



# Weekly Progress



AMERICAN RECOVERY & REINVESTMENT ACT

Week Ending September 23, 2011



CHPRC-01531

Contract DE-AC06-08RL14788  
Modification MO47

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## OVERVIEW

CH2M HILL Plateau Remediation Company (CHPRC) is using funds from the American Recovery and Reinvestment Act (Recovery Act) to accelerate critical environmental cleanup across the Central Plateau and the 100K Area along the Columbia River to help pursue the U.S. Department of Energy (DOE) “2015 Vision” to shrink the Hanford Site cleanup footprint.

### RL-0011 PLUTONIUM FINISHING PLANT D&D

CHPRC is accelerating critical decontamination and decommissioning work to cleanout and prepare the Plutonium Finishing Plant (PFP) for demolition ahead of the Tri-Party Agreement milestone of September 2016.

### RL-0013 SOLID WASTE STABILIZATION & DISPOSITION

CHPRC is accelerating cleanup of Hanford’s legacy waste and fuels, including retrieving, repackaging, and shipping transuranic (TRU) waste and shipping mixed low-level waste (MLLW) and low-level waste (LLW) for treatment and/or disposal.

### RL-0030 SOIL & GROUNDWATER REMEDIATION

In the ongoing effort to protect the Columbia River, CHPRC is constructing two groundwater treatment facilities; installing 265 wells for monitoring, extracting, and remediating groundwater; and decommissioning 280 wells that are no longer of service.

### RL-0040 NUCLEAR FACILITY D&D REMAINDER OF HANFORD

Across the Central Plateau and along the outer zone of the Hanford Site, CHPRC is remediating 24 waste sites and decommissioning and demolishing (D&D) 34 facilities to reduce mortgage, surveillance, and maintenance costs on buildings that are no longer of service. The scope also includes cleanup along the outermost edges of the Hanford Site at the Arid Lands Ecology (ALE) Reserve and North Slope, preparing the U Plant for a first-of-its-kind canyon demolition, and preparing to disposition radioactive railcars in the 200 North Area.

### RL-0041 100K AREA REMEDIATION

CHPRC is demolishing 15 reactor support facilities and sampling and/or remediating 23 waste sites to shrink the cleanup footprint of two reactors, K East and K West, located in the 100K Area along the Columbia River.

## For More Information

To find out more about Recovery Act progress at the Hanford Site, visit [www.hanford.gov/recovery](http://www.hanford.gov/recovery).

For information about CHPRC, including weekly Recovery Act newsletters and videos, visit [www.plateauremediation.hanford.gov](http://www.plateauremediation.hanford.gov) or contact [chprcc@rl.gov](mailto:chprcc@rl.gov).

## SUMMARY

The following chart outlines CHPRC’s progress on its main Recovery Act work goals. Progress on subprojects and other Recovery Act-funded activities are detailed throughout this report and accompanied by a short progress video available on [www.youtube.com/hanfordplateau](http://www.youtube.com/hanfordplateau).

### PLUTONIUM FINISHING PLANT D&D



### SOLID WASTE STABILIZATION & DISPOSITION



### SOIL & GROUNDWATER REMEDIATION



### NUCLEAR FACILITY D&D



### 100K AREA REMEDIATION



\*Key Performance Parameters (KPP) are specific items (wells, buildings, etc.) included in the Target. "Overall" indicates the total number completed with Recovery Act funds. "Completed" marks that CH2M HILL has completed a KPP.

