

Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

Restore the River Corridor

Nuclear Energy Legacies

Shipping drums — containing small-diameter (less than 8 inches), sodium-wetted piping that was removed from the sodium test loop in the 337B and 3718M Buildings — were shipped to an off-site treatment center.

Requests for expressions of interest were sent to potential vendors for work involving disposition of the residual sodium in the 3718M storage vessel and the 337B Building Composite Reactor Component Test Activity (CRCTA) vessel.

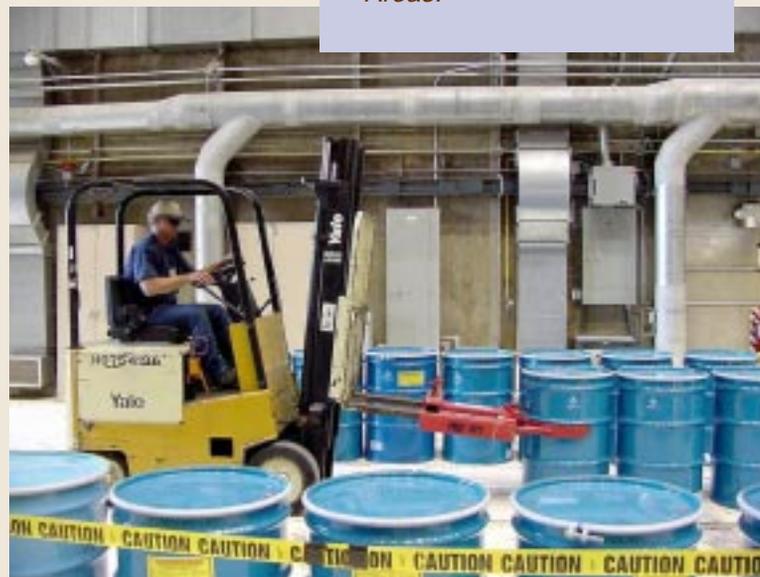
Field work was completed for preparing the 3718M Sodium Storage Tank for sodium residual cleaning.

The sodium cold trap from the 337-B Building was prepared for shipment to an off-site treatment center.

Roof repairs were completed on the 309 Building, which is now in a low-cost surveillance and maintenance condition.

The river corridor encompasses approximately 210 square miles adjacent to the Columbia River. It is divided into three areas:

- *the 100 Area, comprising nine shut-down plutonium production reactors and support facilities*
- *the 300 Area, comprising manufacturing and research facilities*
- *the 600 Area, encompassing the mostly vacant land between the 100 and 300 Areas.*



Operating Engineer Lenny Bultena picks up a drum containing sodium piping removed from the sodium test loop in the 337B and 3718M Buildings. The drums are being loaded onto a truck for transport to an off-site treatment center.

Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

Central Plateau Remediation Project

In the 300 Area, the 310 Treated Effluent Disposal Facility and the 340 Facility Project were successfully transitioned from the Central Plateau Remediation Project to the Waste Management Project on July 8.

The 324 Building staff met the accelerated schedule goal of completing four spent nuclear fuel (SNF) shipments by September 30. The third and fourth shipments were completed seven weeks ahead of the Performance Incentive due date of November 20.

On September 30, the 324 Building received a remote manipulator tool to help clean up contaminated cells. This tool, called the AEA ARTISAN™, has a reach and payload capacity that is nearly ten times greater than the installed manipulators. ARTISAN™ is expected to improve productivity during the cleanout and will be used in deactivating the hot cells of the Shielded Materials Facility in the 324 Building.



Project personnel weld the shield plug onto a cask containing SNF before it is shipped from the 324 Building.



The 11-foot ARTISAN™ arm is a remotely operated tool that will help clean up contaminated cells in the 324 Building.

The River Corridor Project became the Central Plateau Remediation Project on July 1, and assumed the work scope transferred from the Environmental Restoration Contractor including the Groundwater Protection Program (formerly Groundwater/Vadose Zone), the 200 Area Facility Disposition Project, and the 233-S Facility Decommissioning and Decontamination Project.

