

# Weekly Progress

AMERICAN RECOVERY & REINVESTMENT ACT

Week Ending Jan. 14, 2011









CHPRC-01163

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 put people to work and 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 by 2013, three years 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.

For information about CHPRC, including weekly Recovery Act newsletters and videos, visit www.plateauremediation.hanford.gov or contact <a href="mailto:chprcc@rl.gov">chprcc@rl.gov</a>.



# **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 <a href="https://www.youtube.com/hanfordplateau">www.youtube.com/hanfordplateau</a>.

#### **PLUTONIUM FINISHING PLANT D&D**





# **RL-0011 Nuclear Materials Stabilization & Disposition**

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

#### ACTIVITY

#### PFP WASTE REMOVAL & DISPOSITION

	Week of Jan. 14, 2011	Completea to Date with Recovery Act funding	
Gloveboxes/hoods removed	4 gloveboxes	101 gloveboxes/hoods	
MLLW/LLW shipped	-	2,318 m³	
TRU shipped	15 m <sup>3</sup>	376 m³	
Non-radioactive waste shipped	-	23 m³	
Process transfer line removed	-	346 feet	
Process vacuum system piping removed	36 feet	626 feet	
Asbestos removed	180 feet	12,797 feet	

#### Process and Laboratory Areas

Thirty experienced staff transferred to PFP from other CHPRC projects last week received orientation, began PFP facility-specific training, and were assigned to the field work teams to accelerate schedule recovery in preparing the laboratory and process areas for demolition, in accordance with Key Performance Parameter 2 of sub-project RL-011.R1. The additional staff included nuclear chemical operators, radiological control technicians, and field work supervisors.

Gloveboxes 143-3 and 4 were removed from the Analytical Laboratory and transferred to waste operations, completing removals from the room. All gloveboxes and hoods have now been removed from 26 of the 30 rooms in the Analytical, Standards, and Process Development Laboratories, and the backside vaults that once contained gloveboxes or hoods.

In the RMA Line, two gloveboxes, HA-22 and HA-21I, and three of the five sections of the 70-foot-long HA-28 conveyor have now been removed. In the RMC Line more than 900 pounds of lead shielding was removed from the first of two gloveboxes in room 227.





Photo 1

Four standard waste boxes were shipped out of the Plutonium Finishing Plant, filled with transuranic waste from glovebox removal activities in the facility.

#### 2736-Z/ZB Vault Complex

Two of the four retorts that once supported high temperature plutonium stabilization furnace operations in glovebox 642-B were removed. Preparations were completed for removal of ventilation exhaust filters in room 636, and the work package was finalized for removal of glovebox 642-A. The crew also began preparations for removing a portion of the wall between rooms 642 and 641 to support removal of these last two gloveboxes from the building.

#### 242-Z Americium Recovery Facility

The 242-Z building has been successfully isolated from all plant electrical power and is now utilizing temporary power for all applications. Work was initiated to fully enclose the breezeway from the 2727-Z dress/change area to the 242-ZA airlock.



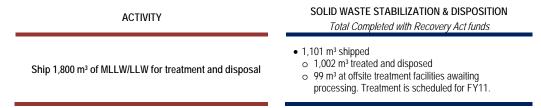


Photo 2

A radiological control technician observes as a pipefitter cuts a portion of process vacuum line inside a glovebag containment in the 234-5Z building of the Plutonium Finishing Plant.

# RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: Mixed Low-Level Waste/Low-Level Waste Treatment



One MLLW shipment of 36 drums (7.5 m³) was made from Perma-Fix Northwest (PFNW) suspect TRU repackaging activities to PFNW mixed waste treatment facility for macroencapsulation. The repackaged drums were assayed at PFNW and determined to be non-TRU and dropped out from the TRU Project as MLLW debris. The treated MLLW will be prepared for disposal in the Hanford Mixed Waste Disposal Units.

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



In Trench 17 of the 3A burial ground, Box 19 (11.0 m³) was removed, portable assay was completed on Box 13, and fabrication of a temporary cover for Box 27 was completed. Containers are being excavated at the west end of the trench. A container of contact-handled waste (18.4 m³) from Trench 8 was shipped to the Central Waste Complex (CWC).

