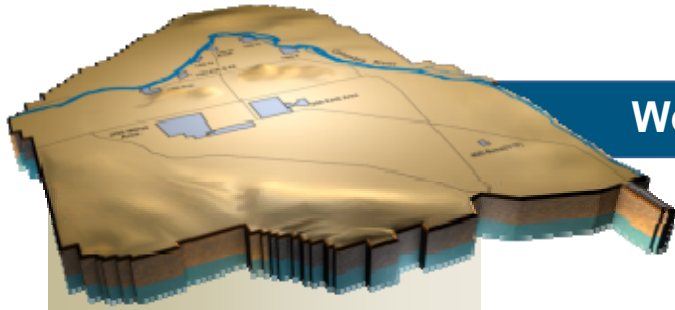


# ARRA Weekly Report



**Week Ending September 18, 2009**

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## ACCOMPLISHMENTS

### RL-0011 Nuclear Materials Stabilization and Disposition

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

The three-glove-box unit in Room 137 of the Plutonium Finishing Plant's (PFP) Analytical Laboratory was separated into two sections for removal. Final removal has been deferred pending resolution of technical questions on the application of the Surface Contaminated Object survey process. Recovery actions were completed on a minor contamination event in vault 174, and the work package for removal of the eight ventilated sample cabinets was revised to incorporate lessons learned. A Beryllium Exposure Assessment has been completed to support the upcoming kickoff of D&D work in the PFP Standards Laboratory, which will proceed in parallel with work in the Analytical Laboratory.

The chemical decontamination of glove box HA-20MB continued this week. Small electrically powered scraping tools are being implemented to remove residual materials in hard-to-reach corners and crevices. A non-destructive assay (NDA) was performed to re-baseline the fissile inventory in the glove box. It is anticipated that the NDA results will yield a lower fissile inventory, supporting a reduction in criticality controls on the amount of cleaning materials inside the glove box and improving efficiency by reducing the frequency of required waste seal-outs.

The bulk of glove box HC-230C-3 has been cleaned to acceptable levels, and the team focused this week on chemical decontamination of a few remaining "hot spots" within the glove box. Sheet metal workers also removed a fire screen from the exhaust port inside the glove box, which would have presented a problem for confirmatory measurements after cleaning.

The work package for removal of a large, vendor-owned nitrogen tank from the 2734-Z structure has been approved. The tank will be removed and the 2734-Z structure removed to slab-on-grade as priorities for crane and rigging permit. An initial field walk-down for planning cold and dark isolation of three process glove boxes in room 642 of the 2736-ZB facility was also completed. Insulators also removed asbestos from an additional 190 feet of piping in the 234-5Z building, bringing the total removed under Recovery Act funding to more than 3,900 feet.



*Workers conduct a walk-down for future removal of a glove box from room 232 in the 234-5Z building.*





Workers perform decontamination on a glove box in the 234-5Z building.

## RL-0013 Solid Waste Stabilization & Disposition

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

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

- 393 m<sup>3</sup> of the 1,800m<sup>3</sup> have been shipped to date including:
  - 197.1 m<sup>3</sup> of low-level waste (LLW) treated and disposed
  - 195.8 m<sup>3</sup> are at Perma-Fix Northwest (PFNW) waiting processing. Treatment is scheduled for FY 2010.

Using Recovery Act Funds, the Waste and Fuels Management Project completed a shipment of 27.7 cubic meters (m<sup>3</sup>) of 435.1 Compliance waste from the Central Waste Complex (CWC) to Perma-Fix Northwest (PFNW) in September.

### 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:

- 217 m<sup>3</sup> have been removed from the trenches
- 210 m<sup>3</sup> are staged – pending shipment
- 145 m<sup>3</sup> have been shipped to a treatment, storage or disposal facility.

In 3A Trench 17, removal activities continued on several boxes, including assembly of a shoring base, walls and roof for Box 28, fabrication of cover boxes for Boxes 27 and 82, and excavation of small fiberglass-reinforced plywood (FRP) Boxes 4 – 11. The shipping procedure for small FRP Boxes 4-11 was confirmed and removal and over-packing were initiated. Additionally, Box 79 was lifted out of the trench and staged for minor repairs and shipping, Box 29 was shipped to the CWC, and the work package revision for lifting Box 28 with a shoring box around it was completed. Waste retrieval progress also included the removal of six containers from 4B Trench 11, and the first four of 21 concrete shielded overpacks for high-dose containers were received.



