:
  – Remove below grade portions of MPPB and vitrification facility, including the source area of the plume
  – Remove the lagoons and liquid waste treatment facility
  – Ship the legacy transuranic (TRU) waste (potentially)
  – Remove the RHWF and remaining ancillary facilities (after shipment of TRU waste)
  – Remediate WMA 1 & 2 soil

*Schedules for Phase 1 soil remediation are contingent upon the end date of the Phase 1 facility disposition scope of work.
At the end of Phase 1 decommissioning (Phase 1 facility disposition plus Phase 1 soil remediation) five facilities will remain:

- Tank farm with the tank and vault drying system
- HLW storage casks
- NDA with cap and barrier wall
- SDA with cap and barrier wall
- Construction and Demolition Debris Landfill
The Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center addresses the developed portion of the site in 10 waste management areas (WMA)
WMA 1 includes:

- Main Plant Process Building (MPPB)
- Plant office building
- Vitrification Facility
- Load-in/Load-out Facility
- Utility Room
- Fire Pump House
- Water storage tank
- Laundry
- Fuel Receiving and Storage
## WMA 1 Status

<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Plant Process Building</td>
<td>Removed: 86% of contaminated vessels, 84% of piping and conduit, 95% of asbestos</td>
<td>Demolished to grade</td>
<td>Removal of below-grade structures and source area of the plume</td>
</tr>
<tr>
<td>Vit Facility</td>
<td>99% decontaminated: contaminated equipment removed, floor cleaning &amp; electrical isolations underway; cold chemical building demolished to the slab</td>
<td>Demolished to the slab</td>
<td>Removal of below-grade structures</td>
</tr>
<tr>
<td>Fuel Receiving &amp; Storage</td>
<td>Vent building demolished; pool drained and cleaned; surface &amp; airborne contamination remain</td>
<td>Remains in place</td>
<td>Removal of above- and below-grade structures</td>
</tr>
<tr>
<td>Plant Office Building</td>
<td>Rooms emptied, asbestos removal underway</td>
<td>Demolished to grade</td>
<td>Removal of below-grade structures</td>
</tr>
<tr>
<td>Facility</td>
<td>January 2014 Status</td>
<td>Planned for End of Phase 1 Facility Disposition</td>
<td>Planned for End of Phase 1 Decommissioning</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Utility Room</td>
<td>In service, contains significant quantity of asbestos</td>
<td>Demolished to slab</td>
<td>Removal of below-grade structures</td>
</tr>
<tr>
<td>Load-in/Load-out</td>
<td>In service, available for load-out of HLW canisters</td>
<td>Demolished to the slab</td>
<td>Removal of below-grade structures</td>
</tr>
<tr>
<td>Water Storage Tank &amp; Fire Pump House</td>
<td>In service</td>
<td>Operational</td>
<td>Removal of above- and below-grade structures</td>
</tr>
<tr>
<td>Laundry Room</td>
<td>Demolition Ready</td>
<td>Demolished to the slab</td>
<td>Removal of below-grade structures</td>
</tr>
<tr>
<td>01-14 Building</td>
<td>Demolished to the slab</td>
<td>Demolished to the slab</td>
<td>Removal of below-grade structures</td>
</tr>
</tbody>
</table>
1. Low-Level Waste Treatment Facility 2 (LLW2)
2. Lagoon 2
3. Lagoon 3
4. Lagoon 4
5. Lagoon 5
6. Old interceptor
7. New interceptors
8. Vitrification Test Facility
9. Vehicle Repair Shop
10. Test and Storage Building
11. Maintenance Shop
12. O2 building
13. Lagoon 1 area
<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Level Waste Treatment Facility 2 &amp; Lagoons 2, 3, 4 &amp; 5</td>
<td>Operational</td>
<td>Operational</td>
<td>Removal; installation of hydraulic barrier wall</td>
</tr>
<tr>
<td>Old &amp; new interceptors</td>
<td>Operational</td>
<td>Operational</td>
<td>Removal</td>
</tr>
<tr>
<td>Vitrification Test Facility</td>
<td>Operational</td>
<td>Facility &amp; foundation removed; area restored</td>
<td>NA</td>
</tr>
<tr>
<td>Vehicle Repair Shop Test &amp; Storage Building</td>
<td>Facilities removed, foundations remain</td>
<td>Facilities removed, foundations remain</td>
<td>Removal</td>
</tr>
<tr>
<td>Maintenance Shop</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O2 Building</td>
<td>Facility removed, foundation remains</td>
<td>Foundation removed; area restored</td>
<td>NA</td>
</tr>
<tr>
<td>Lagoon 1</td>
<td>Inactive</td>
<td>Inactive</td>
<td>Removal</td>
</tr>
</tbody>
</table>
WMA 3

