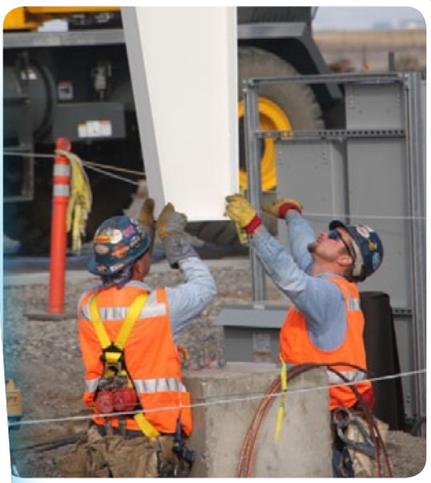


EM RECOVERY NEWS

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EM Recovery News Highlights Accomplishments in \$6 Billion Environmental Cleanup

In 2009, the American Recovery and Reinvestment Act invested \$6 billion in 91 projects across U.S. Department of Energy Office of Environmental Management (EM) sites in 12 states. In the 30 months since then, the funding has benefited more than 35,800 workers, many of whom were unemployed or underemployed in a recession. During the execution of the original 91 projects, unrealized risks and efficiencies allowed an additional 33 projects be undertaken. By Sept. 30, 2011, a total of 84 projects were completed. The remaining 40 projects will be completed during the fiscal years 2012 and 2013. Recovery Act work will continue in the months ahead, accelerating the cleanup of the legacy of the Manhattan Project and Cold War. In this issue, read about the latest achievements of Recovery Act workers. For example, the Savannah River Site's \$1.6 billion Recovery Act Program recently celebrated the cleanup and closure of the P and R Areas after workers deactivated and decommissioned the P and R Reactors. Workers in the Office of River Protection at the Hanford Site have finished work at Hanford's tank farms funded by \$326 million from the Recovery Act. Their work helped the site prepare to treat waste at the Waste Treatment Plant, which is now under construction. This issue also highlights the safe and successful completion of the environmental cleanup mission at the SLAC National Accelerator Laboratory in September 2011.



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Thomas Johnson, Jr. is the Director of the EM Recovery Act Program.

Message from Thomas Johnson, Jr.

For me, the end of September 2011 marked a time to celebrate EM's \$6 billion American Recovery and Reinvestment Act Program.

We safely completed a significant amount of work in the 30 months since launching our Recovery Act-funded cleanup of the legacy of the Manhattan Project and Cold War.

The more than 35,800 workers who benefited from Recovery Act funding finished 84 of 124 Recovery Act projects through Sept. 30, 2011. That total includes projects in the program's original scope, as well as additional work we undertook due to unrealized risks and efficiencies achieved during the execution of the original scope. Take a look at a few performance metrics we track that shed light on the magnitude of these historic accomplishments: workers have demolished more than 5.79 million square feet of facilities and disposed of more than 97,000 cubic meters of low-level and mixed low-level waste.

Also impressive is the fact that more than 90 percent of the 91 projects in the original Recovery Act portfolio met cost and schedule targets through August 2011. And overall, Recovery Act projects have performed 5 percent under cost. That is all

good news as we work to finish our mission for the American people.

You can also measure our achievements by the square miles of Cold War legacy footprint we have eliminated. Through September 2011, Recovery Act workers achieved a total footprint reduction of 613 square miles, or 66 percent of EM's total footprint of 931 square miles. It is also important to note we surpassed the Administration's High Priority Performance Goal of a 40 percent footprint reduction in April 2011, a full five months ahead of schedule.

We exceeded goals at many of the 17 sites across the DOE Complex that received Recovery Act funding. The Moab Uranium Mill Tailings Remedial Action Project in Utah is among the notable success stories. Workers moved more than 2.6 million tons of tailings to a permanent disposal facility, far outpacing their primary target to ship 2 million tons. The Moab Project perfected techniques for efficiencies that led to cost savings and additional tailings disposal. For example, they maximized the number of railcars used to ship tailings and constructed a container wash facility that substantially reduced the amount of surveys for radioactivity of container exteriors needed before shipment.

We achieved Recovery Act success in part because of our unprecedented transparency. We maintained regular meetings with stakeholders to provide updates on projects and help them understand the work scopes and accompanying costs. We also worked with regulators, such as the South Carolina Department of Health and Environmental Control, which oversaw work at the Savannah River Site in South Carolina.

Our program put thousands of people to work. Many were struggling financially before joining our team. They have since gained valuable work experience and specialized skills, and are positioned for new careers.

Recovery Act work continues into 2012. Meanwhile, we are on track to shrink EM's footprint to 90 square miles by 2015, an immense reduction from the 3,125-square-mile footprint that existed in 1989 when EM began its cleanup. □



Hanford Site Looks Back on Recovery Act Accomplishments



The 200 West system will be Hanford's largest groundwater treatment facility. The facility is scheduled to begin operating in 2012.



Workers load a section of a pump from one of two river pump houses workers demolished along the Columbia River shore.

RICHLAND, Wash. – A \$1.6 billion Recovery Act investment provided Richland Operations Office at the Hanford Site the challenge to accelerate Cold War cleanup and an opportunity to put people to work who were affected by the economy.

Hanford accomplished that mission by hiring qualified workers who safely and successfully completed cleanup across the 586-square-mile site.

DOE contractors CH2M HILL Plateau Remediation Company and Washington Closure Hanford completed Recovery Act work at Hanford that set the foundation for future cleanup and will help DOE achieve its vision of a reduction of the Hanford cleanup area to 75 square miles by 2015.

“In two and a half years, we have lived up to some very high expectations,” said CH2M HILL President and Chief

Executive Officer John Lehew. “We’ve made more progress on the site than has ever been accomplished before in two-and-a-half years. We accelerated critical environmental cleanup that’s important not only to our community but also to stakeholders and leaders far beyond the Tri-Cities.”

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Hanford Site Looks Back...

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Building Workforce Skills and Experience

Recovery Act funds benefited more than 10,130 workers at Hanford through the end of June 2011.

CH2M HILL advertised job fairs nationwide, attracting hundreds of people and employers, to obtain workers and transition Hanford's highly skilled workforce into new work. CH2M HILL also awarded more than half of its contracts to small businesses, helping those companies gain new skills and experience.

Washington Closure subcontracted to 153 small businesses to complete Recovery Act work. About 94 percent of the Recovery Act funds Washington Closure used for subcontracting went to small businesses, significantly more than the 65 percent the company is required to direct that way.

Recovery Act workers also contributed to a major safety milestone. Washington Closure and its subcontractor employees have worked 5 million hours without a lost work day injury for the first time since the project started in August 2005.

"We have achieved this record because of the strong safety culture of our employees and their commitment to the safe, execution of river corridor cleanup activities each and every day," said Carol Johnson, Washington Closure president and project manager.

Reducing Lifecycle, Surveillance, and Maintenance Costs

Safety, efficiencies and innovations enabled CH2M HILL to exceed many of its Recovery Act cleanup goals.

Under the Recovery Act, workers demolished more than 75 buildings, exceeding a DOE target to demolish 49 buildings. Some of the buildings removed were the length of several football fields and nearly 200 feet tall.

At the Plutonium Finishing Plant (PFP),



DOE contractor CH2M HILL Plateau Remediation Company sponsored a job fair in August 2011 with more than 120 employers looking to meet Hanford Site employees.

formerly one of Hanford's highest security facilities, workers also prepared 30 ancillary facilities for demolition in addition to removing 130 glove boxes, more than 1,700 feet of highly contaminated process vacuum and transfer piping and more than 15,000 feet of asbestos. Workers also removed the facility's security systems, which were no longer needed after workers removed special nuclear material from the facility in 2009.

Expanding and Enhancing Groundwater Protection

CH2M HILL drilled 303 wells, surpassing a goal to drill 265 wells. The company also closed 280 wells no longer needed.

The Recovery Act also funded construction of the 100-DX and the 200 West groundwater treatment facilities. The 100-DX system helped Hanford treat more than 800 million gallons of groundwater in one year — a record for the site. The 200 West system will increase Hanford's groundwater treatment capacity from 75 million gallons per month to 150 million gallons a month.

