

# ARRA Weekly Report



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## ACCOMPLISHMENTS

### RL-0011 Nuclear Materials Stabilization & Disposition

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

The CH2M HILL Plateau Remediation Company (CHPRC) continued putting funds from the American Recovery and Reinvestment Act of 2009 (Recovery Act) to work in several areas of the Plutonium Finishing Plant (PFP). Fixative was applied to the inside of four interconnected glove boxes in room 146 of PFP's former Analytical Laboratory, and they have been separated from the ventilation system. Crews also finished removing part of the wall of the room to create an opening large enough to remove the glove boxes as a unit, avoiding the need for more hazardous in situ size reduction of the glove boxes.

In the Standards Laboratory, beryllium wipe-downs and sampling were completed in room 221-E, excess equipment is being removed, and lighting fixtures were removed from within the hoods.

In the former production areas of the 234-5Z building, old light fixtures were removed from glove boxes HA-19B1 and HA-19B2, as were cooling lines to H-19B2. Non-destructive assay (NDA) was completed on the external process piping to glove box HA-46. In room 230C, chemical decontamination is still continuing in an effort to decontaminate a final "hot spot" inside former process glove box HC-230C-3.

Preparations for removing the highly contaminated process vacuum system (planned to begin in mid-November) continued, including work package development, job hazard analysis, development of a Criticality Safety Evaluation Report, and NDA measurements of the entire system. NDA field work and reporting was completed for the area to be tackled first, the area above the former Analytical Laboratory. Field work for the next area, above the RMA (remote mechanical A) line, is nearing completion, and field work in the area above the RMC (remote mechanical C) production line was concentrated on NDA preparations.

Removal of hazardous materials from the 234-5Z building also continued, with draining of the glycol solution from the deactivated process vacuum cooling system in room 308 and removal of lead weights from scales in room 337. Insulators removed asbestos from another 105 feet of piping, bringing the total removed to over 4,700 feet.



Photo 1

Workers begin removing part of a wall in room 146 of PFP's former Analytical Laboratory. The workers removed the wall to create an opening large enough to remove four interconnected glove boxes as a unit as opposed to individually, which will limit handling and eliminate the need for size reduction of the glove boxes.



Photo 2

Workers remove a section of the wall in room 146 of PFP's former Analytical Laboratory to create an opening through which they can remove four interconnected glove boxes as a unit. PFP buildings pose challenges to today's workers as they remove large equipment, such as glove boxes, while trying to limit handling of the contaminated equipment.



Photo 3

Workers finish expanding an opening into room 146 of PFP's former Analytical Laboratory, granting workers adequate access to remove four glove boxes at one time. The glove boxes will be removed and disposed of in the Environmental Restoration Disposal Facility.



Photo 4

The finished, expanded entrance into room 146. Workers can now remove four interconnected glove boxes at one time, limiting hazards, handling, and the need for size reduction.

## RL-0013 Solid Waste Stabilization & Disposition

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

Of the 1,800 m<sup>3</sup> planned for treatment and disposal under the Recovery Act:

- 538.9 m<sup>3</sup> of the 1,800 m<sup>3</sup> have been shipped to date including:
  - 243.6 m<sup>3</sup> of low-level waste (LLW) have been treated and disposed
  - 295.3 m<sup>3</sup> are at off-site treatment facilities awaiting processing. Treatment is scheduled for FY 2010.

One shipment of legacy LLW was sent out for disposal this week. This shipment of waste consisted of 85, 55-gallon drums (17.68 m<sup>3</sup>) from the Central Waste Complex (CWC) and was shipped on Oct. 21 to the Environmental Restoration Disposal Facility (ERDF).

#### *ERDF "Self Perform"*

The ERDF "Self Perform" project continued placing CHPRC roll-off cans into service. The team introduced approximately 100 new cans into the process this week. Staff hiring and training continues, with project support scheduled to begin the week of Oct. 26. An issue was identified in the weld of the

secondary closure mechanism of a group of cans. The applicable cans have been removed from service and will be repaired and re-certified by the vendor prior to use.



Photo 5

The first CHPRC roll-off containers loaded at the site of the 212-N, -P, and -R buildings as part of the Environmental Restoration Disposal Facility (ERDF) "Self Perform" project. As Recovery Act funds accelerate cleanup and demolition across the Central Plateau and along the River Corridor, the "Self Perform" project is helping deliver CHPRC's increasing waste volumes to ERDF.





Photo 6

*A new "super dump truck" unloads CHPRC waste at the Environmental Restoration Disposal Facility (ERDF). The truck is one of 10 trucks that were recently procured as part of the ERDF "Self Perform" project. The trucks can dump directly into the ERDF, which limits handling and increases worker safety.*

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

Of the 2,500 m<sup>3</sup> of suspect TRU waste planned for retrieval under the Recovery Act:

- 301 m<sup>3</sup> have been removed and are staged, pending shipment.
- 426 m<sup>3</sup> have been shipped to a treatment, storage, or disposal facility.

