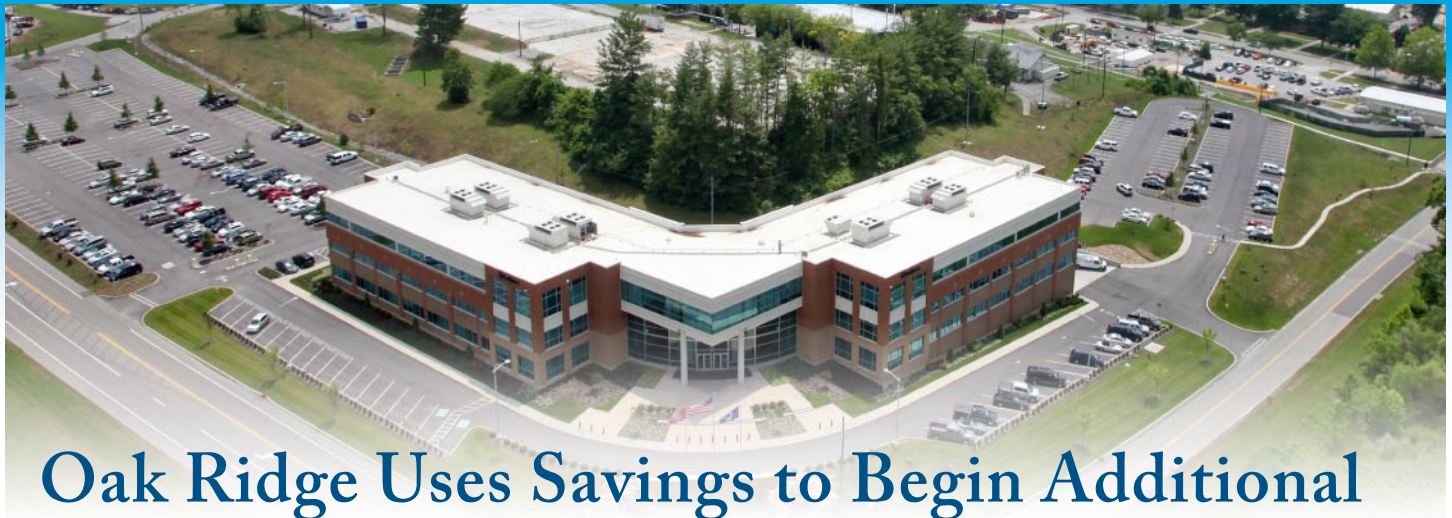




# EM RECOVERY NEWS

American Recovery & Reinvestment Act Newsletter

August 2011 | Issue 27



## Oak Ridge Uses Savings to Begin Additional Recovery Act Projects

**OAK RIDGE, Tenn.** – In 2009, the American Recovery and Reinvestment Act invested \$755 million into 24 environmental cleanup projects across the 34,000-acre Oak Ridge Reservation.

As the Oak Ridge Environmental Management (EM) program's Recovery Act work progressed, projects performed under original cost estimates, resulting in savings of more than \$90 million.

Those savings are now being used to fund 12 additional projects at Oak Ridge's three major sites— the Oak Ridge National Laboratory (ORNL), Y-12 National Security Complex (Y-12), and East Tennessee Technology Park (ETTP). Most of the projects are scheduled for completion in 2012, with the remaining projects on track to finish in 2013.

"We continue to encourage creativity and thoughtful, deliberate management in all of our projects," Oak Ridge's Acting Deputy Manager and EM Assistant Manager John Eschenberg said. "The results speak for themselves. We are maximizing the investment by the American taxpayer by using savings from the projects to fund additional, much-needed cleanup that will benefit our site and the community."

**“ The results speak for themselves. We are maximizing the investment by the American taxpayer by using savings from the projects to fund additional, much-needed cleanup that will benefit our site and the community. ”**

*Oak Ridge's Acting Deputy Manager and EM Assistant Manager John Eschenberg*

### Recovery Act Invests in Important Cleanup of Contaminated Soil

Soil contamination remains one of the most pressing issues facing Oak Ridge's EM program, and a large portion of the savings are being directed to address this concern. Work is under way to remediate seven acres of land at Y-12's former Scrap Yard, and 19 acres of land at ORNL's former 2000 Complex, making valuable land and real estate avail-