Managing Legacy Waste and Fuels

CH2M HILL also exceeded the following Recovery Act targets:

- Shipped 2,121 cubic meters of mixed low-level and low-level waste for treatment (1,800 cubic meters planned);

- Repackaged 1,226 cubic meters of transuranic (TRU) waste for disposal at the Waste Isolation Pilot Plant (WIPP) in New Mexico (850 cubic meters planned);
- Retrieved 88 cubic meters of remote-handled TRU waste (50 cubic meters planned);
- Dispositioned 2,510 cubic meters of contact-handled TRU waste (2,000 cubic meters planned). This total will increase approximately 200 cubic meters as waste shipped for treatment is completed and returned for disposal; and
- Retrieved 2,602 cubic meters of TRU waste from underground storage (2,500 cubic meters planned).

CH2M HILL also completed 217 TRUP-ACT-II shipments to WIPP in cooperation with other DOE contractors, a project that resumed thanks to Recovery Act funds.

Expanding Waste Disposal Capabilities

Recovery Act dollars supported a \$100 million expansion and upgrade of the Environmental Restoration Disposal Facility (ERDF). That facility is Hanford's landfill for low-level radioactive and hazardous mixed waste generated from cleanup activities throughout the site.

The expansion by Washington Closure and its subcontractors was completed

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Recovery Act Projects at SLAC are Complete, Making Land Available for Reuse

MENLO PARK, Calif. – Recovery Act workers safely completed their environmental cleanup mission at the SLAC National Accelerator Laboratory in September 2011, opening land to future missions of the DOE Office of Science.

The Recovery Act invested \$14.3 million in the cleanup of nearly 35,000 cubic yards of soil and debris legacy waste — enough to fill more than 10 Olympic swimming pools — and the construction of three groundwater extraction systems to remediate affected groundwater.

“These successful Recovery Act projects not only benefited 200 workers, but they also strengthened the relationships of the many stakeholders in the project, including the Office of Science and Stanford University, which operates SLAC for the DOE under a contract with the Office of Science,” said EM Federal Project Director Kevin Bazzell.

The Recovery Act accelerated completion of EM legacy cleanup by one year.

“The DOE Office of Science SLAC Site Office (SSO) is pleased to see the completion of the physical construction phase of the EM soil and groundwater remediation project at SLAC,” SSO Environmental Scientist Dave Osugi said. “The completion of these activities and achievement of the EM project objectives in fiscal year 2011 is largely the result of the effective ongoing communication and interfaces between the EM Oakland Projects Office, SSO, Stanford University, and the Regional Water Qual-



These photos show the Clean Landfill, the site of the largest Recovery Act-funded soil and debris removal project at the SLAC National Accelerator Laboratory, before (right) and after (above) cleanup.

“**These successful Recovery Act projects not only benefited 200 workers, but they also strengthened the relationships of the many stakeholders in the project, including the Office of Science and Stanford University, which operates SLAC for the DOE under a contract with the Office of Science,**”

EM Federal Project Director Kevin Bazzell

ity Control Board to resolve many complex environmental cleanup issues.”

Workers excavated soil and debris from about 10 acres of land that included a large former landfill and shipped the waste to local disposal facilities. The Office of Science is already using some of the land that was cleaned up for parking and storage.

George Leyva, an engineering geologist with the San Francisco Bay Regional Water Quality Control Board, surveyed the completed Recovery Act work.

“I am satisfied with the extent of the excavation work as well as the progress to finalize those areas to prepare them for the upcoming wet weather season,” Leyva said.

Workers replaced the affected soil and debris with clean soil. They added thousands of pounds of mulch to control erosion and prevent sediment from discharging to a nearby stream and other waterways.

Stanford weighed in on the benefits of EM’s Recovery Act projects.

“Stanford is pleased that the DOE was able to use Recovery Act funding to successfully accomplish remediation of soil sites and installation of ground-

water treatment systems, on an accelerated basis, ahead of the required regulatory schedule. These actions contribute to a reduced overall site risk at SLAC, and bring us one step closer to the desired end state of unrestricted use for the Stanford property,” said Dr. William Madia, Stanford’s Vice President for SLAC.

The longest linear accelerator in the world is located at SLAC, a multi-program national research laboratory for particle physics, particle astrophysics and cosmology, photon science, and accelerator research and development.

The SLAC National Accelerator Laboratory was formerly known as the Stanford Linear Accelerator Center. □

Argonne Accomplishes Recovery Act Work to Reduce its Legacy Nuclear Footprint

ARGONNE, Ill. — Argonne National Laboratory used \$79 million from the Recovery Act to complete two major decontamination and demolition projects and significantly reduce its radioactive materials and waste inventory.

That work reduced the site's legacy nuclear footprint and lowered on-going surveillance and maintenance costs.

The Lab's Recovery Act work benefited about 500 workers. Many of those workers were employed by small businesses awarded contracts for the demolition work at the radiological facilities. Their work included fence construction, asbestos removal, and site restoration.

Recovery Act workers demolished the 52,743-square-foot Chicago Pile-5 Reactor facility in 2010. That reactor was the fifth and final member of the Chicago Pile family of pioneering research reactors. Workers are installing an asphalt cap over the building's footprint and planting native grasses over the rest of the site.



In 2011, workers demolished the former Experimental Waste Processing, Storage and Shipping Building. Prior to demolition, they removed asbestos and decontaminated the 41,434-square-foot building.

More than half of the Lab's Recovery Act funds supported two material- and waste-disposition campaigns that reduced the site's inventory of transuranic (TRU) waste and irradiated fuel specimens left over from former research activities.

By the end of September 2011, Recovery Act workers packaged and removed 250 drums of remote-handled TRU waste from three of Argonne's nuclear facilities — the Alpha Gamma Hot Cell Facility (AGHCF), Building 205 K-Wing, and Building 200 MA/MB Wing.

More than 180 of those drums have been disposed at the Waste Isolation Pilot Plant (WIPP) in New Mexico, including 40 drums of fuel examination waste. Argonne was the first facility in the DOE complex to ship that waste — a unique category of remote-handled TRU waste with high activity — to WIPP. The remaining drums will be shipped to WIPP through spring 2012.

On Sept. 30, 2011, Argonne shipped the last of the Lab's legacy contact-handled TRU waste inventory — contained in 70 drums — to Idaho National Laboratory (INL) for processing before it is permanently disposed at WIPP.

In December 2010, all of the irradiated sodium-bonded fuel specimens at AGHCF were shipped to INL. Those



These photos show the site of former Experimental Waste Processing, Storage and Shipping Building before and after a Recovery Act-funded demolition.



These photos show the site of the Chicago Pile-5 Reactor facility before and after a Recovery Act-funded demolition.

specimens were originally sent to Argonne for research purposes from reactors at the former Argonne-West facility, which is now part of INL. □

Bottom left two photos: The top photo shows a hot cell in the 205 K-Wing where many containers of fuel specimens were located. Prior to the Recovery Act-funded cleanup, the facility was designated a Hazard Category 2 nuclear facility. The bottom photo shows the cell following the cleanup. All of the research and development fuel specimen material was processed for disposal at the Waste Isolation Pilot Plant in New Mexico as remote-handled TRU waste. The facility was downgraded from a nuclear facility to a radiological facility after the cleanup.

Recovery Act Accelerated Closure of Waste Tanks at Savannah River Site

AIKEN, S.C. – Recovery Act funding has helped liquid waste contractor Savannah River Remediation (SRR) work toward the goal of closing hazardous waste tanks at the Savannah River Site (SRS).

By the end of September 2011, SRR Recovery Act workers had essentially completed all 41 activities funded by \$200 million from the Recovery Act, with administrative closure activities scheduled through March. SRR's Recovery Act work began in September 2009. At the peak of construction activities in 2010, the projects employed more than 600 people.

SRR Recovery Act Project Manager Mark Schmitz said Recovery Act work has been nothing short of excellence.

“Two years ago we prepared for Recovery Act funding by selecting activities and work scopes just in case we received some Recovery Act funding,” Schmitz said. “We did, and we went right to work. Wasting little time, we accomplished a great deal by providing upgrades to much of the liquid waste infrastructure and improvements to waste treatment processes that will enable us to close tanks quicker.”