Removal activities continued in 3A Trench 17 with workers continuing to fabricate a cover box for Box 82 and installing a cover box for Box 27 that will provide protection from weather, pending approval. The work package to deploy cover boxes for Boxes 27 and 80 was completed and approved. The set-up of the Box 82 disassembly mock-up in the Simulation Test Site (STS) trench was completed and specialized tools and methods were tested and proven to be viable. This mock-up allows for the testing of long-reach tools and the training of operators who will use the tools. These operators were also able to become familiar with the procedure and work package that will be used to repackage both Boxes 80 and 82.

Work continued in other areas as well: four waste containers (5.1 m<sup>3</sup>) were removed from 4B Trench 11, four concrete-shielded overpacks were received, and SUMMA canister samples were taken in the risers of 3A Trench 5 to test for potential vapor extraction operations. A SUMMA canister is an evacuated canister

that is used to collect instantaneous air samples. This method of obtaining an air sample can be used when there are concerns about odors or emissions from a nearby source of air pollution.



Photo 7

A CHPRC employee draws a SUMMA sample from the 3A Burial Grounds. A SUMMA canister is an evacuated canister that is used to collect instantaneous air samples from the soil. The SUMMA canister is pulling gases from the bottom of the waste trench to test for volatile organic chemicals.

#### *Alpha Caisson Retrieval Project*

The Alpha Caisson Retrieval Project Management Group held the third monthly project-level risk review meeting and they are currently researching prerequisites for the Project Review Board meeting scheduled to be held in December. Three documents were drafted for review: the Functional Design Criteria, the Material at Risk document, and the Technology Readiness Assessment. The group also determined that the project will proceed based on the Resource Conservation and Recovery Act of 1976 regulatory framework rather than the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The waste retrieval system team reviewed the conceptual general arrangement options and decided further conceptual development was needed for access from the top of the caisson. The team also completed the second in-process design review of AREVA's general arrangement drawings.

#### *TRU Project Drum Repackaging*

Of the 1,210 drums (400 m<sup>3</sup>) planned to be characterized and repackaged in fiscal year 2010:

- 212 drums have been quick-scanned to date.

- Corrective actions for 346 drums have been developed.

#### *T Plant Trainees*

Three newly hired nuclear chemical operators (NCO) have completed the Base, Waste, and Repack Qualifications and are considered fully qualified. These NCOs are now able to operate independently in repackaging drums that will be sent to the Waste Isolation Pilot Plant, which is certified to handle TRU waste. Other NCOs and radiological control technicians are continuing on-the-job training while producing certifiable, re-packaged TRU waste containers.

### **RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose zone**

RL-0030.R1: Central Plateau Soil & Groundwater

Recovery Act funding is being used at several locations across the Hanford Site, including the preparations for drilling numerous wells that will be used for monitoring, extracting, and remediating groundwater. Recent progress includes:

- *100-HR-3* – In the D Area, 12 wells have been drilled, constructed, and developed. The documentation to initiate drilling on the next 13 wells is in process.
- *100-BC-5* – Drilling continued on two wells; one well has been drilled to approximately 87.5 feet, and the other well is at approximately 97 feet.
- *200-ZP-1 Expansion* – Drilling continued on six wells. The development of one well was accomplished last week, two wells are under construction, and three wells are in process of being drilled to total depth (to 394 ft, to 516 ft, and to 360 ft). The drilling contract request for proposals for 11 wells to complete the expansion project for the 200-ZP-1 operable unit is currently out for bid.
- *100-NR-2* – Drilling on the 171 wells for the expansion of the apatite barrier continued with six wells being drilled and constructed.

For the DX groundwater treatment facility, construction of road crossings is 92% complete, installation of high-density polyethylene piping is 48% complete, and fabrication of electrical power racks is complete.



Photo 8

*Workers dig a footing for the DX groundwater treatment facility. The facility, located in the 100 Area, is being constructed with Recovery Act funds to advance efforts to protect the Columbia River by treating hexavalent chromium contamination in the groundwater.*



Photo 9

*A worker bonds two pieces of high-density polyethylene (HDPE) piping. Over 42 miles of HDPE piping is being installed to connect the DX groundwater treatment facility to wells in the 100-HR-3 area.*



Photo 10

*A worker helps create the site for a road crossing. Over 100 road crossings are being constructed to protect the high-density polyethylene piping from the weight of heavy vehicles as the pipe crosses under the road in its 42-mile span to connect the DX facility to wells in the 100-HR-3 area.*

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

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

Asbestos abatement work continued at U Plant Ancillary Facilities, 224-U and 224-UA, with the primary focus on asbestos removal from the Hammer mill/towers area and preparations for abatement of the calciner area of 224-UA, and installation of glove bags/containments for removal of asbestos from the south and east side piping at 224-U.