At the 4B burial ground, excavation uncovered the first 3 x 3 x 3 foot concrete box and an adjoining metal box in Trench 11. Four concrete-shielded overpacks were staged for high-dose containers. Preventative maintenance work packages continued for the mobile drum venting system (mDVS), including one-year electrical cord inspection, beta continuous air monitor (CAM) calibration, monthly functional tests, and the six-month grounding system check.

At the 12B burial ground, Instrument Technicians finished CAM checks on the Drum Venting Systems (DVS) 2E and DVS3. Retrieval mock-up training materials were removed from the 12B Weather Enclosure (2202E). Millwrights continued to work on annual inspection of new 8 x 4 x 4 foot waste containers. Trenches were watered down in preparation for excavation next week. Ground-penetrating radar scans were completed on Trench 27.





Photo 3

A concrete box and an adjoining metal box are being excavated from Trench 11 in the 4B burial ground.

TRU Repackaging & Shipments

#### **ACTIVITY**

Repackage 850 m³ of WIPP certifiable TRU waste

Disposition 2,000 m<sup>3</sup> of contacted-handled TRU waste

SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funding

- 653.0 m3 have been repackaged
- 868.2 m³ have been disposed

CHPRC completed six TRUPACT-II shipments to the Idaho facility last week, for a total of 125 TRUPACT-II shipments completed since March 2010.

Of the 637 m³ of low-gram, large box TRU mixed waste planned for repackaging with Recovery Act funds, 43.6 m³ was repackaged this week, bringing the total to 243.4 m³ repackaged (40 m³ with base funds). CHPRC also shipped 30.6 m³ of contact-handled TRU waste off-site for disposition.



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

RL-0030.R1: Central Plateau Soil & Groundwater

	WELL DRILLING & DECOMMISSIONING	
ACTIVITY	Week of Jan. 14, 2011	Complete to Date with Recovery Act funds
Install 265 wells and/or boreholes along the river and in the Central Plateau	21 wells in progress	293
Decommission 280 old wells and boreholes that are no longer of service	Planning in progress	186

#### 200W Groundwater Treatment Facility

The project poured approximately 100 cubic yards of concrete, bringing the project-to-date total to approximately 7,900 cubic yards placed. Subcontractor Skanska USA Build Inc. and its subcontractors continued inside grading, rough-in electrical, temporary heat, fire protection, and power for the Radiological Building; installation of the equipment pad was initiated. Installation of the fire protection well, dry systems, and roof are complete while wall insulation and sheeting were initiated for the Bio Process Building. Installation of the equipment pad was initated for the Bio Pad.

Activities for the transfer buildings under construction by subcontractor George A. Grant Construction included (listed by building):

- Extraction #2: Punchlist items continue to be completed.
- Injection #1: Punchlist items continue to be completed.
- Injection #2: Roof and wall insulation and sheeting continue.



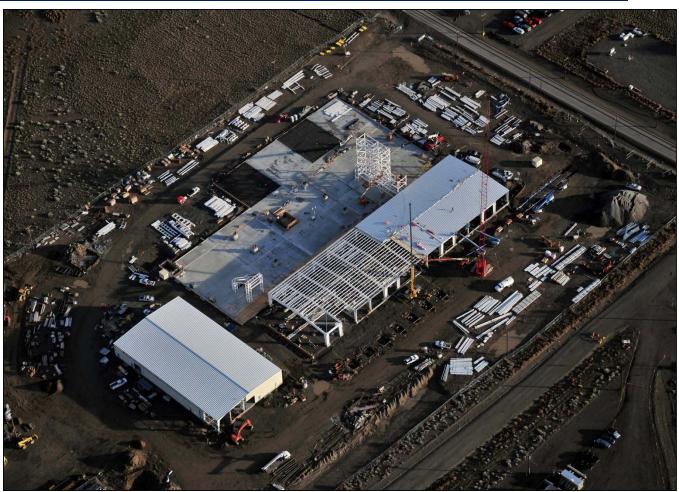


Photo 4

An aerial view of the 200 West Groundwater Treatment Facility during construction in January 2011. The Radiological Building is shown left and the Bio-Process Building is shown right.

## DX Groundwater Treatment Facility

The DX system is operating at approximately 470 gallons per minute and being optimized prior to the start of Operations Test Procedure activities.