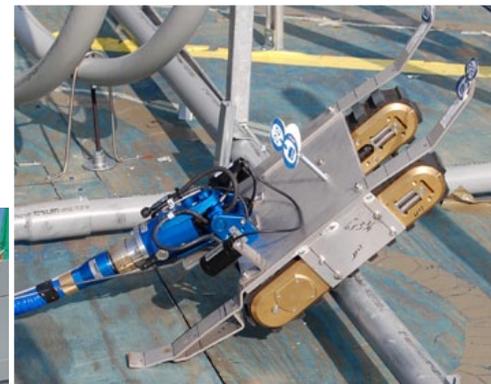
A key accomplishment was the instal-

lation of bubbler technology at the Defense Waste Processing Facility (DWPF), the nation's largest nuclear waste processing facility. At that facility, more than 3.4 million gallons of high-level radioactive waste has been vitrified into a stable glass form and placed into large stainless steel canisters suitable for long-term storage.

When all process enhancements are in place, average annual canister produc-

tion at DWPF is expected to increase to 400 canisters, representing a 40 percent improvement over past performance.

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Top photo: A robotic device named Tizzy was retrofitted by Savannah River Remediation (SRR) employees to collect and remove tank waste. Using \$100,000 from the Recovery Act, SRR designed and built Tizzy. Here the robot is being tested on a mock-up of a waste tank.

Middle photo: Savannah River Remediation employees complete the placement of an electrical substation that will be used in tank closure activities at SRS. Approximately \$400,000 from the Recovery Act was used to purchase the substation, which feeds into an electrical equipment skid that provides power to mixer and transfer pumps used in tank closure activities and for other infrastructure on the two tank farms at SRS.

Bottom photo: Bubbler technology is being tested prior to placement in the 64-ton melter at the SRS Defense Waste Processing Facility. The advanced technology injects argon gas into the superheated glass and waste mixture in the melter allowing for more efficient stirring of the melt pool. This improvement, along with other enhancements, will increase the production rate of vitrified waste by approximately 40 percent.



Recovery Act Work Comes Just in Time for Many at Paducah

PADUCAH, Ky. – The Recovery Act touched nearly 1,000 lives at the Paducah Site, including new and existing workers, vendors, suppliers, and subcontractors.

Brandon Henderson, one of about 240 people hired for full-time work on Recovery Act projects, said his engineering job followed a year of searching during the last recession.

“I can’t tell you how grateful I was to find the job because that was my last stop,” said the May 2009 graduate of the University of Kentucky College of Engineering at Paducah.

Henderson, who grew up in Paducah, now works with the U.S. Enrichment Corp (USEC), which enriches uranium at the Paducah Site.

“The Recovery Act work gave me a chance to work with veteran engineers as well as engineers closer to my age,” said Henderson, 30. “Those experiences got me involved in some things that will help in my work here at USEC.”

In late 2009, Randy Scott’s engineering company, Diversified Management Consultants (DMC) LLC, hired nine engineers under the Recovery Act. DMC is a small business teaming partner with LATA Environmental Services of Kentucky, the Paducah Site cleanup contractor.

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Brandon Henderson checks a pump in the water treatment facility at the Paducah Gaseous Diffusion Plant. The former Recovery Act engineer now works for the U.S. Enrichment Corp.





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“Experience like this from a new engineer’s perspective is hard to find in the Paducah area,” said Scott, Engineering and Technical Services manager for LATA Kentucky. “The Recovery Act afforded them this opportunity.”

Former Recovery Act engineers are now with Babcock & Wilcox Conversion Services, which operates a Paducah Site facility to convert depleted uranium hexafluoride (DUF₆) into more stable material; and Honeywell Specialty Chemicals in Metropolis, Ill., which manufactures UF₆.

“Many others hired as part of the Recovery Act were unemployed or underemployed people whose job skills and marketability were enhanced by the training and expertise gained at the Paducah Site,” said Rob Seifert, the Department’s Recovery Act project director at Paducah.

Workers underwent three months of rigorous training, including regulatory compliance, safety systems, hazard communication, hazardous materials handling, use of protective gear, and mobile equipment operation. The Paducah Site worked with West Community & Technical College to customize training.

Maintenance mechanics were certified in plasma arc cutting and other types of welding to remove miles of piping from old buildings being cleaned up and torn down with Recovery Act funds. Electricians underwent training to safely track and dismantle long-unused electrical systems.

Brad Morgan, who managed a crew that cleaned up the Paducah Site’s East End Smelter, said the Recovery Act training and experience helped him get hired at a chemical plant in western Kentucky.



Morgan left the Paducah Site in January 2011, four months after the smelter was torn down.

All of the estimated \$80 million Paducah received from the Recovery Act went to prime and subcontracts awarded to small businesses. That included more than 60 equipment and mobile home suppliers, uniform rental stores, and other vendors. □

Top photo: A Recovery Act worker cuts equipment loose from the East End Smelter. Specialized training at West Kentucky Community & Technical College helped provide the skills needed to clean up old, inactive buildings at the Paducah Site.

Bottom photo: Heavy machinery demolishes the East End Smelter in September 2010. Recovery Act work moved the project ahead 22 years, and \$12 million in Smelter savings was shifted to Feed Plant cleanup.

Savannah River Site Recovery Act Program Completes P and R Reactor Projects in Accelerated Cleanup

AIKEN, S.C. – The Savannah River Site (SRS) completed 94 percent of its \$1.6 billion Recovery Act Program through September 2011, a feat involving thousands of workers who recently finished the massive P and R Reactor Area closure projects.



The SRS Recovery Act Program workforce stands in front of the P Reactor, which was deactivated and decommissioned under the Recovery Act.

By Sept. 30, 2011, Savannah River Nuclear Solutions (SRNS), the site's management and operations contractor, reduced the site's 310-square-mile operational footprint by 219 square miles, or about 70 percent, surpassing the original commitment of a 67-percent reduction. Workers transformed contaminated structures and lo-

cales into environmentally safe assets for future missions across the site, with SRS well on its way to a 75-percent reduction in 2012.

ahead of schedule, contributing nearly 62 square miles to the site's total footprint reduction. Central to the project was the deactivation and decommissioning (D&D) of the P and R Reactors, a milestone that distinguishes the production reactors as the first in the DOE Complex to reach the *in-situ*, or in place, state. Workers used hundreds of thousands of cubic yards of grout — enough to fill four Home Depot stores — to seal the reactor buildings.

EM Acting Assistant Secretary David Huizenga joined federal and state regulators and the Recovery Act team at SRS to celebrate the conclusion of the 30-month project.

Huizenga applauded the closure of the P and R Areas and pointed to a new initiative to transform past environmental liabilities into revitalized assets for future use.

“The accomplishments achieved through the Recovery Act, such as the closure of P and R Reactor Areas, are tremendous, but I commit to you that SRS is not a closure site,” Huizenga said. “Through the implementation of *Enterprise SRS*, the site will utilize its nuclear materials workforce, knowledge,

and assets to help the nation address its critical missions in the three key areas of environmental stewardship, clean energy, and national security.”

Just over 500 regulatory milestones were achieved on or ahead of schedule in the P and R Areas. Workers demolished 15 facilities that together occupied nearly 800,000 square feet.

In 2010, SRS celebrated the cleanup and closure of the M Area, the first area closure under the Recovery Act at SRS. The M Area spanned 45 acres and included a reactor fuel manufacturing area. Workers remediated 19 waste units, used grout to seal process sewer line manholes, and treated about 4,000 cubic yards of contaminated soils and concrete rubble.

In June 2011, workers completed the decommissioning of the Heavy Water Components Test Reactor (HWCTR). This project was remarkable for the highly technical engineered lifts required to remove the top of the reactor's 174,000-pound dome so workers could clear the reactor's 29-foot-tall base. The project was completed 13 years ahead of schedule.

Recovery Act workers imploded the

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“The accomplishments achieved through the Recovery Act, such as the closure of P and R Reactor Areas, are tremendous, but I commit to you that SRS is not a closure site, ”

*EM Acting Assistant Secretary
David Huizenga*

Workers completed the cleanup and closure of the P and R Areas five years



455-foot-tall K Reactor Cooling Tower in May 2010. The debris from the massive implosion was disposed or recycled by August 2010. The project was completed safely and contributed 36.5 square miles to the site's total footprint reduction.

SRS's accelerated transuranic (TRU) waste program has shipped 2,032 cubic meters of TRU waste to the Waste Isolation Pilot Plant (WIPP) in New Mexico for permanent disposal since the start of Recovery Act work. The site will continue shipments until all remaining inventory of TRU waste is removed.

Much of this TRU job-control waste containing trace amounts of plutonium-238 had been stored at the site since operations began in the 1950s. In the 1970s, DOE facilities at sites such as Los Alamos National Laboratory sent TRU waste to SRS to recycle the plutonium. That process turned out to be cost prohibitive and the waste remained on a concrete pad, called TRU Pad 1, in culverts and boxes beneath a mound of dirt.