## ACCOMPLISHMENTS

### RL-0011 Nuclear Materials Stabilization & Disposition

#### RL-0011.R1: Plutonium Finishing Plant D&D

ACTIVITY	PFP WASTE REMOVAL & DISPOSITION	
	<i>Week of Sept 23, 2011</i>	<i>Completed to Date with Recovery Act Funding</i>
<b>KPP-1, Lab &amp; Process Areas Ready for Demo</b>		
Gloveboxes/hoods removed or dispositioned in place	-	130 gloveboxes/hoods
Add'l gloveboxes ready for removal/size reduction	-	1 gloveboxes/hoods
MLLW/LLW shipped	11 m <sup>3</sup>	2,942 m <sup>3</sup>
TRU shipped	9 m <sup>3</sup>	696 m <sup>3</sup>
Non-radioactive waste shipped	-	30 m <sup>3</sup>
Process transfer line removed	-	581 feet
Process vacuum system piping removed	-	1,210 feet
Asbestos removed	72 feet	15,528 feet
<b>KPP-2 Fuel Vaults, Buildings Ready for Demo</b>		
Fuel vaults and ancillary buildings ready for demo	-	30 structures
Ancillary buildings/structures removed or demolished	-	20 structures

Operations, maintenance, and D&D management began reconstituting the field work teams to most effectively utilize the PFP-experienced staff that will remain following workforce restructuring.

#### *Process and Laboratory Areas*

With all 97 gloveboxes and hoods previously removed from the four 234-5Z laboratory and backside vault areas, only miscellaneous cleanout actions remain. Cleanout work was completed last week in six more rooms, including 142, 143, and 149 of the former Analytical Laboratories, and rooms 183, 185, and 189 of the Plutonium Process Support Laboratory.

In the three former process areas, glovebox disposition and area cleanout were previously completed in the Room 235D Radioactive Acid Digestive Test Unit process area, while 47 gloveboxes remain to be removed from 10 of the 22 rooms in the former RMA and RMC Line process areas. All four of the HA-14 gloveboxes in the RMA Line (HA-14CC, DC, S and P) have now been removed from building ventilation. Three of these are being readied for near-term removal from the process area, while glovebox HA-14CC will be removed with the HA-13 gloveboxes at the time the wall between room 235A-1 and A-2 is removed. All external isolations and process equipment removal has been completed on glovebox HC-11 in the RMA Line, and an initial decontamination wipe-down was completed.

#### *Infrastructure, support systems, and equipment removal*

All 112 HEPA filters once installed in deactivated final filter room 311 have now been removed for disposal; a similar effort was previously completed for filter room 316. Work to dispose of highly contaminated process transfer line piping resumed, with all 47 feet of previously removed pipe size-reduced over the past two weeks and loaded into non-standard waste containers for transfer to waste operations.



*Workers remove one of 112 HEPA filters from a deactivated filter room at the Plutonium Finishing Plant in August 2011.*

Photo 1



Photo 2

One wall in final filter room 311 at the Plutonium Finishing Plant after removal of 112 contaminated HEPA filters. CHPRC removed a total of 224 HEPA filters from two final filter rooms as part of the effort to prepare the PFP facilities for demolition. The filters helped control ventilation at the facility and were one of several hazards that must be removed before PFP can be demolished.

### 2736-Z/ZB Vault Complex

Work to ready the 2736-ZB Vault Support Facility for demolition was suspended until later in October as a result of higher priority commitments for the CHPRC D&D Project staff that had been assigned to this work. Five of the six buildings in and around the vault complex are ready for demolition, with just a few weeks of work remaining in 2736-ZB. The six buildings are scheduled for demolition by the end of December.

## RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: Mixed Low-Level Waste (MLLW)/Low-Level Waste (LLW) Treatment

ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION
Ship 1,800 m <sup>3</sup> of MLLW/LLW for treatment and disposal	<i>Total Completed with Recovery Act funds</i>
	<ul style="list-style-type: none"> <li>• 2,096 m<sup>3</sup> shipped               <ul style="list-style-type: none"> <li>○ 1,814 m<sup>3</sup> treated and disposed</li> <li>○ 282 m<sup>3</sup> at offsite treatment facilities awaiting processing. Treatment is scheduled for FY11 and 1<sup>st</sup> quarter FY12</li> </ul> </li> </ul>

Four shipments (43.8 m<sup>3</sup>) of MLLW debris from the Waste Retrieval Project were made to PFNW for treatment by macroencapsulation. The processed M/LLW will be returned to Hanford for disposal in the Mixed Waste Disposal Units.