# 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

- 2734EA Gas Cylinder Storage Bldg
- 275E Carpenter Shop Bldg
- MO104Mobile Office
- MO405 Mobile Office
- MO840 Mobile Office
- X8 Motor Car Shed\*
- 224U UO3 Plant Concentration/Load-out Bldg
- 284WB Package Boiler Plant

TOTAL: 100,257 square feet

# PLANNED FOR D&D/IN PROGRESS

- 284E Power House & Steam Plant
- 209E Critical Mass Laboratory
- 284W Power House & Steam Plant
- 2701-W Coal Handlers Shed\*
- 2902-W Water Storage Tank\*

\*Not part of the Key Performance Parameter

#### U Canyon

Core drilling of 7 of 11 external holes through U Canyon's five-foot-thick walls were completed last week, with the final four expected to be completed this week. The holes will provide grout conveyance access to the canyon. Mobilization of the on-site batch plant commenced, with construction beginning this week and bids for the plant's power scope due next week. Development of grouting work packages continues. The 90 percent design for removal of the D-10 tank from Cell 30 has been submitted for review by the Environmental Protection Agency.





Photo 5

Workers drill into the side of the U Canyon. CHPRC has drilled 7 of 11 planned holes into the canyon building's five-foot-thick walls to provide grout conveyance access to the canyon. The canyon cells and void spaces will be filled with grout in preparation for demolition of the canyon, scheduled to begin in 2012.

#### U Plant Ancillary Facilities

Final surveys and grading of the site of five demolished U Ancillary buildings will be completed this week. Closure documentation is being prepared.

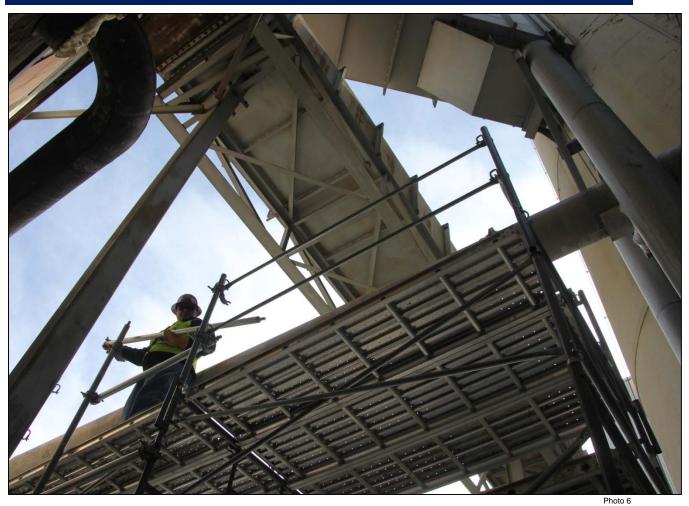
#### 200 East Core Industrial Area

Asbestos abatement of the first floor of the 284-E Powerhouse is now complete, with final cleanup and loadout from the building expected to be completed this week.

#### 200 West Area Industrial Facilities

CHPRC completed further asbestos abatement of exterior steam lines at the 284-W Power House in preparation for the Feb. 14 explosive demolition of the Power House's two exhaust chimneys and the 2902-W water storage facility. Demolition preparations on the 2901-W Coal Handler's Shelter are complete.





Week Ending January 14, 2011

A worker breaks down scaffolding after further asbestos was abated from exterior steam lines of the 284-W Powerhouse in preparation for upcoming explosive demolition planned for the building's two exhaust chimneys.





The 2901-W Coal Handler's Shelter is ready for demolition in the 200 West Area of the Hanford Site.

Photo 7

### 209-E Criticality Mass Laboratory

Preparations for the demolition of the 209-E Mass Criticality Laboratory progressed significantly last week. Tank 108 has been completely removed and loaded out, and tanks 206, 213, 214, and 215 and their process piping were removed from glovebox HO-200, with three standard waste boxes of TRU waste loaded out in all. Six slab tanks and two cylindrical tanks have all been verified dry, and the electrical isolation of HO-170 in the Critical Assembly Room is now complete as well.





Photo 8

A worker surveys a box of waste loaded out from the 209-E Criticality Mass Laboratory. Last week, the last of Tank 108 was removed from the facility. Tanks 206, 213, 214, and 215 and their process piping were also removed from glovebox HO-200, with three standard waste boxes of transuranic waste loaded out in all.