The mission of the Central Plateau Remediation Project is to transition the plateau from its current post-operational state to a state where excess facilities and waste sites are cleaned up; and waste characterization, retrieval, treatment, storage and disposal operations are performed in an environmentally sound, safe, secure and efficient manner.

Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

Central Plateau Remediation Project

The cleanout of excess and obsolete equipment in the 327 Building basement is complete.

The Accelerated Site Technology Deployment-sponsored ISOCS Gamma Spectrometer — the last of four systems to help characterize the 327 Building hot cells to determine if they can be removed as whole units — was received.

Certification for final closure of the 303K Building was received from the Washington State Department of Ecology under the Resource Conservation and Recovery Act (RCRA).

In the 200 Area, the Equipment Disposition Project completed dispositioning lead from recycled cask cars. A rail flat car was provided to an off-site user, accelerating the disposition of the flat car by six months and saving \$225,000.

At B Plant, roofing contractors erected the roof frame and installed 40 percent of the roof panels.

At the Plutonium Uranium Extraction Facility (PUREX), workers finished roof repairs on the PUREX Tunnels and the 231-Z Building.



Workers install new roof panels at B Plant.

Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

Central Plateau Remediation Project

The design for the pump system to remove water discovered in the 224-T C Cell was completed. The water and silt were sampled and results indicate that no unsafe or hazardous conditions exist, so that water can continue to be removed.

Workers removed the structural steel inside the 233-S Building, making way for decontamination and ultimate demolition.

Staff members began using the Geoprobe and cone penetrometer, drilling equipment used for establishing shallow boreholes. The boreholes are used to sample the air found in the soil for carbon tetrachloride vapor. Ninety-five locations were sampled this quarter.

At the end of fiscal year 2002, the Groundwater Protection Program's pump-and-treat stations operated at an annual average rate of 97.5 percent availability. Pump-and-treat stations extract contaminated groundwater, treat the water to remove the contaminants of concern, and then re-inject the treated water back into the ground.

Four additional groundwater monitoring wells will be installed in FY 2003 in the 200 Area.

In the 100 Area, all five *in-situ* redox manipulation (ISRM) re-injections were completed, re-establishing barrier integrity. *In-situ* redox manipulation uses a chemical "curtain" or treatment zone to transform a hazardous chemical in the groundwater into a non-hazardous form. The re-injections refer to re-injecting the barrier chemicals into existing ISRM wells to re-establish the barrier "curtain."



Workers use a Geoprobe drilling apparatus (above) to take vapor samples to test for carbon tetrachloride (below).



Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

Spent Nuclear Fuel Project

This quarter, 43 MCOs of spent nuclear fuel were shipped out of K-West Basin, double the total shipped in the previous best quarter. These 43 loads contained more than 202 metric tons of irradiated uranium and nearly 6.5 million curies of radioactivity that were removed from the Columbia River shoreline.

Project personnel cleaned and removed 839 fuel canisters from K-West Basin by the end of FY 2002, nearly 40 percent more than required.

Hanford Site Operations personnel fabricated a total of 1,653 spent fuel baskets by the end of FY 2002, completing more than 75 percent of the total baskets needed. The steel baskets, which are 2 feet high and 22 inches wide, each weigh 500 pounds. Basket fabrication continues ahead of schedule.



MCOs for spent fuel are made of stainless steel. Each MCO is about 14 feet high and 24 inches wide.

The Spent Nuclear Fuel Project reduces the risk to the Columbia River by safely relocating fuel, sludge, debris and water residing in the K Basins to interim storage in the center of the Hanford Site.

Most of the spent nuclear fuel stored in the K Basins was irradiated in the now shut-down N Reactor. Before the Spent Nuclear Fuel Project began moving fuel out of the K Basins in December 2000, 105,000 N Reactor fuel assemblies resided there. The amount of radioactivity, measured in curies, was approximately 55 million curies.