#### RL-0013C:R1.2: TRU Waste

ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION <i>Total Completed with Recovery Act funding</i>
Retrieve 2,500 m <sup>3</sup> of suspect TRU waste	<ul style="list-style-type: none"> <li>• 43 m<sup>3</sup> are staged, pending shipment</li> <li>• 2,585 m<sup>3</sup> shipped to a treatment, storage, or disposal facility</li> </ul>
Retrieve 50 m <sup>3</sup> of suspect remote-handled TRU waste	<ul style="list-style-type: none"> <li>• 2 m<sup>3</sup> are staged, pending shipment.</li> <li>• 86 m<sup>3</sup> shipped to a treatment, storage, or disposal facility</li> </ul>

CHPRC completed its final Recovery Act Key Performance Parameter (KPP) for solid waste stabilization and disposition, completing and surpassing retrieval of 2,500 m<sup>3</sup> of TRU waste. CHPRC used Recovery Act funds to accelerate retrieval of TRU waste from underground storage in trenches in the 3A, 4B, and 12B burial grounds. Containers in the trenches ranged in size and contents, including drums and large boxes that have been in the ground since as early as the 1970s. Many of the containers had deteriorated over the years in storage and required additional shoring or support to be removed from the trenches, often by large cranes. Removing the waste was part of CHPRC's goal to help remove waste from the Hanford Site and to help pursue the DOE goal to disposition 90 percent of legacy TRU waste from across the DOE complex by the year 2015. Completing this goal marks the timely completion of all CHPRC's Recovery Act goals for managing legacy waste and fuels at the Hanford site. The work has significantly reduced onsite waste inventories and expanded CHPRC capabilities for removing, processing and disposing of waste.

At the 4B burial ground, 220 drums (45.8 m<sup>3</sup>) were shipped to CWC and 120 drums (25.0 m<sup>3</sup>) to PFNW from Trench 7. From Trench 11, one 9x 5 x 5 ft box (6.4 m<sup>3</sup>) was shipped to PFNW. One "10L" (~110-gallon) container was vented and filled one standard waste box (SWB) and one 9 x 5 x 5 container in preparation for shipping next week. Mobile Drum Venting System (MDVS) and Portable Assay operations were completed; these systems were installed with Recovery Act funds to support TRU retrieval activities. The final ground-penetrating radar (GPR) scan was completed at 4B Trench 11. Backfilling, cleanup, and radiological down-posting were performed at 4B Trench 7. Lay-up activities continued to close out work at the 4B/4C worksite. Drums from 4B Trench 7 were batched for shipments next week. Drums from 4B Trench 7 were overpacked into 85-gallon drums and an SWB. Miscellaneous debris from 4B Trench 11 was overpacked into a 9 x 5 x 5 container.

At the 12B burial ground, workers shipped 116 drums (24.1 m<sup>3</sup>) and 21 boxes (14.6 m<sup>3</sup>) to CWC, vented 4 drums in the Drum Venting System 2, and completed loading of 8 x 4 x 4 ft. boxes for shipment to PFNW and SWBs to CWC.

#### *TRU Repackaging & Shipments*

ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION <i>Total Completed with Recovery Act funding</i>
Repackage 850 m <sup>3</sup> of WIPP certifiable TRU waste	<ul style="list-style-type: none"> <li>• 1,226 m<sup>3</sup> have been repackaged</li> </ul>
Disposition 2,000 m <sup>3</sup> of contact-handled TRU waste	<ul style="list-style-type: none"> <li>• 2,510 m<sup>3</sup> have been disposed</li> </ul>

With Recovery Act funds, CHPRC completed 217 TRUPACT-II shipments since shipments resumed in March 2010. In conjunction with the Central Characterization Program, 77 shipments were completed to Idaho and 140 were sent to the Waste Isolation Pilot Plant. There are no additional shipments planned with Recovery Act resources.



**RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone**

RL-0030.R1: Central Plateau Soil &amp; Groundwater

ACTIVITY	Complete to Date with Recovery Act funds
Install 265 wells and/or boreholes along the river and in the Central Plateau	303
Decommission 280 old wells and boreholes that are no longer of service	280
Construct the 200 West Groundwater Treatment Facility	100% complete

*200 West Groundwater Treatment Facility*

Recent construction of the process and transfer facilities included (listed by facility):

- *Process buildings*
  - Radiological Building: Concrete-penetrating floor sealer placement and construction punchlist items continued.
  - Biological Treatment Building and Pad: Construction Acceptance Testing (CAT) in all areas, construction punchlist activities continued. Grouting of equipment and touch-up painting continued. Hydrostatic testing is complete; 122 of 122 tests were completed.
- *Transfer buildings*
  - Extraction Building #1: Construction punchlist items continued. Acceptance Test Procedure (ATP) continues.
  - Extraction Building #2: Construction punchlist items continued. ATP continued.
  - Injection Building #1: Construction punchlist items continued. ATP continues. Epoxy floor installation in progress.
  - Injection Building #2: Construction punchlist items continued. CAT is complete.
- Startup and Testing: Of 29 CATs total to complete, 26 are completed and 3 are active.
- The project remained focused on the execution of 10 CATs associated with the KPP due Sept. 30; all the CATs are now complete.