These stored materials contaminated with radioactive and hazardous materials were a significant safety concern for decades. Recovery Act funding allowed the SRNS Solid Waste Division to unearth these containers, evaluate their contents, remediate and repackage the waste, and characterize the newly packed drums and boxes for shipment to WIPP.

In 2011, SRNS converted areas in F and H Canyons and a low-level waste vault in E Area to use for repackaging TRU waste for safe shipment to WIPP. In addition, the DOE recently began using the Transuranic Package Transporter Model 3, or TRUPACT-III, which allows workers to package and ship large-sized TRU waste in a single box that would otherwise have to be broken down into smaller waste boxes. This new shipping package accelerates the pace of cleanup and reduces risks to worker safety. □

Top photo: Savannah River Site Manager Dr. David Moody, left to right, South Carolina Department of Health and Environmental Control Environmental Quality Control Deputy Commissioner Robert W. King, Jr., Savannah River Nuclear Solutions President and CEO Garry Flowers, EM Acting Assistant Secretary David Huizenga, and Environmental Protection Agency Region 4 Section Chief David Williams gather together at P Reactor on Sept. 29, 2011 to celebrate the cleanup and closure of the P and R Areas.

Bottom photo: Savannah River Nuclear Solutions President and CEO Garry Flowers, right, presents EM Acting Assistant Secretary David Huizenga with a memento from the Sept. 29, 2011 event marking the P and R Area completions.

Recovery Act Accelerated Closure of Waste Tanks...

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Expedited glass-waste processing through the bubbler technology is accelerating closure of the remaining 49 underground tanks. Thanks to Recovery Act funding, more tanks are in the closure process at SRS than at any time in the SRS history.

The Recovery Act supported the development and deployment of robot devices to sample the composition of tank waste. It also invested in significant improvements to aging liquid waste operations infrastructure. Those upgrades will avoid delays due to equipment failure and disruptions to waste processing. Recovery Act-funded enhancements to electrical systems and added protective pipe shielding have prepared liquid waste operations for integration with the Salt Waste Processing Facility, which is under construction and slated to begin operating in 2014.

Other accomplishments include the procurement and installation of major equipment to accelerate waste removal and tank closure. Those items include a 9,000-gallon nitrogen tank, 3,000-gallon argon tank, two 60,000-gallon salt solution receipt tanks, a 35,000-gallon waste concentration hold tank, and 14 mixing, blending and transfer pumps.

SRR President and Project Manager Dave Olson noted the project team's safety accomplishments.

"At peak project activity, more than 600 workers supported Recovery Act projects and they have performed their work safely," Olson said. "Despite the challenging nature of much of the construction activity, the Recovery Act workforce completed more than 1.5 million hours of work with no injuries that resulted in days away from work, with only one minor first-aid injury. This is an outstanding accomplishment." □



Recovery Act Fuels Accelerated Cleanup at Paducah Site

PADUCAH, Ky. – Recovery Act workers at the Paducah Site removed more than 230,000 cubic feet of waste — enough to fill a football field five feet deep.

An estimated \$80 million from the Recovery Act led to the demolition of five inactive Cold War structures exceeding 57,000 square feet in total footprint. In addition, the Recovery Act funding helped prepare two large buildings with a total footprint over 250,000 square feet for demolition. They are scheduled to be razed in 2012.

All the complexes were heavily contaminated and, without Recovery Act funding, would not have been cleaned up for many years. Accelerating cleanup avoided \$28 million in inflationary costs.

“The Recovery Act enabled us to further our mission of cleaning up the site by getting rid of structures with no reuse potential and reducing that environmental liability,” said Rob Seifert, the Paducah Site Recovery Act project director.

Recovery Act funding accelerated the cleanup and demolition of a 21,000-square-foot complex known as the East End Smelter, used until 1986 mainly to smelt nickel, by 22 years. Before the Smelter was razed in September 2010, Recovery Act workers met 24 Recovery Act milestones in removing more than 60,000 cubic feet of contaminated waste, notably a bedroom-sized furnace and equipment weighing up to 250,000 pounds.

About \$12 million was saved on the Smelter project and then shifted to cleanup of the Feed Plant, a nine-facility complex spanning nearly 200,000 square feet. It operated from 1957 to 1977 to produce uranium hexafluoride (UF₆) and fluorine.



Photos above: A crane removes electrical equipment (top) from the half-acre eastern third of the Feed Plant. The section (bottom) was demolished in summer 2011.

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Feed Plant workers met 40 Recovery Act milestones while integrating a comprehensive recycling program. Placing debris in an on-site landfill saved about \$1.5 million in costs associated with transporting the material to an approved off-site disposal facility.

Workers removed more than 60 tons of reusable copper bus bars and decontaminated more than 100 fluorine-generation cells that were turned over to private industry for reuse, saving about \$2.5 million in disposal costs. The equipment was used to make fluorine.

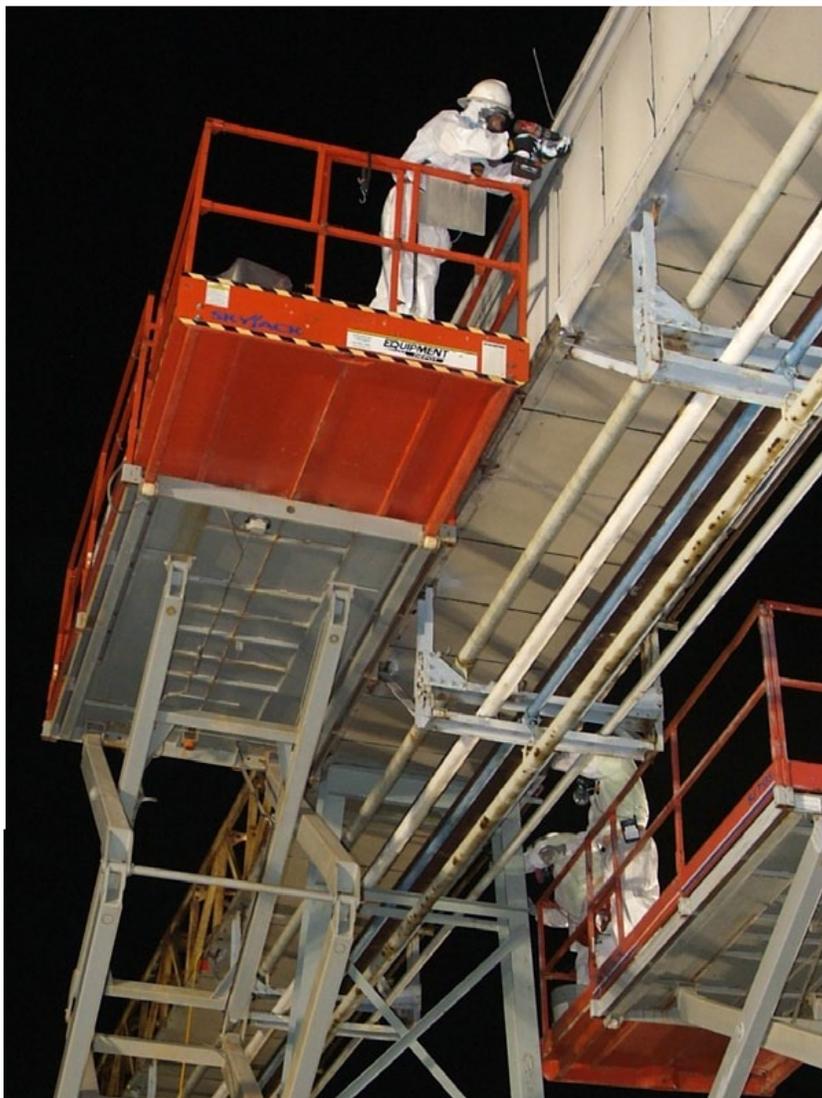
Heavy equipment demolished the half-acre eastern third of the Feed Plant in late June 2011, three months ahead of schedule. Cleanup of the rest of the complex is ongoing in anticipation of demolition in 2012.

A third Recovery Act project resulted in the 65,000-square-foot Metals Plant being declared demolition-ready in early August 2011, saving \$2.5 million by accelerating cleanup five years ahead of schedule. Workers met 25 milestones with the Metals Plant cleanup, notably demolishing 4,000 square feet of ancillary facilities in July 2010 and completing magnesium fluoride systems removal in December 2010. Magnesium fluoride was used in making uranium metal.