1. Permanent Ventilation System building
2. Supernatant Treatment System support building
3. Equipment shelter and condensers
4. Con-Ed building
5. High-Level Waste (HLW) transfer trench
6. Two underground, 760,000 gallon carbon steel tanks: 8D-1 and 8D-2
7. Two underground, 14,300 gallon stainless steel tanks: 8D-3 and 8D-4
## WMA 3 Status

<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Ventilation System</td>
<td>Operational</td>
<td>Operational</td>
<td>Remains in place</td>
</tr>
<tr>
<td>Supernatant Treatment System Support Building</td>
<td>Operational</td>
<td>Operational</td>
<td>Remains in place</td>
</tr>
<tr>
<td>Equipment Shelter (ES) &amp; Condensers</td>
<td>Condensers isolated; ES partially operational</td>
<td>Facilities removed; foundation remains</td>
<td>Removal of foundation</td>
</tr>
<tr>
<td>Con-Ed Building</td>
<td>In-active</td>
<td>Facility removed; underlying tanks remain</td>
<td>Removal of foundation</td>
</tr>
<tr>
<td>High-Level Waste Transfer Trench</td>
<td>In-place</td>
<td>All lines &amp; trench isolated</td>
<td>Remove piping; trench remains</td>
</tr>
<tr>
<td>Tanks 8D-1 &amp; 8D-2</td>
<td>Isolated</td>
<td>Isolated</td>
<td>Remain in place</td>
</tr>
<tr>
<td>Tanks 8D-3 &amp; 8D-4</td>
<td>Isolated</td>
<td>Isolated</td>
<td>Remain in place</td>
</tr>
</tbody>
</table>
WMA 3 Status of Tanks

• Tank & Vault Drying System (T&VDS) installed and operational in December 2010
  • Status of tank liquids
    • Tank 8D-1 – all liquid evaporated
    • Tank 8D-2 – all liquid evaporated
    • Tank 8D-3 – all liquid evaporated
    • Tank 8D-4 – 4,630 gallons of liquid/sludge remain
  • Status of vaults and containment pans
    • Tank 8D-1 vault liquid is below level indicator (<2 inches and may be dry)
    • Tank 8D-2 vault liquid is below level indicator (<2 inches and may be dry)
    • All liquid in containment pans of tanks 8D-1 and 8D-2 evaporated
    • Tank 8D-3/8D-4 vault liquid evaporated

• At the end of Phase 1 decommissioning the T&VDS will be operational; tanks and their support structures will remain in place
The Construction and Demolition Debris Landfill (CDDL) Status

- CDDL is inactive
- Monitoring and maintenance will continue through Phase 1 decommissioning
WMA 5

1. Lag Storage Area 1
2. Lag Storage Area 2
3. Lag Storage Area 3
4. Lag Storage Area 4
5. Shipping depot
6. Chemical Process Cell
   Waste Storage Area
7. Remote-Handled Waste Facility (RHWF)
8. Lag Storage Building
9. Four Hazardous Waste Storage Lockers
<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag Storage Area 1</td>
<td>Demolished to slab</td>
<td>Foundation remains</td>
<td>Remove foundation</td>
</tr>
<tr>
<td>Lag Storage Area 2</td>
<td>Operational</td>
<td>Waste removed; hardstand remains</td>
<td>Remove hardstand</td>
</tr>
<tr>
<td>Lag Storage Areas 3 &amp; 4 and Shipping Depot</td>
<td>Operational</td>
<td>All waste removed; facilities remain</td>
<td>Remove facilities &amp; foundations</td>
</tr>
<tr>
<td>Chemical Process Cell Waste Storage Area</td>
<td>Operational</td>
<td>Demolish facility &amp; foundation</td>
<td>NA</td>
</tr>
<tr>
<td>Remote-Handled Waste Facility</td>
<td>Operational</td>
<td>Operational</td>
<td>Remove after remote-handled TRU waste has been shipped off-site</td>
</tr>
<tr>
<td>Lag Storage Building</td>
<td>Demolished to slab</td>
<td>Foundation remains</td>
<td>Remove foundation</td>
</tr>
<tr>
<td>Hazardous Waste Storage Lockers</td>
<td>Demolished</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
1. Rail spur
2. Demineralizer sludge ponds (inactive)
3. Equalization basin
4. Equalization tank
5. Sewage Treatment Plant
6. Low-level waste rail packaging and staging area
7. Cooling tower
8. Two waste tank farm test towers
9. Old warehouse
10. Product Storage Area
11. HLW storage pad
### WMA 6 Status