Housekeeping and application of contamination fixative was completed in the U Canyon railroad tunnel. Lighting improvements within the canyon were initiated, replacing failed ballasts and fixtures and re-lamping with new bulbs where required. Preparations continued toward applying contamination fixative within the canyon and relocating excess equipment on the canyon deck down into the cells where they will be grouted in place. This work is expected to begin next week.

All 30 of the temporary office, crew, restroom, and shower trailers needed to support accelerated D&D on the Central Plateau are now installed, inspected, and approved for use. Fabrication, assembly, and modifications of heavy equipment are continuing. The vendor began fabricating a heavy-haul low boy

trailer that was awarded last week, and modifications were initiated on a recently acquired 90-ton excavator.



Photo 11

*Inside the U Plant Canyon, a worker replaces a light bulb in the canyon crane. The crane was previously used to remotely lift cell cover blocks and equipment and to support operation and maintenance of the uranium recovery processes within the canyon. To help prepare the canyon for demolition, the crane will now be used to lift the cover blocks and place excess equipment and materials into the concrete cells beneath the canyon deck.*



Photo 12

*Radiological control technicians survey the railroad tunnel into U Canyon building. The tunnel was the entry point for railcars and trucks bringing materials to the canyon. With Recovery Act funds, CHPRC returned the tunnel door to service in early October and workers began clearing the tunnel of dirt and debris.*





Photo 13

*Nuclear chemical operators and radiological control technicians perform housekeeping inside the U Canyon railroad tunnel. To date, CHPRC has reactivated the tunnel door, initiated housekeeping and radiological controls, and started decontamination and application of fixative within the tunnel.*



Photo 14

*With the tunnel now clear of dirt and excess materials, a worker applies contamination fixative to the interior of the U Canyon railroad tunnel.*

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

##### *Facility D&D*

Demolition of the 212-R basin was completed, while debris load-out at 212-R and demolition of the 212-P basin sub-structure continued. Water previously removed from 212-N, -P, and -R was shipped to the 200 Area Effluent Treatment Facility for processing.

Planning for the relocation of one of 15 old railcars staged in the 200 North Area to the B Reactor area has been suspended due to the scope of work that would be required to establish a rail route to a location near the B Reactor Museum, and uncertainty by Mission Support Alliance and museum management regarding the value of the display and responsibility for the car(s).

Installation of six temporary crew and restroom trailers on Rattlesnake Mountain to support D&D on the Arid Lands Ecology (ALE) reserve is nearing completion. Work to establish cold and dark isolation of the structures on the lower ALE site was initiated this week, and a walk down was completed to support the upcoming kickoff of asbestos sampling and abatement, planned to begin next week.



Photo 15

*Demolition of the 212-P building continues. With the above-ground structures removed, workers are demolishing the basin sub-structure. The 212-P building is the last of three interim fuel storage buildings in the 200 North Area to be demolished with Recovery Act funds.*



Photo 16

Three of 15 railcars staged in the 200 North Area. CHPRC is assessing the feasibility and logistics of transporting one or two of the historic locomotives or railcars to the 100 B Area for display near B Reactor.

#### Waste Sites

Quality control data from the helicopter survey over the BC Control Area (BCCA) is expected to be received by Nov. 17. Meanwhile remediation in the BCCA is continuing with the support of recently procured “super dump” trucks that are transporting the excavated waste to ERDF. Three trucks are in service and have deposited 1,700 tons at ERDF. Trailer mobilization to the BCCA is also in process to support staffing for the remediation effort.



Photo 17

*A “super dump” truck arrives at the Environmental Restoration Disposal Facility full of soil from the BC Control Area. Three trucks are in service at the BC Control Area, where CHPRC is remediating spots of contamination identified by the aerial survey.*

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

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

With the roof panels removed from the 117KE Exhaust Air Filter building, activities this week included the characterization of the building’s interior to verify that the observed facility conditions met the planned expected conditions. This information will be incorporated into the planning instructions to finalize the facility work documents. These documents provide direction to workers for work within the building and provide procedural controls to maintain a safe work environment. The removal of debris from the chlorine slab at the 183KW Water Retention Basin facilities was completed and cold and dark conditions were also achieved for MO048, a trailer that served as a staging area for workers during demolition of the basin. CHPRC will remove MO048 and other trailers to make room for Recovery Act work in the 100K Area, which includes demolition of 12 structures and cleanup of 49 waste sites.