The Metals Plant operated until the mid-1980s, mainly to convert depleted UF_6 into uranium tetrafluoride (UF_4), known as green salt. □

Top right photo: Workers removed more than 60 tons of reusable copper bus bars from the Feed Plant. The roughly quarter-inch-thick plates were stacked in three or four layers to conduct electricity in making fluorine.

Bottom right photo: A night crew in summer 2011 dismantles uranium hexafluoride tie lines linking the Feed Plant with other buildings at the Paducah Site. Added shifts helped accelerate cleanup.



Top Recovery Act Workers Come from Thousands of Applicants

PADUCAH, Ky. – Hiring, training, and mobilizing 240 full-time workers became a way of life for Elizabeth Wyatt, who in August 2009 took over as the Recovery Act project manager for the Paducah Site cleanup contractor.

Four job fairs drew about 5,300 applicants in the worst recession since the Great Depression. Wyatt and human resources officials looked for people with experience in construction, industry, and other relevant backgrounds. They worked many weekends interviewing to find the best candidates.

“We wanted to make sure we gave everyone a fair shot at the jobs,” said Wyatt, who works for LATA Environmental Services of Kentucky, LLC.

Physicals, background checks, orientation, and extensive training followed. Eighteen mobile homes had to be acquired and serviced with utilities as a base of operations. Vans, drivers, and routes posed other logistical challenges.

“This whole thing was a huge effort that took multiple departments within LATA Kentucky working together,” Wyatt said.

Experienced workers were paired with new workers in three huge complexes that had been inactive for many years. Dedication to safe, efficient cleanup was a key reason for the success of Recovery Act work, said Wes Adams, a heavy equipment operator and member of United Steelworkers Local 550.

“The company has gone above and beyond on the training,” Adams said. “The supervisors have done an excellent job keeping people from getting hurt in the timeframe they’ve had to work in.”

Rigorous safety training has paid off.

LATA Kentucky is approaching 1 million hours without a lost workday due to job-related injury or illness.

Adams started Recovery Act work in November 2009 after a slump in the lumber industry threatened his heavy equipment business. He operates a remote-con-



trolled demolition machine in areas too tight for mobile cranes. The machine has a hydraulic arm that can reach about 23 feet and snip materials loose.

Other innovations at Paducah included use of mobile cranes to improve safety and efficiency, and adding a night shift to combat summer heat.

Crews initially found the buildings to be dark, full of debris, and contaminated with hazardous chemicals in multiple long-abandoned operating systems, said front-line supervisor Chris Stewart.

“There were hazards around every corner.”

Workers overcame the challenging conditions to safely clean up the buildings.

Stewart moved to western Kentucky from North Carolina to take a job in the metals industry. He got laid off during the recession and was hired at the Paducah Site in September 2009.

Stewart worked with Adams and front-line manager Scott Wildharber in a com-

plex known as the Metals Plant, where uranium metal was made. Seven stories high in some places, the Metals Plant had been inactive since the mid-1980s.

“One of the biggest challenges was getting the elevator to work,” said Wildharber, a former railroad electrical shop superintendent. “It was the only way we had of accessing the floors and moving waste.” □

Top photo: Scott Wildharber, left, and Wes Adams discuss blueprints for the Metals Plant (background) that was declared demolition-ready in August 2011 as part of the Recovery Act program at the Paducah Site.

Bottom left photo: A remote-controlled demolition machine improved safety and efficiency in accelerating cleanup in the Metals Plant. Heavy equipment operators such as Wes Adams specialize in using the equipment.



Recovery Act Lays Foundation for Future Success in Oak Ridge

OAK RIDGE, Tenn. – Change has been a constant across the Oak Ridge Reservation in the past two years.

In 2009, the Recovery Act infused \$755 million into Oak Ridge's Environmental Management (EM) program, jumpstarting 24 cleanup projects and benefiting more than 8,000 workers.

Many of the initial Recovery Act projects were completed under budget, allowing Oak Ridge to reinvest savings into 12 additional projects to accelerate cleanup and meet regulatory milestones. The Recovery Act also helped Oak Ridge accomplish crucial and strategic cleanup projects years ahead of schedule.

“The Recovery Act was instrumental in funding projects that have significantly improved the safety profile of our site,” said John Eschenberg, assistant manager for Oak Ridge's EM program. “With many of these projects complete, Oak Ridge is now postured for greater successes in the future.”

Since May 2009, changes brought by the Recovery Act have swept across Oak Ridge's three major campuses—the East Tennessee Technology Park (ETTP), the Oak Ridge National Laboratory (ORNL), and the Y-12 National Security Complex (Y-12). Each campus has diverse missions and cleanup needs. Through the Recovery Act, each accomplished key

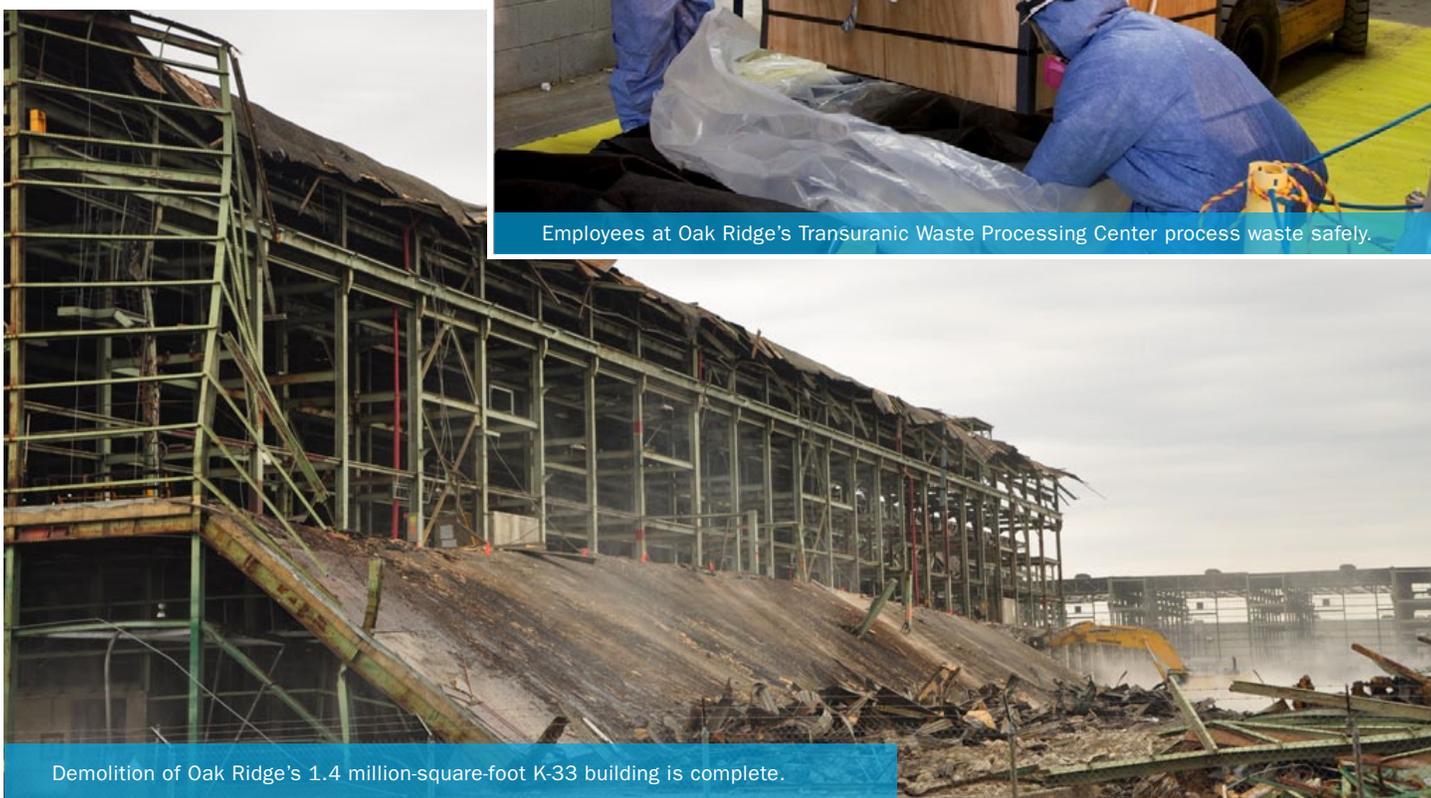
projects that enhanced safety and laid a foundation for future cleanup.