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

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

212N	Storage Building	
0400	EL 11 101	· T

212P Electrical Storage & Transformer Shop

212R Storage Building

614 Monitor Station

646 Radioecology Field Laboratory

6652G ALE Field Storage Building

6652H ALE Laboratory 1

6652I ALE Headquarters

6652J ALE Laboratory II

6652S Sentry Shed\*

6634 ENW Tower and Building\*

6635 Crown Castle/Cingular Tower and Building \*

6637 Tri City Amateur Radio Tower and Building\*

6632 Verizon Telephone Enclosure\*

6652M Fallout Laboratory 6652R Acid Storage Shed

6652C Space Science Laboratory

6652CSHED Storage Building

6652D Pump House

 $6652T\ Fire\ Protection\ Lower\ Pump\ House$ 

6652U Rattlesnake Mountain Upper Pump House

623A Plant Radio Relay Bldg

T520-6 Navy MARS Radio Station

6631 Radio Telescope Pedestal\*

6630 Hodges Well Pumphouse\*

6636 Columbia Communication Tower and Building\*
6633 Franklin County Communication Building\*





#### North Slope Debris Removal

Personnel with CHPRC subcontractor Sealaska Environmental Services continue debris cleanup in Areas 10, 13, 14, 16, and 18 of the North Slope.

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

CHPRC workers continued visual inspections of the cask cars, with 7 of 11 cars completed. All inspections are expected to be complete this week. Discussions with representatives of the B Reactor museum regarding preservation of the locomotives and/or cask cars are ongoing.

#### Waste Sites

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

WASTE SITE IN PROGRESS	TONS OF CONTAMINATED SOIL REMOVED	
WASTE SITE IN FROURESS	Week Ending Jan. 14, 2011	Total to Date with Recovery Act funds
600-286/287-PL	-	14,895
200-W-147-PL	858	6,450
BC Control Area	6,100	304,000

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

- 200-MG-1
  - o 600-40: Additional direct push testing (DPT) is anticipated to occur in January.
  - o 600-220: Retrieve, treat, and disposal (RTD) activities will be required.
  - o 600-222: The Remedial Action Report is being reviewed by DOE-Richland Operations office and the Regulators.
  - 216-S-19: Analysis of laboratory results of surface sampling revealed some elevated levels of contamination above the remedial action levels. No action will be taken until DPT samples are taken and analyzed.
  - 216-S-26: Selection of a vendor was completed with a notice to proceed issued on January 7, 2011. Site walk downs have been conducted and a kick-off meeting is scheduled with the vendor.
  - 600-281: Confirmatory Sampling No Further Action sampling was performed and RTD will be required.
  - o 200-W-147-PL: Excavation is ongoing.
- 200-CW-3
  - 216-N-4: The remaining site verification package (RSVP) is being prepared. Backfill is being hauled for 216-N-4 and N-6 with approximately 40,000 tons stockpiled and backfill began.
  - 216-N-6: The RSVP is being prepared. Radiological Operations completed site downposting.
  - o 600-286-PL: Remediation is complete. Analytical results indicated the RTD is complete. The site has been down-posted and backfill begun.
  - o 600-287-PL: Remediation is complete. Analytical results indicate the RTD is complete. The site has been down-posted.
- BC Control Area
  - o For Zone A, approximately 116 acres have been excavated and surveyed.
  - o For Zone B, radiological down-posting surveys are ongoing.





CHPRC is backfilling a waste site in the 200 North Area. The waste site is located in the 200-CW-3 operable unit near the former 212-N, -P, and -R interim fuel storage buildings, which CHPRC demolished in 2009 and backfilled in 2010.

# 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
- 183.3KW Filter Basin
- 183.7 KW Pipe Tunnel
- 110KE Gas Storage Facility
- 116KE Reactor Exhaust Stack
- 118KE Horizontal Control Rod Storage
- MO048 Construction Lunch Trailer
- MO969 Ops/HPT Change Trailer

TOTAL: 485,643 square feet

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

- 183.4KW Clearwell
- 190KW Main Pump House
- 183.4KE Clearwell
- 115KE Gas Recirculation (subgrade structures)
- 117KE Exhaust Air Filter (subgrade structures)
- 190KE Main Pump House
- 1605KE Guard House
- 181KE River Pump House

#### Facility D&D

Demolition work and debris loadout continued on both the east (office area) and west (horizontal control rod rack) sides of the 105-KE Reactor Building.