Spent fuel is placed in baskets and then loaded into multicanister over-packs, or MCOs. The MCOs are lifted out of the basin water, dried in the Cold Vacuum Drying Facility and placed in dry interim storage in steel tubes in the Canister Storage Building in Hanford's central plateau.

Contents

Highlights

Hanford Site Map

Restore the River Corridor

Transition the Plateau

Prepare for the Future

Support and Services

Environment, Safety & Health

Contacts

Spent Nuclear Fuel Project

Forty-three MCOs with full quality inspections were received. The project now has more than 65 percent of the total MCOs needed.

The Canister Storage Building accepted the first two loads of Shippingport Reactor spent nuclear fuel from T Plant. The first four loads of light water reactor spent nuclear fuel from the 324 Building were relocated to the Interim Storage Area next to the Canister Storage Building.

The Spent Nuclear Fuel Project passed the third annual quality assurance audit by the Department of Energy's National Spent Nuclear Fuel Program with "effective" ratings in all categories.



Moving fuel canisters from K-West Basin results in empty fuel canister racks, as shown above.



T Plant personnel began moving Shippingport Reactor fuel this quarter.



A load of Shippingport fuel arrives at the Canister Storage Building.

Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

Environmental Restoration Along the River

The Environmental Restoration Contractor Team, led by Bechtel Hanford, Inc, completed drum removal and excavation at the 618-4 burial ground. Mobilization and site preparation for the nearby 618-5 burial ground is complete. Mobilization and site preparation for remedial action work is also underway at the K Reactor area. This quarter, nearly 185,000 tons of contaminated material were removed from several sites in the River Corridor and placed in the Environmental Restoration Disposal Facility.

The Environmental Restoration Contractor team completed the Interim Safe Storage “cocooning” of the DR Reactor nearly a year ahead of schedule. Two of Hanford Site’s reactor cores — C and DR — are now safely stored for up to 75 years, awaiting final disposition. Cocooning of three other reactors is underway. As of the end of the quarter, F Reactor is 86 percent complete, D Reactor is 85 percent complete and H Reactor is 39 percent complete.



The final footprint of the completed DR Reactor safe storage enclosure is 80 percent of the original facility footprint.

Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

What's Next in Restoring the River Corridor?

- Issue a Request for Proposal for the disposition of the residual sodium in the 3718M storage vessel and the 337B Building CRCTA vessel. Up to 500 gallons of residual sodium may remain in these two drained vessels.
- Complete field work for preparing the CRCTA vessel for removing residual sodium.
- Remove, dry and place in storage, approximately 50 more loads of spent nuclear fuel from the K-West Basin.
- Maintain safe work hours record.
- Begin fuel transfers from K-East Basin to K-West Basin.
- Complete construction, installation and Operational Readiness Review of the K-East Basin Sludge/Water System.
- Complete acceptance of all 324 Building light-water reactor spent nuclear fuel, and all 400 Area Training, Research and Isotope (Production) General Atomics (TRIGA) research reactor fuel to the Interim Storage Area next to the Canister Storage Building.
- Dispose of the ion-exchange columns in the 183K vaults.



The Fuel Transfer System that moves fuel from the K-East to the K-West Basin will be operational in FY 2003.

Contents

Highlights

Hanford
Site Map

Restore the
River Corridor

Transition
the Plateau

Prepare for
the Future

Support and
Services

Environment,
Safety & Health

Contacts

What's Next in Restoring the River Corridor?

- Complete the accelerated shipment of all remaining 324 Building spent nuclear fuel assemblies and the shipment of the spent nuclear fuel segments and fragments.
- Transfer the 300 Area scope to the River Corridor Closure Contract in FY 2003.
- Complete cleanup at the 618-4 Burial Ground.
- Begin cleanup at the 618-5 Burial Ground.
- Complete removal of the F Reactor Fuel Storage Basin.



The shutdown K Reactors can be seen from the Columbia River.