The demolition of facilities has accounted for the largest visible change across the reservation. Since 2009, Oak Ridge removed 42 facilities with a combined footprint of 1.7 million square feet. They included former uranium enrichment plants and Manhattan Project research facilities. Facility removal eliminated contamination risks, reduced surveillance and maintenance costs, and cleared the way for future missions. The demolitions also allowed EM access to remove contaminated soils beneath the structures.

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Employees at Oak Ridge's Transuranic Waste Processing Center process waste safely.



Demolition of Oak Ridge's 1.4 million-square-foot K-33 building is complete.



Moab Tailings Removal Project Exceeds Recovery Act Goals

MOAB, Utah – The Moab Uranium Mill Tailings Remedial Action Project epitomizes the intent of the Recovery Act to quickly fund projects to stimulate the economy and provide increased employment.

The Moab Project exceeded its goals for the \$108 million in Recovery Act funds it received, and expended that funding three months ahead of schedule.

The project is tasked with relocating a 16-million-ton pile of uranium mill tailings — remains from processing uranium ore for national defense programs — away from the Colorado River by rail to a permanent disposal cell constructed by DOE 30 miles to the north near Crescent Junction, Utah. The Recovery Act helped accelerate that project by funding the disposal of a portion of the total tailings.

“Although shipping 2 million tons of mill tailings was the original Recovery Act goal, we used savings resulting from efficiencies we gained in our first two years of moving tailings to ship 2.6 million tons with Recovery Act dollars,” Moab Federal Project Director Donald Metzler said.

Using Recovery Act funds, the Moab Project increased its weekly train shipments from four to 10. The project hired more than 200 employees to facilitate preparing the additional shipments and maximizing trainloads. That was 25 percent more than the 160 new jobs anticipated under the Recovery Act.

The Moab Project accomplished several other Recovery Act-funded activities. Workers constructed a state highway underpass that is considered a significant safety enhancement. They also paved access and haul roads, rail load-out areas at the Moab site and the disposal cell, and the Moab site’s Support Area. Paving reduces wear on vehicles, minimizes the water needed for dust suppression, and reduces road maintenance costs over the life of a project. A 1,700-foot-long, 35-foot-wide stretch of tamarisk trees was removed along the Colorado River bank adjacent to the groundwater well field. Workers are replacing those invasive, nonnative trees with native plant species to improve aesthetics and encourage wildlife.

The Recovery Act also funded the purchase of additional equipment, including a second American-made gantry crane to increase the efficiency in load-

ing and unloading tailings containers from the railcars. Construction of a container wash facility substantially reduces the number of surveys for radioactivity of container exteriors before shipment. Workers installed 19 new wells, including seven extraction wells that enhance remediation of groundwater by focusing on contaminant mass removal closer to the tailings pile. At the Crescent Junction site, workers excavated 92 percent of the second portion of the disposal cell, and barrier layers of the final cell cover were placed where tailings have been compacted to the design height. The remainder of the second portion of the cell will be completed later this year with base program funding. □





“ Although shipping 2 million tons of mill tailings was the original Recovery Act goal, we used savings resulting from efficiencies we gained in our first two years of moving tailings to ship 2.6 million tons with Recovery Act dollars, ”

Moab Federal Project Director Donald Metzler



Background photo: One of two gantry cranes that load and unload tailings containers from the railcars is pictured on the hillside rail bench west of Moab.

Bottom left photo: An aerial view from west of the Moab site shows the tailings pile excavation.

Bottom right photo: The disposal cell is shown here in various stages, from the final cover layers (the light gray section on the left), to the tailings material being compacted (the reddish portion in the center), to the excavation of the second phase (right).



Brookhaven Recovery Act Workers Implement New Reactor Decommissioning Approach

UPTON, N.Y. – Brookhaven National Laboratory (BNL) Recovery Act workers are carrying out a new, more effective approach to demolishing a reactor bioshield.

The Brookhaven Graphite Research Reactor (BGRR) Bioshield is a five-foot-thick concrete and steel wall that surrounded a 700-ton graphite pile Recovery Act workers removed in 2010. The bioshield protected workers from radiation emitted from the reactor's core when the BGRR was in operation decades ago.

Under the previous method for removing the bioshield, workers used a remotely operated excavator and gantry crane mounted on a rail system independent of the reactor structure. Excavator tools included a hammer that broke apart concrete and a bucket to scoop up debris. The excavator effectively removed the graphite pile, but it wasn't as efficient for removing the high-strength bioshield concrete under the project's schedule.

EM and its contractor, BNL Environmental Restoration Projects (ERP), determined that a larger, more powerful excavator and hammer would expedite reactor decommissioning. They decided to safely operate the larger excavator

from within the bioshield and deploy a hammer with more than twice the power of the one mounted on the rail system.

"We all recognized that this was a change from the original approach in which we wanted to minimize worker access to the industrial and radiological hazards within the bioshield," ERP Director Diane Rocco said. "We also knew we would need to take additional actions to ensure worker protection was not compromised while operating the excavator in this fashion."

Actions to improve safety included reinforcing the window of the excavator cab where the operator sits with metal grating to prevent injury from falling debris. ERP also directed an employee to work as a spotter to ensure the excavator operator is safe.

Rather than purchasing a new excavator, EM saved money by shipping one to BNL from the Savannah River Site in South Carolina. The new excavator is on track to expedite the decommissioning, which will end Recovery Act cleanup activities at the Lab. The decommissioning is scheduled for completion later this year.

The BGRR was the first reactor constructed for the sole purpose of provid-

ing neutrons for research. During its years of operation, it was one of the principle research reactors in the U.S. The reactor operated until June 1968 when operations were terminated and deactivation was initiated. □

Left photo: The Lab is using a more effective excavator, pictured here inside a contamination control enclosure, to demolish the Brookhaven Graphite Research Reactor Bioshield.

Middle photo: The Lab's new excavator hammers concrete and steel of the Brookhaven Graphite Research Reactor Bioshield's west wall.

Right photo: The Lab's new excavator enters the Brookhaven Graphite Research Reactor Bioshield through an opening in its west wall.



Protective layers are installed at Oak Ridge's Bethel Valley Burial Grounds. The enhancements further isolate waste and protect the underlying watershed.



included removing contaminated soil, diverting clean groundwater sources from buried legacy waste, and adding multiple layers of protection from the buried waste. These enhancements increase safety at ORNL, where the burial grounds are located and better protect the underlying watershed.

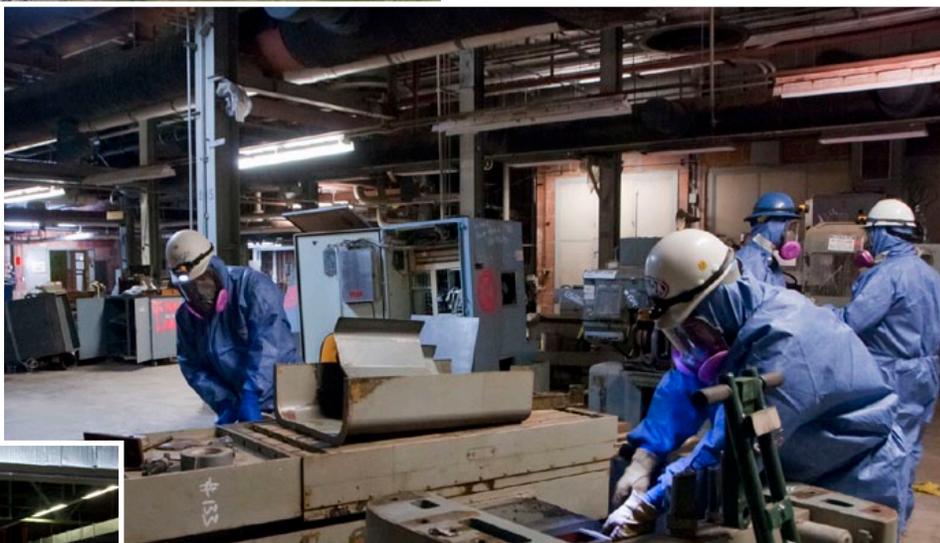
The Recovery Act also helped Oak Ridge process and ship transuranic waste off-site. Oak Ridge used \$143.5 million from the Recovery Act to accelerate waste processing by employing additional shifts of workers. Since the Recovery Act invested in waste processing and

Recovery Act Lays Foundation...