Week Ending January 14, 2011

CHPRC is concurrently demolishing the east and west sides of the 105-KE Reactor Building. Shown here is demolition on the horizontal control rod rack on the west side of the building.

Photo 10



Demolition continues on the administrative area on the east side of the 105-KE Reactor Building.

#### Infrastructure Utilities Upgrade Project

The second of two grounding wells for the new A9 substation began this week; drilling progressed to a depth of 69 feet of a planned total depth of 189 feet. The six-day operations test was completed on Jan. 13 to demonstrate compliance with the State of Washington drinking water standards. Installation of the fire alarm system is ongoing in the plant. Modifications to the multi-purpose water storage tank and punch list items on the micro-filtrations system are planned for this week.

#### Waste Sites

CHPRC continued excavating soils from the 100-K-42 waste site associated with the 105-KE Reactor Discharge Chute, for a total of 956 tons removed last week and 16,335 tons removed to date. Planning for the remediation of the 100-K-57 waste site continued.



# **UPCOMING EVENTS**

# **RL-0011 Nuclear Materials Stabilization & Disposition**

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

- Complete decontamination and remove the last two glove boxes from the 2736-ZB vault support building.
- Complete equipment removal from gloveboxes 145-1 and 152-522.
- Complete D&D and remove gloveboxes 2, 3, 4, 6, and 9 from room 179.
- Complete RadPro® chemical decontamination of glove box HA-46 in the RMA Line.
- Complete decontamination of HA-19B1 and B2 with Aspigel®, and determine its effectiveness as an alternate decontamination process.
- Complete removal of equipment from conveyor gloveboxes HC-3 and HC-4.
- Complete size reduction and packaging of gloveboxes 139-3 and 139-4.
- Continue removing process vacuum and process transfer piping.

# RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- One LLW shipment (5.2 m<sup>3</sup>) planned from CWC to PFNW.
- Two MLLW shipments (1.4 m<sup>3</sup>) planned from CWC to PFNW.
- One MLLW shipment (11.6 m<sup>3</sup>) planned from CWC to PFNW.

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

- TRU Retrieval
  - o 3A burial ground:
    - Complete fogging of Trench 17 Box 27; begin repairs and continue excavation around the box.
    - Complete excavation and removal of Trench 17 Boxes 21, 17, and 14.
    - Complete portable assay of Trench 17 Boxes 14, 17, 19 and 21
    - Ship Trench 8 Boxes 33 (49.1 m<sup>3</sup>) to CWC.
  - o 4B/4C burial grounds:
    - Remove approximately 10 m³ of remote-handled waste from Trench 11.
    - Complete preventative maintenance and review/approval of operating procedure SW-100-154 for the mDVS at 4C.
    - Conduct enhanced work plan session for Package & Ship Containers procedure (SW-100-201).
  - o 12B burial ground:
    - Initiate excavation for waste removal.
    - Close out any open actions from the Contractor Readiness Assessment.
- TRU Repack
  - Eight planned shipments
  - o Recommence repack operations at the Waste Receiving and Processing Facility.
- Suspect TRU Waste Shipments
  - o 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.
- Continue well drilling and decommissioning.

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

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

- Complete drilling of four remaining external holes at U Canyon for grout conveyance.
- Continue construction of the on-site batch plant.
- Continue preparing closure documentation for the U Ancillary facilities.
- Continue demolition preparations for the 284-W exhaust chimneys and 2902-W water storage facility.

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

- Continue debris removal at the North Slope.
- Complete visual inspections of four remaining contaminated cask-carrying railcars and continue preparations for disposition.
- Continue backfilling the 216-N-4 and 216-N-6 waste sites.
- Continue remediation of BC Control Area and 200-MG-1 and 200-CW-3 waste sites.

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

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

- Continue demolition on east and west side of the 105-KE Reactor Building.
- Begin grading of access road for demolition of 181-KE River Pumphouse structure.
- Continue drilling on the grounding wells for the A9 substation.
- Perform modifications to the multi-purpose water storage tank and punchlist items for the micro-filtration system.
- Continue excavating soil from 100K Area waste sites.