<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail Spur</td>
<td>Operable</td>
<td>Operational</td>
<td>Operational</td>
</tr>
<tr>
<td>Demineralizer Sludge Ponds</td>
<td>Inactive</td>
<td>No further action</td>
<td>Area restored</td>
</tr>
<tr>
<td>Equalization Basin</td>
<td>Operational</td>
<td>Remove facility &amp; foundation</td>
<td>Area restored</td>
</tr>
<tr>
<td>Equalization Tank</td>
<td>Operational</td>
<td>Remove facility &amp; foundation</td>
<td>Area restored</td>
</tr>
<tr>
<td>Sewage Treatment Plant</td>
<td>Operational</td>
<td>Remove facility &amp; foundation</td>
<td>Area restored</td>
</tr>
<tr>
<td>Rail Packaging &amp; Staging Area</td>
<td>Operational</td>
<td>Operational</td>
<td>Removed</td>
</tr>
</tbody>
</table>
## WMA 6 Status continued

<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling Tower</td>
<td>Demolished</td>
<td>Remove foundation</td>
<td>Area restored</td>
</tr>
<tr>
<td>Waste Tank Farm Test Towers</td>
<td>Demolished</td>
<td>Remove foundation</td>
<td>Area restored</td>
</tr>
<tr>
<td>Old Warehouse</td>
<td>Demolished</td>
<td>Area graded</td>
<td>Area restored</td>
</tr>
<tr>
<td>Product Storage Area</td>
<td>Demolished</td>
<td>Area graded</td>
<td>Area restored</td>
</tr>
<tr>
<td>HLW Storage Pad</td>
<td>Pad construction complete</td>
<td>HLW canisters stored in casks on the pad</td>
<td>HLW canisters stored in casks on the pad</td>
</tr>
</tbody>
</table>
WMA 7

NRC-Licensed Disposal Area Status

- A geomembrane cap and barrier wall were installed in 2008 to prevent water infiltration
- Liquid Pretreatment System is operable
- The NDA will remain in place during Phase 1 decommissioning
State-Licensed Disposal Area Status

- The geomembrane cap and barrier wall prevent groundwater infiltration into the disposal area
- The leachate treatment facility was clean-closed and no longer stores mixed waste
- The SDA will remain in place during Phase 1 decommissioning
1. Drum Cell
2. Subcontractor Maintenance Area
3. NDA Trench Container Area Pad
# WMA 9 Status

<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum Cell</td>
<td>Operational; all waste has been removed</td>
<td>Facility &amp; foundation removed; area restored</td>
<td>No further action</td>
</tr>
<tr>
<td>Subcontractor Maintenance Area</td>
<td>Operational</td>
<td>Operational</td>
<td>Removed</td>
</tr>
<tr>
<td>NDA Trench Container Area Pad</td>
<td>Operational</td>
<td>Operational</td>
<td>Removed</td>
</tr>
</tbody>
</table>
WMA 10

1. Gatehouse
2. Administration Building
3. Warehouse
4. Meteorological Tower
5. Environmental Laboratory

Orthoimage of WMA 10
## WMA 10 Status

<table>
<thead>
<tr>
<th>Facility</th>
<th>January 2014 Status</th>
<th>Planned for End of Phase 1 Facility Disposition</th>
<th>Planned for End of Phase 1 Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gatehouse</td>
<td>Operational</td>
<td>Operational</td>
<td>Remains operational</td>
</tr>
<tr>
<td>Administration Building</td>
<td>Operational</td>
<td>Facility &amp; foundation removed; area restored</td>
<td>No further action</td>
</tr>
<tr>
<td>Warehouse</td>
<td>Operational</td>
<td>Facility &amp; foundation remain</td>
<td>Facility &amp; foundation removed</td>
</tr>
<tr>
<td>Meteorological Tower</td>
<td>Operational</td>
<td>Operational</td>
<td>Remains operational</td>
</tr>
<tr>
<td>Environmental Laboratory</td>
<td>Demolished</td>
<td>Foundation removed; area restored</td>
<td>No further action</td>
</tr>
</tbody>
</table>
At the end of Phase 1 decommissioning (Phase 1 facility disposition plus Phase 1 soil remediation) five facilities will remain:

- Tank farm with the tank and vault drying system
- HLW storage casks
- NDA with cap and barrier wall
- SDA with cap and barrier wall
- Construction and Demolition Debris Landfill
The Phase 2 decommissioning decision includes WVDP and WNYNSC facilities:

- NRC-Licensed Disposal Area
- State-Licensed Disposal Area
- Waste Tank Farm
- Construction and Demolition Debris Landfill
- Contaminated soils and sediments
  - Non source area of the plume
  - Cesium prong
  - Streams
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- **(Complete by 2020*)**
  - 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 (including source area of plume), Vit, 01-14
    - Remove Lagoons and Liquid Waste Treatment Facility
    - Ship Legacy TRU Waste
    - Remove Remote Handled Waste Facility and remaining ancillary facilities
    - Remediate all WMA 1 & 2 Soil

* Based on funding at $75 M/yr

**Phase 2 Decommissioning**
- **(Decisions made by 2020)**
  - HLW Canister Shipment (permanent disposal decision)
  - Closure decision for Waste Tank Farm
  - Closure decisions for NRC-licensed Disposal Area and State-licensed Disposal Area