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At Y-12, the removal of four former Biology Complex facilities, Building 9735, and the 9206 Filter House reduced the campus's footprint and lowered security costs. The demolitions also launched Y-12's transition to a more modern defense complex.

At ORNL, removal of the 2000 Complex, Building 3026, and 26 central cam-



Workers empty Alpha 5, a 613,000-square-foot facility located at the Y-12 National Security Complex, move the building one step closer to becoming demolition ready.



A room in Y-12 National Security Complex's Alpha 5 is shown after waste removal.

the large facilities one step closer to becoming demolition-ready as funding becomes available.

pus facilities eliminated contamination risks, allowed access to contaminated soil for cleanup, and cleared land for future missions in science and research. Demolition of ETPP's Building K-33 expedited cleanup and land-transfer plans.

Workers removed large amounts of waste from four facilities (Building K-27, Building 3038, Alpha 5, and Beta 4), which together measure 1.3 million square feet, and characterized many other buildings. Those activities moved

Y-12's Old Salvage Yard, a seven-acre plot of contaminated scrap metal, was cleared, characterized, and remediated using Recovery Act funds.

Oak Ridge also completed work at the Bethel Valley Burial Grounds, a disposal area for solid, low-level radioactive waste that was used from 1943 to 1951. Workers completed soil remediation and upgrades to five areas needing improvement, including Solid Waste Storage Areas 1 and 3 and several landfills. Work

shipment, the Transuranic Waste Processing Center processed almost 500 cubic meters of waste and logged more than one million hours without any lost-work injuries. □



Recovery Act-Funded Study to Guide Cleanup at DOE Site

CANOGA PARK, Calif. – The U.S. Environmental Protection Agency (EPA) is conducting a comprehensive radiological study funded by \$38.3 million from the Recovery Act.

Under an interagency agreement with DOE, the EPA study is taking place in the part of the Santa Susana Field Laboratory (SSFL) where the DOE's Energy Technology and Engineering Center (ETEC) is located. SSFL is located on 2,850 acres of land in the hills between Chatsworth and Simi Valley. The former testing site was developed by DOE's predecessor agency, the Atomic Energy Commission.

Results of the study will guide cleanup decisions for this portion of SSFL, which was once used for a broad range of energy related research and development.

EPA divided their work into several discrete investigations to conduct

the radiologic characterization survey, many of which are now complete. A historical site assessment has been completed for all of Area IV and the Northern Undeveloped Land. All geophysical surveying has been completed. Groundwater sampling is finished and gamma scanning activities for 96 percent of Area IV and 21 percent of the Northern Undeveloped Land have been completed.

To date, EPA has collected more than 2,000 soil samples and surveyed more than 200 acres of land for gamma radiation. EPA is nearing completion of soil sampling activities for the first of two rounds of soil sampling and expects to complete all of Round 1 except for the Northern Undeveloped Land by the end of the December 2011. Plans for Round 2 sampling are being developed and will be implemented in 2012.

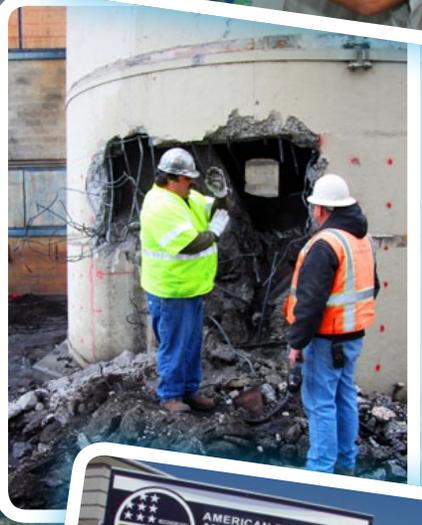
While EPA is collecting soil samples to determine the nature and extent of radiological contamination, additional samples are being analyzed by DOE for possible chemical contaminants in coordination with the California Department of Toxic Substances Control.

DOE closed remaining operations at ETEC in 1988, focusing on the cleanup and demolition of facilities, soil and groundwater remediation. □



Gamma scanning takes place near the Radioactive Materials Handling Facility Complex in Area IV of the Santa Susana Field Laboratory.





NNSS Wraps Up Recovery Act Work with List of Major Achievements

LAS VEGAS – The National Nuclear Security Administration Nevada Site Office (NSO) is reporting many successes with the completion of Recovery Act work, including the demolition of 50,000 square feet of facilities, on-site disposal of 222,835 cubic feet of waste throughout the DOE Complex, and major site closures.

NSO personnel are proud to conclude Recovery Act activities on a successful note, according to Deputy Federal Project Director Robert Boehlecke.

“We are very pleased with the quality and efficient pace of our Recovery Act work,” Boehlecke said. “The workers performed extremely well, safely, and efficiently, allowing us to make the progress that will ultimately save costs associated with long-term operations, maintenance, and infrastructure.”

In 2009 and 2010, NSO was granted nearly \$54 million from the Recovery Act to accelerate cleanup and enhance waste management operations at the Nevada National Security Site (NNSS) and the Tonopah Test Range.

All performance metrics related to the original Recovery Act scope were achieved ahead of schedule. Completed activities include:

- Demolition of several struc-

tures located at the Test Cell C facility;

- Demolition of the Pluto and Reactor Maintenance, Assembly, and Disassembly facilities;
- Drilling of two groundwater characterization wells, each approximately 3,400 ft. deep, in Pahute Mesa;
- Clean closure of seven locations at the Tonopah Test Range by removing buried ordnance and depleted uranium (clean closure is the status applied to sites where cleanup was achieved and use restrictions are not required); and
- Characterization of 17 historic atmospheric test locations at NNSS.

Efficiencies in scheduling and planning allowed for the addition of \$5 million in Recovery Act work, including:

- Closure of the 17 historic atmospheric test locations and contaminated railroad tracks (closure is a formal process involving the remediation of a site

where use restrictions and long-term institutional controls are necessary);

- Characterization and closure of an additional historic atmospheric test location;
- Completion of Streamlined Approach for Environmental Restoration (SAFER) plans for two historic atmospheric test locations (SAFER is a NSO-specific approach applied at sites where extensive knowledge exists regarding the nature and extent of contamination);
- Removal of depleted uranium and ordnance at an additional Tonopah Test Range site, allowing for the removal of use restrictions;
- Completion of additional groundwater modeling at Pahute Mesa; and
- Construction of drilling pads for two planned groundwater wells. □

A significant amount of Recovery Act funding supported characterizing or closing a number of historic nuclear test locations at NNSS, which remains one of the largest restricted-access areas in the U.S. In August 2011, NSO completed closure activities at Danny Boy, one of 68 underground tests conducted at NNSS from 1961 to 1962. Workers pictured here recorded radiological measurements from the rubble surrounding the Danny Boy crater in July 2010. Closure activities at Danny Boy and other key historic NNSS test locations such as Sedan, Schooner, and Buggy, represent a significant achievement for the DOE Complex.





Hanford Tank Farms Team Celebrates Completion of Recovery Act Work

RICHLAND, Wash. – The Office of River Protection (ORP) and prime contractor, Washington River Protection Solutions (WRPS), finished their work at Hanford's tank farms funded by \$326 million from the Recovery Act.

“The quantity and quality of the cleanup work that resulted from Recovery Act funding is evident everywhere on the Hanford Site,” said ORP Deputy Manager Stacy Charboneau. “This progress is a testament to our Recovery Act workers, who are some of the most dedicated and experienced in any industry. Their efforts helped move the Office of River Protection closer to making the treatment of tank waste a reality at Hanford.”

and development of technologies and systems to help ORP prepare to treat waste at the Waste Treatment Plant after it is built.

“The amount of work that's been accomplished in these past two years is simply remarkable,” said WRPS Acting Recovery Act Program Manager Shane Brown. “The Recovery Act has allowed us to upgrade tank farm infrastructure, extend the life of our operating facilities and prepare to feed waste to the Waste Treatment Plant. We're better prepared for our long-term mission of waste retrieval and treatment because we completed these projects.”

Crews working on Recovery Act projects in the tank farms amassed more than 1.5 million hours worked without an injury case that involved days away from work, work restrictions or the need for a job transfer.