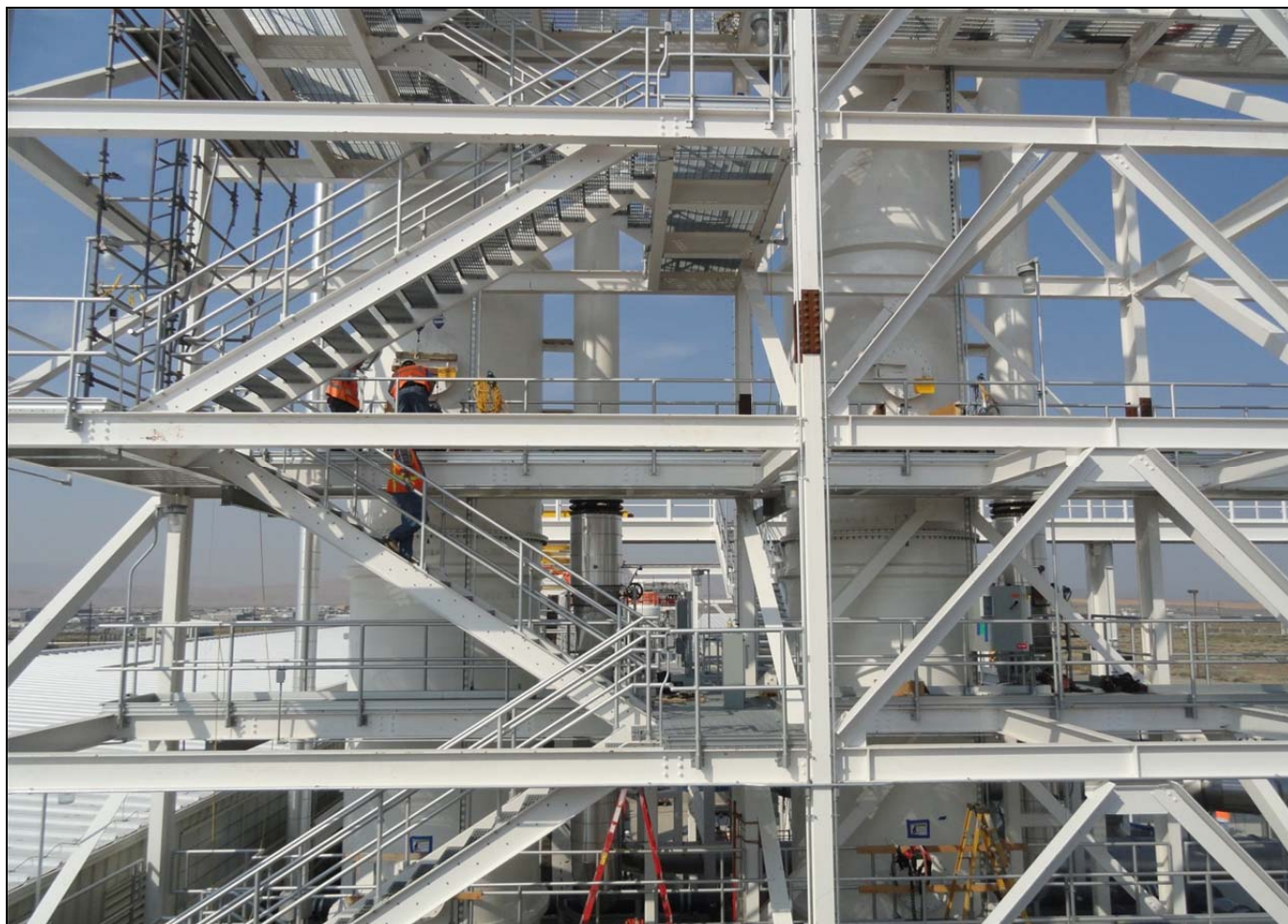


Photo 3

Workers complete the Recovery Act construction for what will be Hanford's largest groundwater treatment facility to date – the 200 West Groundwater Treatment Facility.

## RL-0040 Nuclear Facility D&D – Remainder of Hanford

### RL-0040.R1.1: U Plant/Other D&D

#### CENTRAL PLATEAU FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

- 211U Cold Chemical Makeup Tank Farm
- 211UA Cold Chemical Makeup Tank Farm Addition
- 203UX Gas Storage Facility
- 2701M Office Bldg
- 272E Fabrication, Mockup Shop Bldg
- 2716E Power Maintenance Storage Bldg
- 2722W Welding Laboratory Bldg
- 224UA UO3 Calcination/Load-out Facility
- 2710W Coal Handlers Shed\*
- 2701EC 209E Guard Station\*
- 2902E Water Storage Tank\*
- 2734EA Gas Cylinder Storage Bldg
- 275E Carpenter Shop Bldg
- MO104 Mobile Office
- MO405 Mobile Office
- MO840 Mobile Office
- X8 Motor Car Shed
- 224U UO3 Plant Concentration/Load-out Bldg
- 284WB Package Boiler Plant
- 209EA 90 Day Storage Pad\*
- 2902W Water Storage Tank\*
- 284E Power House & Steam Plant

TOTAL: 170,926 square feet

#### PLANNED FOR D&D/IN PROGRESS

- 209E Critical Mass Laboratory
- 284W Power House & Steam Plant
- 2718E 209E Fissile Material Storage\*

\*Not part of the Key Performance Parameter

CHPRC and subcontractors AGECE and Central Pre-Mix prepared to pour the last of a planned 25,281 cubic yards into 221-U Canyon void spaces, pouring grout across part of the canyon deck as part of the structure's final demo-ready configuration. Grouting of ventilation ducts and completion of the deck pour remain before the Sept. 30 deadline for project completion.