For the UPR-100-K-1 waste site—the soils beneath the former fuel storage basin—remediation efforts continue to encounter high contamination levels in the soil that are impacting the ability to achieve waste shipping requirements without restricting quantities in the container. The contamination levels in the soil continue to rise and the inventory of material that is currently permitted to ship is essentially depleted.

The project is pursuing authorization through the U.S. Department of Energy to ship the contaminated materials and is expecting approval in the near future.



Photo 18

*Trucks enter the container transfer area in the 100K Area, where workers stage containers prior to use for transferring remediated soils from beneath the former fuel storage basin near the K East Reactor.*

## UPCOMING EVENTS

### RL-0011 Nuclear Materials Stabilization & Disposition

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

- Remove four glove boxes from room 146 and transfer to Solid Waste Operations for disposal.
- Continue removing equipment interfering with hood removals from room 221E in Standards Lab.
- Complete decontamination of glove box HC-230C-3.
- Complete process equipment removal from glove box HC-60.
- Approve and issue the work package for cleanout, isolation, and removal of the first five hoods from PFP's former Plutonium Process Support Laboratory, room 187.
- Reassess the radiological status and determine a disposition path for six glove boxes previously removed from rooms 131 and 137 of the Analytical Laboratory.
- Complete removal/return of the 2734-ZJ nitrogen storage tank to the vendor and remove

remaining appurtenances to slab-on-grade.

- Initiate removal of the 26" process vacuum system from throughout 234-5Z building.

## RL-0013 Solid Waste Stabilization & Disposition

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

- Planned shipment of 1.664 m<sup>3</sup> of Toxic Substances and Control Act (TSCA) MLLW on Oct. 27. The shipment consists of eight drums that will be sent from the CWC to Energy Solutions-Clive (ES-Clive) to undergo vacuum thermal desorption treatment.
- Planned shipment of 6.762 m<sup>3</sup> of TSCA LLW on Oct. 27. The shipment consists of 32 drums that will be sent from the CWC to ES-Clive to undergo macro encapsulation.
- Planned shipment of 8.45 m<sup>3</sup> of TSCA MLLW on Oct. 29. The shipment consists of 11 drums that will be sent from the CWC to Perma-Fix Northwest (PFNW) for macro encapsulation.
- Planned shipment of 12.668 m<sup>3</sup> of TSCA LLW on Oct. 29. The shipment consists of 61 drums and one box that will be sent from the CWC to PFWN to undergo macro encapsulation.

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

- 3A Trench 17 Removal:
  - Continue excavation in 3A Trench 17.
  - Complete fabrication of cover box for Box 82.
  - Excavate around boxes 3 and 12 and assess potential for removal.
  - Update Boxes 80 and 82 disassembly work package with input from STS mock-up and begin preparing for Hazard Review Board.
- Continue excavation in 4B Trench 11.
- Continue removal of containers from 4B Trench 11.
- Receive final three concrete-shielded overpacks.
- Prepare request for fabrication of concrete-shielded overpack dividers and shield rings.
- Perform Portable Box Assay of containers.
- Alpha Caisson Retrieval:
  - Approve and implement administrative baseline change request to align the work breakdown structure to move work planning forward.
  - Conduct Preliminary Hazards Analysis meetings.
- TRU Program:
  - RH/Large Package Capability.

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

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

- Continue construction of the DX Pump-and-Treat Facility with the placing of the foundation.
- Continue drilling at 200-ZP-1, 100-HR-3-H, 100-BC-5, and 100-NR-2.
- Continue development of decision documentation.
- Mobilize drilling subcontractors at 100-HR-3-D and 200-BP-5.

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

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

- Receive delivery of remaining D&D heavy equipment to be procured.
- Continue asbestos removal and other preparations for demolition of U Plant ancillary facilities 224-U, 224-UA, and 203-UX.
- Complete reactivation of U Canyon support systems, and initiate application of contamination fixative in the canyon and relocation of equipment on the canyon deck into the cells.
- Complete preparations for demolition of the 200 East Area core industrial complex.
- Complete detailed planning for cleanout of the 209-E building.

### RL-0040.R1.2: Outer Zone

- Complete demolition of the 212-P building basin and dispose of demolition debris and soil from 212-R and -P.
- Complete surveys and inspection of all three 212 building sites to support closure.
- Continue preparations for demolishing excess facilities at the ALE reserve.

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

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

- Continue remediation of the UPR-100-K-1 (Fuel Storage Basin) waste site.
- Continue mechanical, electrical isolation, and characterization of the 183KW Complex.
- Continue mechanical, electrical isolation, and characterization of MO-969.
- Continue characterizing the interior of the 117KE Exhaust Air Filter building.
- Continue debris removal from the KW basin.