“Our project and field folks have given their all,” said WRPS Tank Farms Projects Manager Rob Gregory. “It's been a real team effort across the site with everyone working together to get the job done safely. It's something we should all be proud of.”

WRPS joined forces with a number of subcontractors to complete the work by Sept. 30, 2011. In total, WRPS issued 858 subcontracts worth more than \$151 million. More than three-fourths of the subcontracts were awarded to small businesses, most of them local.

“We rely on our local small business partners to sustain the important work we do here at Hanford,” said WRPS Small Business Program Manager Melissa Garrard. “The Recovery Act increased our opportunity to help develop the local and regional economy by engaging local businesses in the important work we do.”

Although field work is complete, efforts

“The quantity and quality of the cleanup work that resulted from Recovery Act funding is evident everywhere on the Hanford Site.”

*ORP Deputy Manager
Stacy Charboneau*

ORP Deputy Federal Project Director for Recovery Act Isabelle Wheeler said ORP's task to spend Recovery Act funding in just two and a half years seemed almost insurmountable at first.

“Our workforce took on the challenge and did what some considered impossible. They immediately put the funding to good use, accomplishing a record amount of cleanup in that time,” Wheeler said.

The projects included upgrades to equipment to provide a safer and more efficient work environment for tank farm employees, facility renovations to support tank waste retrieval operations



to wrap up the necessary reporting and close out the program office will continue through March of next year. □

Top photo: Construction of new, Recovery Act-funded buildings, like the one shown here at Hanford's 222-S Laboratory, will significantly extend the life span of facilities that are critical to ORP's long-term mission of tank waste retrieval and treatment.

Middle photo: Hanford tank farm workers replaced deteriorating equipment in several of Hanford's valve pits with new parts. The Recovery Act-funded upgrades will help ensure a leak-free transfer of waste between tanks and improve safety and operations in the farms.

Bottom photo: A tank waste mixing and sampling demonstration funded by the Recovery Act will help ORP understand how to accurately sample and consistently feed large batches of high-level waste to the Waste Treatment Plant being built at Hanford.

Portsmouth Site Accomplishes Recovery Act Cleanup Ahead of Schedule

PIKETON, Ohio – Five major projects funded by the Recovery Act altered the Portsmouth Site skyline, removed more than 1,300 tons of legacy waste, and remediated a large contaminated groundwater plume.

“We are extraordinarily proud that these projects were completed on time and under budget,” said Portsmouth Site Director Vincent Adams. “The federal government’s proactive approach to creating jobs, coupled with the skill of the Portsmouth workforce, has furthered the DOE Office of Environmental Management’s mission and improved environmental conditions for the community.”

The nearly \$120 million Recovery Act investment in the site benefited 1,175 workers through June 2011. Workers completed the site’s original Recovery Act scope ahead of schedule and under budget. About \$23 million in savings from that original scope was used for additional cleanup.

Recovery Act workers reduced the site’s Cold War footprint by more than 1.6 million square feet by decontaminating and decommissioning a massive cooling water complex, electrical switchyard, and chemical engineering building.

Materials generated from Recovery Act demolitions have been recycled under an agreement between DOE and the Southern Ohio Diversification Initiative (SODI), a community reuse organization. Proceeds from the recycling further promote economic activity in the region. For example, SODI recently approved \$150,000 in financial assistance to the Southern Ohio Port Authority in Scioto County, Ohio, for industrial park

improvements. That funding will support construction of a steel processing company that expects to employ 100 workers.

The site’s original Recovery Act project scope included:

- Decommissioning of the X-633 Recirculating Cooling Water Complex, which included 58 cooling tower cells and a pump house. Workers removed excess material and equipment and demolished above-grade structures. The project was completed at a cost of \$11.4 million in June 2010.
- Decommissioning of the X-533 Switchyard, which included removal of asbestos containing material, buildings, high-voltage transmission towers, switchyard equipment, and foundation and slabs. Activities also included equipment decontamination, waste disposition, site restoration, and demobilization. The \$28.4 million project was completed in December 2010.
- Decommissioning of the X-760 Chemical Engineering Building, which included removal of the building structure, a concrete slab, piping, and other utilities. Other activities involved soil characterization, waste disposal, and demobilization (removal of equipment, dumpsters, and other items needed to operate the project). The \$7.9 million project was completed in June 2010.
- Packaging, transport, and disposal of more than 1,300 tons of uranium material from the Uranium Management



A worker removes bolts from shear blades used in decontamination and decommissioning work.

Center. The \$18.9 million project was completed in July 2011.

- Remediation of the X-701B Groundwater Contamination Plume. Workers blended contaminated soils with an oxidant to significantly reduce high concentrations of trichloroethene (TCE), which had been used as an industrial solvent at the site to degrease equipment. The \$28.5 million project was completed in August 2010.

The additional cleanup following completion of the original Recovery Act scope included:

- Removal of slab and soils at the X-760 chemical engineering building;
- Treatment of a 28,000-square-foot portion of the X-701B groundwater plume; and
- Disposition of about 1,100 contaminated items. □



Top & bottom photos: After using explosives to demolish the 284-W Power House's exhaust stacks, bag houses and water tower in February 2011, workers finished demolition of the main building in September.



Hanford Site Looks Back...

Continued from page 6

in August 2011. It included construction of two large disposal areas called super cells that increased the facility's capacity by 50 percent to 16.4 million tons. The facility, which now covers the same areas as 52 football fields, currently contains more than 12 million tons of waste.

Upgrades to ERDF also included the construction of three new maintenance facilities and an operations center, improved traffic routes and the addition of several pieces of equipment. The project was completed ahead of schedule and \$16.4 million under budget.

"The expansions and upgrades to this facility will help us achieve our 2015 vision of completing nearly all of the cleanup work along the Columbia River," said DOE Richland Operations Office Manager Matt McCormick. "The upgrades provide enough room for millions more tons of debris from cleanup, and they improve the safety and efficiency of handling all of the material as it is placed here for disposal."

Reducing Cleanup Footprint

CH2M HILL remediated a total of 89 waste sites across Hanford and removed more than 1,000 debris sites from the Hanford Reach National Monument, which helped the site exceed cleanup footprint reduction goals.

Washington Closure used Recovery Act funds to perform clean-up activities at two of Hanford's most complex and hazardous burial grounds. The 618-10 and 618-11 burial grounds contain low- and high-activity radioactive waste from Hanford's laboratories and fuel development facilities.

The 618-10 Burial Ground operated from 1954 to 1963. Low-activity wastes were primarily disposed in

12 trenches, while moderate- and high-activity wastes were disposed in 94 vertical pipe units (VPUs). The VPUs were constructed by welding five bottomless drums together and buried vertically about 10 feet apart.

Washington Closure completed noninvasive characterization of the 618-10 Burial Ground in 2010 and in the spring of 2011 began excavating the burial ground's waste trenches. The project team expects to find up to 2,000 drums containing everything from mildly contaminated clothing and debris to highly radioactive laboratory equipment and

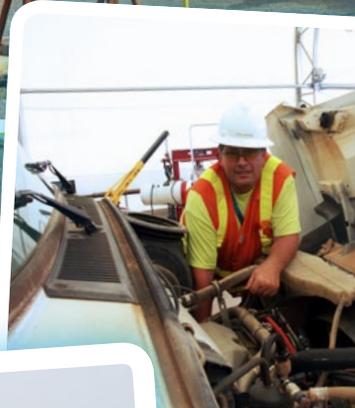
liquids. So far, more than 70 drums have been found. About 30 of the drums are concrete-lined and were typically used to dispose of radioactive liquids. Many other drums contained radioactively contaminated shavings and oil and miscellaneous debris.

In June, noninvasive characterization was completed at the 618-11 Burial Ground. The purpose of noninvasive characterization is to determine the burial ground's contents without opening or exposing them to workers or the surface environment. The data collected will help plan remediation strategies.

Remediating 100-F Area Waste Sites

In 2008, Washington Closure completed cleanup of 53 waste sites at F Area, which operated from 1945 to 1965 as one of Hanford's nine surplus plutonium production reactors for the nation's nuclear weapons program. The reactor was cocooned in 2003. During reactor construction and operations, waste was disposed in unlined pits and trenches throughout the site. During the course of cleanup, 19 additional waste sites were discovered. Recovery Act funding was used to remediate the remaining sites. □





U.S. DEPARTMENT OF ENERGY

OFFICE OF ENVIRONMENTAL MANAGEMENT

