



AMERICAN RECOVERY & REINVESTMENT ACT











CHPRC-01417

Contract DE-AC06-08RL14788 Modification MO47



Contents



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 <u>www.hanford.gov/recovery</u>.

For information about CHPRC, including weekly Recovery Act newsletters and videos, visit <u>www.plateauremediation.hanford.gov</u> or contact <u>chprcc@rl.gov</u>.

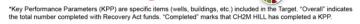


SUMMARY

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 <u>www.youtube.com/hanfordplateau</u>.

PLUTONIUM FINISHING PLANT D&D

Remove 174 Gloveboxes		130	174 Gloveboxes 🔶
Ready 20 Ancillary Structures for	Demolition		25 Structures
SOLID	WASTE STABILIZATION 8		
Ship 1,800 m ³ Mixed and Low-Leve	el Waste for Treatment		1,840 m³
Retrieve 2,500 m ³ Suspect Transur	ranic (TRU) Waste 1,840 m³		2,500 m³ 🔶
Repackage 850 m ³ TRU Waste for 1	Waste Isolation Pilot Plant		1,051 m³ 付
Retrieve 50 m ³ of suspect Remote-	-Handled TRU Waste		84 m³ 🥮
Disposition 2,000 m ³ of Contact-H	andled TRU Waste	1,91	3 m³ 2,000 m³ 🥑
	DIL & GROUNDWATER REA	IEDIATION	
Install 243 Wells/Boreholes			281 Wells
Install 22 Wells (including 5 Tri-Pa	arty Agreement Wells) to Support 200 We	st Groundwater Treatment	t Facility 22 Wells
Decommission 280 Wells/Boreho	les		280 Wells
Construct 200 West Groundwater	r Treatment Facility	88%	100%
Construct 100-DX Groundwater T	reatment Facility		100% 🕮
	NUCLEAR FACILITY	D&D	
U Plant Canyon Demolition	Continued Grouting of Cells		Demolition Ready
Complete D&D of 16 Facilities or	n the Central Plateau		22 Facilities
Complete D&D of 18 Facilities in	the Outer Zone		27 Facilities 🗰
Remediate 24 Waste Sites			36 Waste Sites
Disposition 15 Railcars			16 Dispositioned
	100K AREA REMEDIA	ΓΙΟΝ	
Complete D&D of 15 Facilities	15 Facilities Overall (13	B KPP* Facilities)	15 Facilities 🔶
Remediate 23 Waste Sites			44 Waste Sites
Proc	rress 9 22 🔶 Target	Completed	
	rmance Parameters (KPP) are specific items (wells, buildings, etc.)		





ACCOMPLISHMENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

ACTIVITY	PFP WASTE REMOVAL Week of July 29, 2011	& DISPOSITION Completed to Date with Recovery Act Funding
KPP-1, Lab & Process Areas Ready for Demo Gloveboxes/hoods removed or dispositioned in place Add'1 gloveboxes ready for removal/size reduction	-	130 gloveboxes/hoods 1 gloveboxes/hoods
MLLW/LLW shipped	60 m ³	2,807 m ³
TRU shipped	11	652 m ³
Non-radioactive waste shipped	-	27 m ³
Process transfer line removed	33 ft	535 feet
Process vacuum system piping removed		1,210 feet
Asbestos removed	-	14,654 feet
KPP-2 Fuel Vaults, Buildings Ready for Demo Fuel vaults and ancillary buildings ready for demo Ancillary buildings/structures removed or demolished	-	25 structures 20 structures

Process and Laboratory Areas

With the last of the gloveboxes and hoods removed, general area cleanout is continuing in the Analytical Laboratories, the Plutonium Process Support Laboratory (PPSL), and the backside vault rooms. Three D&D teams are dedicated to KPP completion in these areas.

External isolations and process equipment removal from numerous other process and conveyor gloveboxes continued throughout the RMA and RMC process lines. Mechanical equipment is being removed from HC-21, and mechanical isolation was initiated on HC-15ABC. The transite lids and pressure vessels were removed from HC-15ABC. Internal equipment removal was initiated on HA-14CC and DC, while chemical lines were removed on HA-14S and -14P. NDA shots were taken on Glovebox HA-23S and Aspigel Decontamination Agent was applied to the second level of the glovebox. D&D Teams working in the process areas are working to reduce individual dose rates encountered in the highly contaminated areas.