*On Sept. 16, Box 29 was loaded out of 3A Trench 17. The box contains suspect TRU waste. Once removed from the trench, the box was placed upon a platform and covered with another shipping container for shipment to the CWC.*





*One of the first of 21 concrete shielded overpack containers that arrived last week. The overpacks will hold high-dose rate containers.*

### *Mobile Hot Cell/Alpha Caisson Retrieval Project*

Progress on the Mobile Hot Cell/Alpha Caisson Retrieval Project continued with issuance of the Request for Proposals for the waste retrieval conceptual design to the ARES Corporation. The Technology Readiness Level Process on the project was initiated and work on the waste processing system transition design continued.

### *ANTECH Lab Demobilized*

Last week Recovery Act funds allowed workers to complete the demobilization of the ANTECH Mobile Assay Lab on Sept. 15. The lab was used to characterize and classify suspect TRU waste drums removed from the burial ground trenches as LLW or TRU waste. The drums contained miscellaneous debris waste contaminated with TRU isotopes from various on-site and off-site waste generators. The ANTECH Mobile Assay Lab is no longer needed since this phase of drum retrieval and removal from the burial ground trenches was completed in August, and waste retrieval has shifted to waste boxes. Demobilization involved disconnecting the electrical, phone, and HLAN systems, and having the vendor remove sensitive radio assay detection and cooling systems. The lab was then lifted onto a Hanford tilt trailer and transferred to a commercial vehicle for transportation off site.



During the week ending Sept. 18, demobilization on the ANTECH Mobile Assay Lab was completed and the lab was crane-lifted onto a Hanford tilt trailer and transferred to a commercial vehicle.





*After demobilization was complete, the ANTECH lab was moved off-site. For the last four years, the lab supported radio assay of drums retrieved the burial grounds.*

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

RL-0030.R1: Central Plateau Soil & Groundwater

In the ongoing groundwater remediation effort on the Central Plateau, drilling activities continued on five wells for the 200-ZP-1 groundwater treatment system with two drilled to total depth and currently being constructed. The other three wells are being drilled to total depth. The 200-ZP-1 wells are in support of the 200 West Groundwater Treatment Facility—\$80 million Recovery Act funding—which is currently being designed to pump contaminated water from the ground and remove multiple chemical and radioactive contaminants to protect the Columbia River.

As part of the expansion of the pump and treat operations in the 100-HR-3 area, wells are planned to be installed in both the D and H area. For the 100-HR-3 (H Area), seven wells have been drilled to total depth, six of the seven wells have been constructed and developed, and one of the seven wells is being constructed. The contract for the drilling vendor for 100-HR-3 (D Area), 100-BC-5, and 200-BP-5 (K well) was awarded. Overall, work continues toward completing documentation for drilling wells at 100-HR-3 (D area), 100-NR-2, 100-BC-5, 200-BP-5, and 200-ZP-1 sites. The drilling subcontractors at 200-ZP-1 and 100-HR-3 have worked 60 and 28 days, respectively, without a recordable safety event.

Part of CHPRC's effort to remediate and protect the Columbia River also includes the expansion of the 100-HR-3 area groundwater treatment system. This expansion is currently taking place in the D Area, and the project is known as DX. The construction phase of the DX facility continued last week with the mobilization of equipment to begin the civil site preparations for the drainage, supply, and effluent piping, the exterior building construction, and "lay down yard." Additionally, the 100-HR-3 DX Pump and Treat Facility project and construction team continued laying high-density polyethylene (HDPE) pipe and constructing protected pipe road crossings that will connect the new extraction wells to the facility. The overall task includes laying and bonding four lines of pipe that will span over 42 miles and carry several billion gallons of water, and constructing hundreds of road crossings that will protect the pipe from the weight of large motor vehicles.



*Out at the 100-HR-3 site, workers are laying several miles of HDPE pipe that will expand the 100-HR-3 area groundwater treatment system. Laying the pipe includes heat bonding sections of the pipe together, which workers have done without incident.*



*At the 200-ZP-1 site, workers from the subcontractor Blue Star clean a well casing prior to installation.*





*After cleaning, workers install the permanent well casing. This week at the 200-ZP-1 site, two wells were drilled to total depth and are now being constructed, and three more wells are being drilled to depth.*

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

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

Asbestos abatement work is continuing on both the 224-U and 224-UA buildings. In 224-U, abatement in B cell is complete and glove bag installation was initiated on the east side piping. At 224-UA, containment installation was completed for the Hammer mill/towers and is continuing in the calciner area.