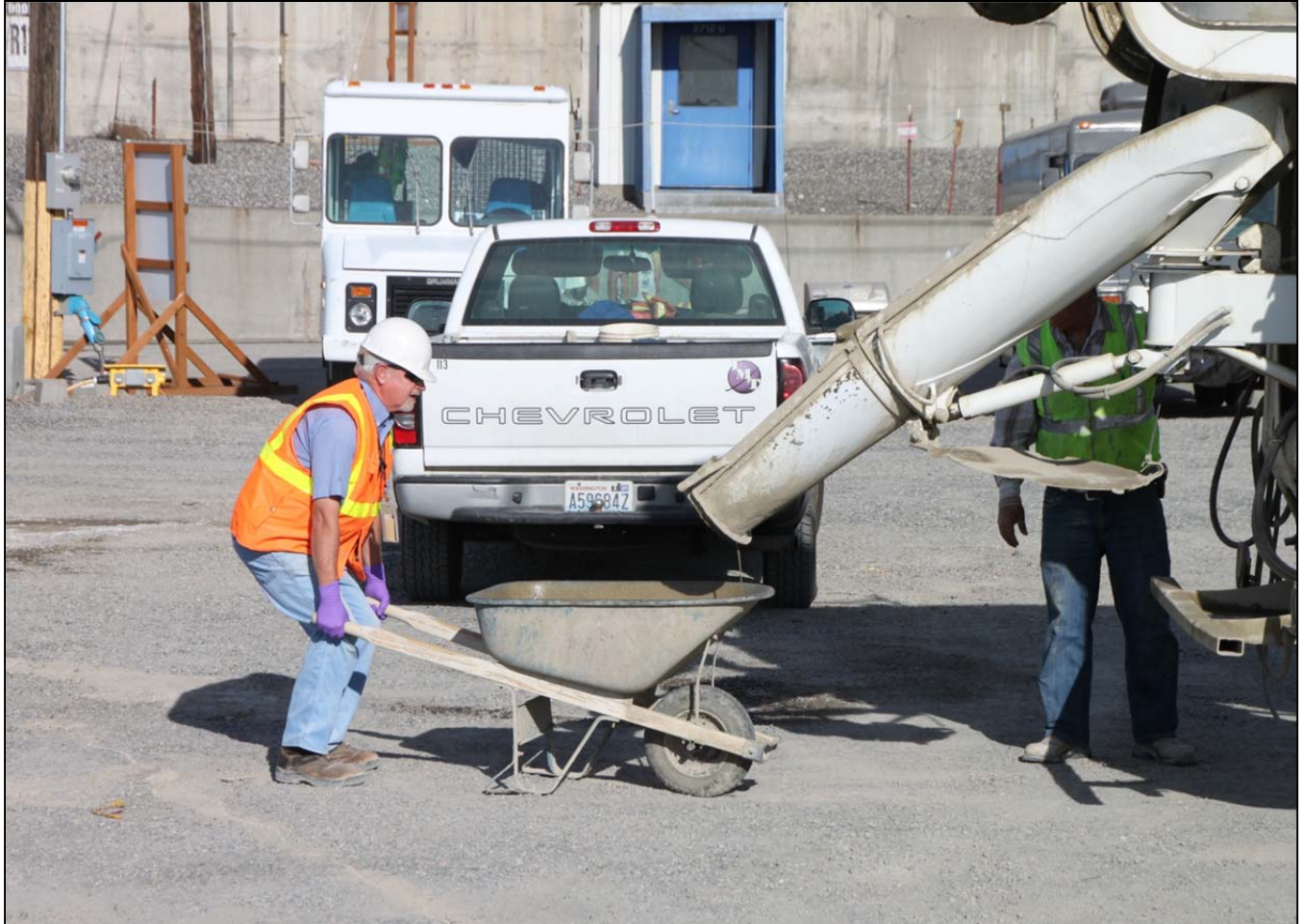


Photo 4

CHPRC quality assurance subcontractor Inter-Mountain Testing picks of a batch of some of the final grout to be placed inside U Canyon. All process cells are complete, with grouting of ventilation ducts remaining before a final pour onto the canyon deck that will complete grouting of canyon void spaces in preparation for the building's eventual demolition.

#### *200 West Area Industrial Facilities*

Demolition is nearly complete on the 284-W Power House.



Photo 5

*Demolition is nearly complete at the 284-W Power House. CHPRC crews process and loadout debris as dust-suppression water is collected on the site.*



Photo 6

*A CHPRC crane operator has his powered air purifying respirator unit surveyed as he takes a break during demolition of the 51,000-square-foot 284-W Power House.*



Photo 7

Waste containers are loaded at the loadout queue at the 284-W Power House demolition. Crews have safely been disposing of up to 75 containers a day as debris from the demolition is removed from the site.