In the RMC Line, work to remove internal equipment is in progress.

Photo 1





External isolation is part of glovebox removal in the RMC Line.

Photo 2

Infrastructure, support systems, and equipment removal

Gloveboxes 179-4 and 179-6 were shipped to Permafix NW this week and 179-1 and 179-11 were shipped to ERDF. Approximately 33 feet of piping was removed and size reduced, bringing the total removed to date to 535 feet.

2736-Z/ZB Vault Complex

PFP and CHPRC D&D Project staff continue to ready the Vault Complex facilities for demolition. The D&D Project is focusing on completing a KPP at the U-Canyon Facility.

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 Total Completed with Recovery Act funds

Ship 1,800 m³ of MLLW/LLW for treatment and disposal

- 1,840 m³ shipped
- 1,450 m³ treated and disposed
 200 m³ et effeite treatment fecilities qualities
- 390 m³ at offsite treatment facilities awaiting processing. Treatment is scheduled for FY11



Two shipments (22 m³) of MLLW debris from the Waste Retrieval Project (WRP) were made to Perma-Fix Northwest (PFNW) this week for treatment by macro-encapsulation. The processed waste from both shipments will be returned to the Hanford Site for disposal in the mixed waste disposal units.



Workers load miscellaneous mixed low-level waste debris items into a shipping container for shipment to Perma-Fix Northwest (PFNW). The debris will be treated at PFNW by macro-encapsulation and the processed waste will be returned to the Hanford Site for disposal in the mixed waste disposal units.





Workers load miscellaneous mixed low-level waste debris items into a shipping container bound for Perma-Fix Northwest to undergo macro-encapsulation.

RL-0013C:R1.2: Transuranic (TRU) Waste

ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funding
Retrieve 2,500 m ³ of suspect TRU waste	 290 m³ are staged, pending shipment 1,840 m³ shipped to a treatment, storage, or disposal facility
Retrieve 50 m ³ of suspect remote-handled TRU waste	 4 m³ are staged, pending shipment. 84 m³ shipped to a treatment, storage, or disposal facility

At Trench 11 of the 4B burial ground, workers completed excavation and removed Box 101 (37.4 m³). Twelve containers (9.5 m³) were shipped to PFNW and six boxes (39.2 m³) were shipped to the Central Waste Complex (CWC). Workers continued excavating the overburden from Trench 7, Module 7 of the 4B burial ground to the first tier of drums and removed approximately two-thirds of the Module 8. Workers are currently excavating the overburden from Module 5.

At the 12B burial ground, 131 drums (27.2 m³) were removed from Trench 17. Sixty drums (12.5 m³) in 8 x 4 x 4 foot boxes were shipped to PFNW and 48 drums (10 m³) were shipped in standard waste boxes



(SWB) to CWC. Thirty-five drums were vented, 100 drums were assayed in the Gamma Assay System and 15 drums were x-rayed in the Real-Time Radiography (RTR) System.

TRU Repackaging & Shipments

ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funding	
Repackage 850 m ³ of WIPP certifiable TRU waste	 1,051 m³ have been repackaged 	
Disposition 2,000 m ³ of contacted-handled TRU waste	 1,913 m³ have been disposed 	

A total of 13 drums were repackaged at T-Plant this week.

Certification of the Hanford Site's TRU waste assay equipment, the Super High-Efficiency Neutron Coincidence (HENC) and the High-Energy RTR, was received from the Waste Isolation Pilot Plant (WIPP). TRUPACT-II shipments from the Hanford Site are scheduled to resume August 9, 2011.

One shipment (54.4 m^3) was made to PFNW from WRP this week. The shipment included one box of TRU debris which will be repackaged into SWBs. The repackaged TRU waste will be returned to the Hanford Site for WIPP certifications activities.



Workers place the top cover to the Super 7A shipping container over a loaded transuranic (TRU) box from the Waste Retrieval Project. The TRU box will be repackaged at Perma-Fix Northwest into standard waste boxes and returned to the Hanford Site for Waste Isolation Pilot Plant certification activities.





Workers close the Super 7A shipping container and tighten the bolts before it is sent to Perma-Fix Northwest to be repackaged into standard waste boxes.