At the U Plant Canyon, work on reactivation of the rail/vehicle tunnel door is awaiting fabrication of a tool to enable opening the door. The main elevator has now been reactivated. The crane optics are being repaired and entry will be made to evaluate the lifting yokes needed for equipment moves and to begin a chemical inventory in the canyon. Work package development is complete for the application of contamination fixative in the canyon and clearing the canyon deck of equipment. The sample results from the D-10 tank in cell 30 of 221-U are continuing to be reviewed to support a recommendation to DOE-RL for disposition of the liquids and solid material in the tank. The recommendation will likely be to grout the material in place.

For 209E, the Critical Mass Laboratory, isotopic information on the remaining hold-up inventory from recent NDA measurements was finalized and submitted to 209E project management. With this information, engineering began developing detailed plans for removing the remaining material, glove box, and equipment from the facility.

Procurement of heavy equipment to accelerate D&D of facilities on the Central Plateau is continuing. During the week ending Sept. 18, a demolition multi-processor for the 60-ton excavator was received onsite, and bids were awarded for a hydraulic hammer for the excavator, a small front-end loader, a mechanic's truck, and a heavy-haul trailer.

Delivery of office, crew, restroom and shower trailers to support accelerated D&D on the Central Plateau is nearly complete, with 29 of 30 planned now onsite. Sixteen of these are approved for occupancy, with delivery of the last trailer and final installation of the remaining facilities expected by late September or early October. The six trailers needed to support accelerated D&D on Rattlesnake Mountain should also be in place and ready for use by the end of October.



*Construction of tunnels to the shower trailers for the asbestos abatement was completed at the 224-UA building.*



Workers are continuing to perform asbestos abatement on the 224-UA building.

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

##### *Facility D&D*

Demolition of the basins and removal of soil from beneath the 212-N and 212-R buildings continued in the 200 North Area. The crew currently expects to complete demolition at 212-N within the next week or two, and work will then begin on demolition of the 212-P building superstructure.

Confirmatory radiological surveys and biological cleanup continued on the lower Arid Lands Ecology (ALE) reserve facilities slated for demolition under the Recovery Act; work was completed for 6652-M, -H and -J buildings, and they were down-posted from biological controls. Walk downs were performed with construction management staff to review the site where the demolition crew trailers will be temporarily installed, and the Benton Public Utility District installed a new utility pole and transformer to support the installation. A fire plan was prepared, Fire Marshall permit was obtained, and a NEPA categorical exclusion was finalized to conduct a controlled burn at the ALE site to minimize the fire potential in this remote area. These preparations are the beginning part of the Recovery Act-funded effort to ultimately demolish DOE facilities and cleanup debris on the ALE reserve.





*A worker performs biological cleanup at the Lower ALE facilities, where work is beginning to prepare the facilities for demolition.*





*After confirmatory radiological surveys and biological cleanup were finished, buildings 6652-M, -H and -J were down-posted.*



*Workers on the ALE reserve also performed walk downs of the site in preparation for trailers that will be mobilized to the area next week.*

#### *Waste Sites*

The BC Control Area, in the 200 East Area, continued preparations for the remediation of Zone A waste site. Four dump trucks were delivered to the Hanford Site and are in the process of being inspected and placed into service. To ensure the safety of all workers involved, a training representative from Strong and a sales representative from Pape Kenworth were present to provide operational training and demonstration of all the features of the dump truck. The training included operating the lifting mechanism of the dump truck. Personnel from the Environmental Restoration Disposal Facility (ERDF) provided clean dirt for the training exercises and were very supportive and accommodating with the training effort.





*Workers were instructed in how to operate the recently procured dump trucks that will be used to facilitate remediation in the BC Control Area.*



*After observing demonstrations from trained personnel on how to operate the equipment, workers practiced operating the machinery.*





*Workers participated in training exercises using clean dirt provided by personnel at ERDF.*

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

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

### *Waste sites*

At 100-KR-4, site preparations for the temporary Container Transfer Area continued. The preparations included rolling and compacting the crushed rock for delivery of five ERDF containers. Specifically for the 100-K-42 waste site, the Fuel Storage Basis, scaffolding was delivered and erected for the Entry/Exit point of the Radiological Boundary Area (RBA). This Entry/Exit point is used during remediation activities to ensure the containers meet the requirements for leaving the RBA.