Photo 8

With only minor loadout and cleanup remaining at the 284-W Power House, workers from the 284-E and 284-W demolitions gather for a congratulatory group shot.

### 209-E Criticality Mass Laboratory

CHPRC crews are size-reducing Tank 106, the last of the 11 contaminated slab tanks in the facility. Upon removal of the tank, the 209-E facility will be downgraded to a Less Than Hazard Category 3 (non-nuclear) facility and demolished.

### RL-0040.R1.2: Outer Zone D&D/Waste Sites

#### OUTER ZONE FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

212N Storage Building	6652M Fallout Laboratory
212P Electrical Storage & Transformer Shop	6652R Acid Storage Shed
212R Storage Building	6652C Space Science Laboratory
614 Monitor Station	6652CSHED Storage Building
646 Radioecology Field Laboratory	6652D Pump House
6652G ALE Field Storage Building	6652T Fire Protection Lower Pump House
6652H ALE Laboratory 1	6652U Rattlesnake Mountain Upper Pump House
6652I ALE Headquarters	623A Plant Radio Relay Bldg
6652J ALE Laboratory II	T520-6 Navy MARS Radio Station
6652S Sentry Shed*	6631 Radio Telescope Pedestal*
6634 ENW Tower and Building*	6630 Hodges Well Pumphouse*
6635 Crown Castle/Cingular Tower and Building*	6636 Columbia Communication Tower and Building*
6637 Tri City Amateur Radio Tower and Building*	6633 Franklin County Communication Building*

6632 Verizon Telephone Enclosure\*

TOTAL: 62,748 square feet

\*Not part of the Key Performance Parameter

*North Slope Debris Removal*

Decommissioning of two wells on the North Slope of the of the Hanford Reach National Monument (HRNM) is complete. With demolition and cleanup on the Arid Lands Ecology Reserve completed in November 2010 and cleanup of debris sites completed on North Slope in July 2011, CHPRC has now completed its 290-square-mile HRNM footprint reduction goal with Recovery Act funds.

*D&D of Railcars Located on the 212-R Rail Spur*

All railcars have been removed from the 212-N site, with demobilization under way.

*Waste Sites*

Recent activities regarding the outer zone waste sites included (listed by operable unit or site):

- *200-MG-1*
  - 216-S-19: Revegetation is complete with closure documentation awaiting final regulatory signature.
  - 216-S-26: Revegetation is complete with closure documentation awaiting final regulatory signature.
  - 600-281: Revegetation is complete, the Remedial Action Report (RAR) was approved, and the reclassification form has been signed.
  - 600-228: Revegetation is complete, the RAR was approved, and the reclassification form has been signed.
- *200-CW-3*
  - The CW-3 Operable Unit closure documentation is with the Regulator for final signature. CHPRC used Recovery Act funds to remediate the 200-CW-3 waste sites, including three former pond sites associated with the 212-NPR interim fuel storage buildings, which CHPRC demolished with Recovery Act funds.
- *BC Control Area*
  - DOE-Richland Operations Office (DOE-RL) and regulator comments on the On-Scene Coordinator Report have been incorporated. The document is on schedule to receive DOE-RL approval, formal transmittal, and release into the administrative record within the next two weeks.