RL-0030.R1: Central Plateau Soil & Groundwater

ACTIVITY	Week of July 29, 2011	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	88% complete	

200 West Groundwater Treatment Facility

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

- Process buildings
 - Radiological Building: Construction acceptance testing coming to a completion for all disciplines. Go/No Go meeting to define transition to acceptance testing procedure on scheduled for August 2, 2011 for both process CATs.
 - Bio-Process Building: In process work continues for all disiplines: CAT testing in Fluidized Bed Reactor, continued installation of devices in Membrane Bed Reactor area and effluent tank area. Work on electrical panels and switchgear, fire alarm, overhead lighting and pulling wire continued. Continued installation of C and A-line racks, installation of process piping, hydro testing. HVAC ductwork testing completed and



installation initiated. On going grouting of equipment, completed epoxy coatings for sulfuric acid and CST containment.

• Bio Pad: Focus on the completion of the FBR and MBR areas continued. Continued steel installation on the utility racks, hand rails, toe boards, grating, anchor bolts and grouting base plates. Continued installation of vapor off-gas duct work and blower equipment (minimal connection points remain).



Construction acceptance testing of Ion Exchange System (Tc99) (CAT-030) and Ion Exchange Solids Handling (CAT-110) approach completion for all disciplines at the Radiological Building of the 200 West GroundwaterTreatment Facility.

- Transfer buildings
 - Extraction Building #1: Acceptance Test Procedure continued (one part on order to continue process).
 - Extraction Building #2: Construction Acceptance Testing initiated final close out signatures. Construction punchlist items continued.
 - Injection Building #1: Construction punchlist items continued. Continued Construction Acceptance Testing (one part on order to continue process).
 - Injection Building #2: Mechanical Electrical Process build out continues.



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

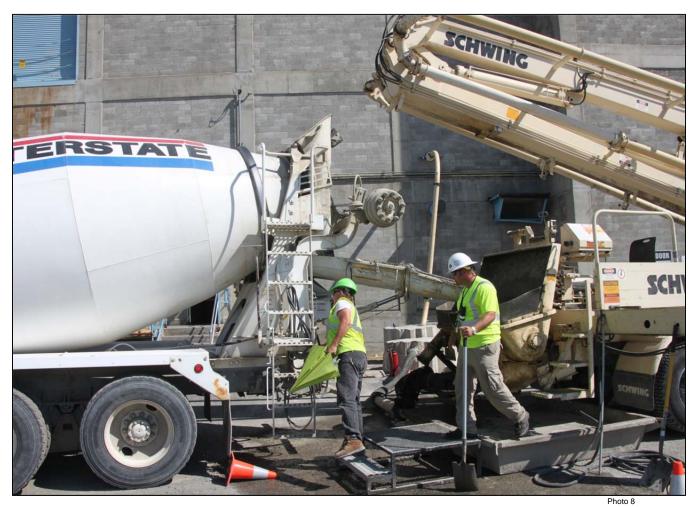
RL-0040.R1.1: U Plant/Other D&D

CENTRAL PLATEAU FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS	
2734EA Gas Cylinder Storage Bldg	209E Critical Mass Laboratory
275E Carpenter Shop Bldg	 284W Power House & Steam Plant 2718E 209E Fissile Material Storage*
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	
	 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

U Canyon

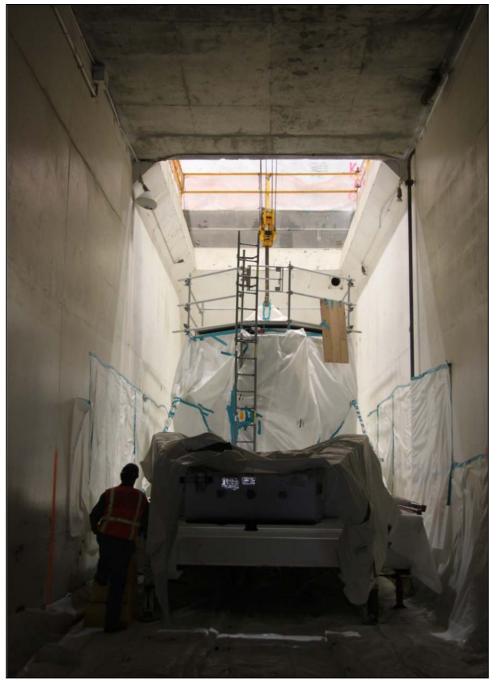
CHPRC has now filled nearly half of U Canyon void spaces with 9,740 cubic yards of grout. A total of 20, 318 cubic yards of grout is planned. Crews with subcontractors AGEC and Central Pre-Mix continue to fill the South Electrical Gallery. Preparations to remove the D-10 Tank from Cell 30 also progressed as CHPRC crews performed safety drills with the specially designed shipping cask for the tank, lowering the lid onto the cask with U Canyon's overhead crane.