*Workers performed site preparations for the temporary Container Transfer Area at the 100K Area. The area will support the waste site remediation that will be performed with the support of Recovery Act funds.*

#### *Facility D&D*

With the support of Recovery Act funds, workers in the 100K Area also continued mechanical and electrical isolation of the 183 KW Sedimentation Basin Complex. Walk-downs of the 183.1 KW Head House were performed to allow work planning of the asbestos removal. These tasks are part of the 183 KW sedimentation basin removal project.

During the week ending Sept. 18, decommissioning also continued on the 118KE Horizontal Control Rod Storage Cave. During the operation of the reactors, the control rods were changed numerous times to improve production efficiencies. The control rod ends that were radioactive from being inserted in the reactor were placed in horizontal storage areas.





*The 118KE Rod Storage Cave before D&D began. Several tons of gravel were removed earlier this year.*



*Shielding was removed and demolition continued on the 118KE Horizontal Control Rod Storage Cave, shown here with additional materials awaiting disposal. Removing the shielding will allow for removal of the cave mouth and tubes.*





*A walk down was performed on the 183KW Water Treatment Head House to identify asbestos for removal. After the asbestos is removed the facility will be available for demolition as part of the sedimentation basin removal project.*

## UPCOMING EVENTS

### RL-0011 Nuclear Materials Stabilization & Disposition

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

- Apply contamination fixative and remove ventilated sample storage cabinets from Vault 174
- Commence glove box removal work for the four glove boxes in Room 146
- Complete decontamination of glove boxes HA-20MB and HC-230C-3
- Complete process equipment removal from HC-60

### RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- Planned shipment of 13.4 m<sup>3</sup> of TSCA-MLLW consisting of 64 containers to ES-Clive
- Planned shipment of 33 m<sup>3</sup> of Legacy LLW consisting of 5 containers sent to PFNW
- Planned shipment of 3.6m<sup>3</sup> of TSCA-MLLW including 16 containers sent to Perma-Fix East
- Planned shipment of 5.2 m<sup>3</sup> of TSCA-LLW consisting of 25 containers sent to Perma-Fix East.

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

- 3A Trench 17 Removal:
  - Lift Box 28 and complete assembly of its shoring box and roof
  - Complete minor repairs and ship Box 79 to CWC
  - Continue fabrication of the temporary roof for Box 2; install walls and roof if schedule permits
  - Continue fabrication of cover boxes for Box 82 and Box 27
  - Continue excavation, removal and over-packing of Boxes 4-11
  - Complete Box 28 work package and critical lift plan and ship Box 28 to CWC
- Initiate a Portable Box Assay campaign
- Continue excavation of 4B Trench 11 and removal of boxes
- Continue excavation of 3A Trench 17 and removal of boxes.

**RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose zone****RL-0030.R1: Central Plateau Soil & Groundwater**

- Continue drilling at 200-ZP-1, and 100-HR-3-H
- Installation of road crossings, HDPE pipe, and electrical power racks for the 100-HR-3 DX Treatment Facility
- Civil site preparations for the 100-HR-3 DX Treatment Facility.

**RL-0040 Nuclear Facility D&D – Remainder of Hanford****RL-0040.R1.1: U Plant/Other D&D**

- 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 continue planning for canyon cleanout

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

- Complete demolition of the 212-N building basin and remove three feet of soil below the basin.
- Initiate demolition on the above-grade portion of 212-P
- Complete demolition of the 212-R building basin and soil removal
- Radiological survey of the BC Control Area
- Continued preparations for remediation for the 200-MG-1 and the 200 North CW-3 waste sites.

**RL-0041 Nuclear Facility D&D – River Corridor Closure Project****RL-0041.R1.1: 100K Area Remediation**

- Complete preparations for UPR-100-K-1 waste site
- Continue preparations for remediation of the 100-K-42 waste site
- Removal of 117KE Exhaust Air Filter Building Roof Panels.
- Continue mechanical and electrical isolation of the 183KW complex
- Continue characterization of the 183KW Complex.
- Complete incorporation of comments on the 105KE Reactor Core Removal 30% Design
- Continue debris removal from the KW basin