**RL-0041 Nuclear Facility D&D – River Corridor Closure Project****RL-0041.R1.1: 100K Area Remediation****100K AREA FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS**

- 183KW Chlorine Vault
- 183.1KW Headhouse
- 183.2KW Sedimentation Basin
- 183.3KW Filter Basin
- 183.7KW Pipe Tunnel
- 110KE Gas Storage Facility
- 110KW Gas Storage Facility
- 1605KE Guard House
- 1605KW Guard House
- 181KE River Pumphouse
- 183.4KE Clearwell
- 183.3KE Filter Basin
- 183.1KE Headhouse
- 116KE Reactor Exhaust Stack
- 118KE Horizontal Control Rod Storage
- MO048 Construction Lunch Trailer
- MO969 Ops/HPT Change Trailer
- 115KE Gas Recirculation
- 185K Potable Water Treatment Plant
- 117KE Exhaust Air Filter Bldg
- 1717K Maintenance Shop
- 1717AKE Electrical Storage Shed
- 181KW River Pumphouse
- 183.4KW Clearwell
- 1720K Administrative Bldg
- 190KE Main Pump House

**PLANNED FOR D&D/IN PROGRESS**

- 190KW Main Pump House



### Facility D&D

CHPRC D&D completed work on the 190-KE Main Pump House, the 26<sup>th</sup> and final demolition in the 100K Area for fiscal year 2011. Asbestos abatement continues at the 190-KW Main Pump House, which is scheduled for demolition with carryover Recovery Act funds in the first quarter of fiscal year 2012.



Photo 9

*Below-grade demolition and cleanup are complete at the 190-KE Main Pump House, CHPRC's 26<sup>th</sup> Recovery Act-funded demolition at the 100K Area.*

### Waste Sites

RL-41 waste sites have been transferred to Base or non-Recovery Act funding.

## UPCOMING EVENTS

### RL-0011 Nuclear Materials Stabilization & Disposition

RL-0011.R1: Plutonium Finishing Plant D&D

- Complete demo-ready actions for the 2736-ZB facility, and initiate demolition of the 4-building PFP vault complex and two ancillary buildings.
- Complete final area cleanout in the Standards, Analytical, and Plutonium Process Support Laboratories.
- Remove gloveboxes HA-14S, HA-14P, and HA-14DC from the RMA Line, and HC-11 from the RMC Line.

- Continue cleanout and decontamination of the remaining gloveboxes in the RMA/RMC Line process areas.
- Continue removal of asbestos insulation from throughout the 234-5Z building as resources are available.
- Complete lay-up of work areas where process transfer lines were previously being removed.

## RL-0013 Solid Waste Stabilization & Disposition

### RL-0013C:R1.1: MLLW Treatment

- Five MLLW shipments are planned for next week to complete fiscal year 2011 work and the end of Recovery Act-funded waste shipments offsite.
- Project termination due to completion of Recovery Act funding authorization.

### RL-0013C:R1.2: TRU Waste

- TRU Retrieval
  - 3A burial ground
    - Continue 3A lay-up activities.
  - 4B/4C burial ground
    - Load 4B Trench 7 drums into a concrete-shielded overpack container in preparation to ship next week.
    - Ship remaining 4B Trench 7 and Trench 11 containers to CWC and PFNW.
    - Continue with 4B/4C lay-up activities.
  - 12B burial ground
    - Complete shipment of all removed waste from 12B burial ground.
    - Continue 12B lay-up activities.
- TRU Repackaging and Shipments
  - No planned shipments.
- Suspect TRU Waste Shipments
  - No planned shipments.

## RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone

### RL-0030.R1: Central Plateau Soil & Groundwater

- Complete Recovery Act-funded construction of the 200 West Groundwater Treatment Facility.

## RL-0040 Nuclear Facility D&D – Remainder of Hanford

### RL-0040.R1.1: U Plant/Other D&D

- Complete pouring grout into U Canyon void spaces.
- Continue size-reduction and removal of Tank 106 inside the 209-E Criticality Mass Laboratory.
- Complete processing and loadout of debris at the 284-W Power House.

### RL-0040.R1.2: Outer Zone D&D/Waste Sites

- Complete Recovery Act scope for remediating outer zone waste sites.

## RL-0041 Nuclear Facility D&D – River Corridor Closure Project

### RL-0041.R1.1: 100K Area Remediation

- Continue asbestos abatement activities at the 190-KW Main Pump House in preparation for its demolition with carryover Recovery Act funds.