At U Canyon, grout workers continue to fill the building's galleries and cells with grout, reaching 47.9 percent of the planned total of 20,318 cubic yards.





In U Canyon's railroad tunnel, a worker observes as the building's overhead crane is used to lower the lid onto a specially designed shipping container in a mock-up drill for removing the D-10 Tank in Cell 30 from the building. The container will allow for safe removal of the tank while minimizing worker exposure to radioactivity from the tank's contents. CHPRC is filling Canyon cells with grout and preparing the building for eventual demolition.

Photo 9

U Plant Ancillary Facilities Closure documentation is being prepared.

200 West Area Industrial Facilities

Asbestos abatement continued inside the 284-W Power House building in a mass containment on the structure's second, third and fourth floors.



209-E Criticality Mass Laboratory

CHPRC crews continue to size-reduce and remove slab tanks from the 209-E facility. Upon removal of all 11 tanks, the 209-E facility can be downgraded to a Less Than Hazard Category 3 (non-nuclear) facility and demolished by September 30, 2011.

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 fe

*Not part of the Key Performance Parameter

North Slope Debris Removal

CHPRC crews have completed cleanup in Hanford Reach National Monument Area 17. Areas 12, 13, 15, 16, and 18 have also been completed, with two sites in Area 10 remaining to be approved as completed.





Local subcontractor Pasco Towing removes an abandoned vehicle from Area 17 of the North Slope.

Photo 10

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

CHPRC crews and subcontractors Clauss Construction and Barnhart Crane removed the final railcar from the 212-N site, delivering tall cask well car H0-10B-19945 to the B Reactor Preservation Project for preservation and display. Cleanup of equipment at the site remains.





CHPRC workers and subcontractors with Clauss Construction and Barnhart Crane enjoy an appreciation luncheon and tour at B Reactor after unloading the last railcar, tall well cask car HO-10B-19945, at the site of the preservation project that morning. With the site under consideration to be made a National Park, CHPRC has delivered four railcars there for preservation and display and delivered 12 to the Environmental Restoration Disposal Facility. All railcars have now been removed from the 212-N Spur, with equipment cleanup remaining.

Waste Sites

The following table showcases CHPRC's recent progress in outer zone waste remediation.

WASTE SITE IN PROGRESS	TONS OF CONTAMINATED SOIL REMOVED	
	Week Ending July 29, 2011	Total to Date with Recovery Act funds
BC Control Area		~483,000

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

- 200-MG-1
 - o 216-S-19: Excavation has resumed at the pond and is currently planned to last 2-3 weeks.
 - 216-S-26: Additional sampling from 15-20 feet was completed as required by the MG-1 RAWP. Down posting and backfill operations are planned to commence within the next 3 weeks.
 - 600-281: Verification sample evaluation is complete with a backfill concurrence form in process. Backfill is planned within the next 2 weeks.
 - 600-49: Initial excavation field activities are complete. Verification sample results have been received and are below cleanup criteria.



- 600-228: Verification sampling planned for next week. 0
- 216-S-16D: Ground scanning was performed with a large crystal Sodium Iodide detector 0 and results indicate radioactive contamination above cleanup levels.
- BC Control Area
 - Excavation of Zone A and removal of the stockpile to ERDF is complete. A cumulative 0 total of ~ 483,000 tons of soil has been deposited at ERDF. Zone A is down posted and the subcontractor is finishing demobilization efforts.

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
 MO048 Construction Lunch Trailer
- 183.3KW Filter Basin
- 183.7 KW Pipe Tunnel
- 110KE Gas Storage Facility
- 110KW Gas Storage Facility
- 116KE Reactor Exhaust Stack
- 118KE Horizontal Control Rod Storage
- MO969 Ops/HPT Change Trailer
- - 115KE Gas Recirculation
 - 185-K Potable Water Treatment Plant*
 - 117 KE Exhaust Air Filter Bldg TOTAL: 429,894 square feet

PLANNED FOR D&D/IN PROGRESS

• 181KW River Pump House

• 183.3KE Filter Basin

- 183.4KW Clearwell
- 183.4KE Clearwell
- 190KW Main Pump House
- 190KE Main Pump House
- 181KE River Pump House
- 1605KE Guard House
- 183.1KE Headhouse

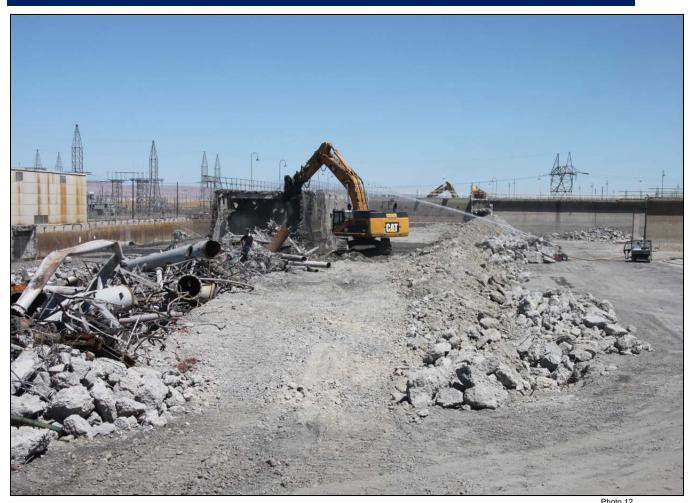
Facility D&D

Demolition began on the 190-KE Main Pump House, and continued on the east and west sides of the 183.3-KE Filter Basins. In the 183.4-KE Clearwell, demolition was begun on the pipe gallery dividing the water storage structure's two halves.

Waste Sites

100-K-79 waste site (Sodium Dichromate and Sulfuric Acid Product Pipelines at 100-K): Confirmatory sampling continues.





Demolition continues on the east and west sides of the 183.3-KE Filter Basins, where water from the Columbia River was first filtered for passage thtrough the K East Reactor system.





Photo 13 Demolition began on both the 190-KE Main Pump House, at left, and on the pipe gallery that divides the two halves of the 183.4-KE Clearwell, at right, where 19 million gallons of water was stored for use in the K East Reactor system.



UPCOMING EVENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

- Complete Cold and Dark certifications and declare the 4-building PFP vault complex and two ancillary buildings ready-for-demolition.
- Complete final area cleanout in the Standards, Analytical and Plutonium Process Support Laboratory areas and the 234-5Z vault rooms.
- D&D the remaining gloveboxes in the RMA/RMC Line process areas.
- Remove more than 200 contaminated HEPA filters from 234-5Z final filter rooms 311 and 316.
- Continue removing process vacuum piping, process transfer lines and asbestos insulation from throughout 234-5Z building as resources are available.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- Two MLLW shipments (25 m³) planned from the WRP to PFNW.
- One MLLW shipments (49.4 m³) planned from the CWC to PFNW.
- RL-0013C:R1.2: TRU Waste
 - TRU Retrieval
 - 3A burial ground
 - Continue clean-up and lay-up activities at Trenches 8 and 17.
 - o 4B/4C burial ground
 - Remove the final Trench 11 container (33.5 m³) from the 4B burial ground.
 - Perform an additional ground penetrating radar (GPR) scan in Trench 11 of the 4B burial ground to verify the completion of container removal.
 - Ship 28 waste containers (54.5 m³) from Trench 11 of the 4B burial ground to CWC and PFNW.
 - Vent 12 TRU drums at the 4C Process Area in the Mobile Drum Venting System (MDVS) and load the drums into SWBs in preparation for shipment.
 - Complete portable assay of removed waste containers from Trench 11 of the 4B burial ground in the 4C Process Area.
 - Continue excavation and begin removal of drums from Trench 7 of the 4B burial ground.
 - Overpack five metal containers into 9 x 5 x 5 foot waste containers in preparation for shipment.
 - Begin the 4B Process Area assay campaign.
 - o 12B burial ground
 - Continue drum retrieval and waste shipping.
 - 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

• Continue 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

- Continue pouring grout into U Canyon cells.
- Continue size-reduction of slab tanks inside the 209-E Criticality Mass Laboratory.
- Continue asbestos abatement inside the 284-W Power House.

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

• Continue planning for and remediating 200-MG-1 waste sites.

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

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

- Continue demolition of 190-KE Main Pump House.
- Continue demolition and loadout of the 183.3-KE Filter Basins.
- Continue excavating soil from and planning for remediation of 100K Area waste sites.