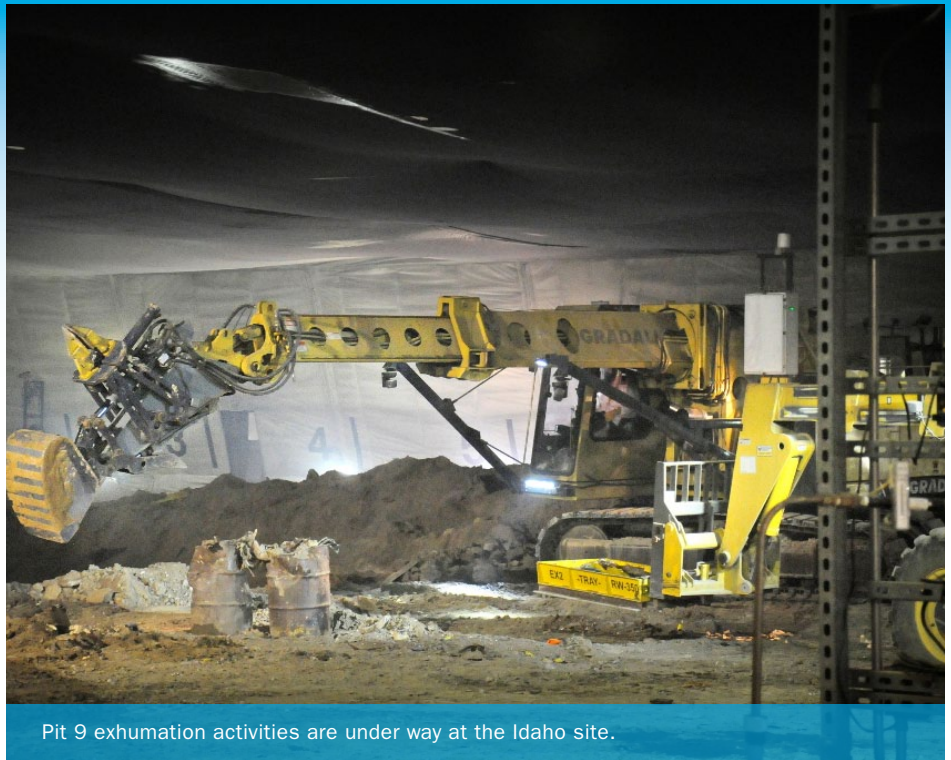
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Cover photo: The Science and Technology Park will have room for expansion once the 2000 Complex's slabs are removed and the 19-acre area is remediated.

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Pit 9 exhumation activities are under way at the Idaho site.

## Newsletter Draws Attention to Additional Work Made Possible by Savings, Efficiencies

The DOE Office of Environmental Management (EM) received \$6 billion from the American Recovery and Reinvestment Act in 2009 to expedite the cleanup of the Cold War legacy. The Recovery Act funding went toward shovel-ready projects such as facility decontamination and decommissioning, soil and groundwater remediation, and radioactive solid waste disposition. The investment has brought many accomplishments. Recent data show Recovery Act workers completed demolition or cleanup of 199 facilities across the DOE complex and permanently disposed more than 1.8 million cubic meters of demolition debris and soil. The workers installed more than 500 remediation and monitoring wells, and disposed more than 91,000 cubic meters of low-level and mixed low-level waste. Recovery Act funding also is accelerating EM's footprint reduction goals. Through July 2011, EM had reduced its total footprint by 53 percent, or 489 of 931 square miles. As Recovery Act projects progress, efficient work processes and unrealized risks have resulted in cost savings and have allowed for additional cleanup work to take place outside initial Recovery Act work scopes — helping EM get more value out of Recovery Act dollars. These additional projects are the focus of this August issue of EM Recovery News. For example, at the Nevada National Security Site, efficiencies in scheduling and planning allowed the DOE National Nuclear Security Administration (NNSA) Nevada Site Office to move beyond the cleanup process to the closure stage at the Buggy site. Buggy and other tests were conducted as part of the Plowshare Project, in which the U.S. government studied peaceful uses for nuclear weapons. Read about the work being done at the Buggy site and many other Recovery Act sites in this 27th issue of EM Recovery News.





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Washington Closure Hanford disposed 58,500 railroad ties from the Hanford Site at the Environmental Restoration Disposal Facility. The railroad ties were disposed in super cell 9, which was constructed using Recovery Act funds.







## Oak Ridge Uses Savings...

Continued from page 1

able to expand the Science and Technology Park. At ETRP, workers will remove the concrete slab and soil that remains after the 1.4 million square foot K-33 superstructure was demolished with earlier Recovery Act funding.

Removing contaminated infrastructure is also a major focus for the EM program. Demolishing these facilities improves safety for the thousands of employees who perform missions in science and national security at Oak Ridge, and allows for modernization and growth at the site. Building 3038 in ORNL's central campus is one of the facilities that will be torn down. Built in 1951, it was used for packaging, inspecting, and shipping radioisotopes. Recovery Act funds will also be used to remove a major ventilation stack at ORNL, which will reduce the risk of airborne pollutant releases.

## Recovery Act Supports Pre-Demolition Characterizations

A portion of the Recovery Act savings will also pay for characterization work needed before facilities can be demol-

ished. Characterization involves identifying chemical and radiological substances and their levels of concentration. With information obtained during characterization, EM can establish a safe path forward for removal and waste disposal.

Major characterization work will take place at the Poplar Creek Facilities at ETRP, Isotope Row at ORNL, and Beta 3 at Y-12. The Poplar Creek Facilities supported ETRP's five uranium enrichment buildings. Isotope Circle is comprised of 10 facilities that previously served as radioisotope production laboratories. Workers will conduct a characterization of Beta 3 and remove legacy material. The building — constructed during the Manhattan Project — was one of the primary uranium separation facilities for the world's first atomic weapon. Later, the facility was used in the isotope program for separating a large portion of the elements in the periodic table. □



Top photo: Oak Ridge National Laboratory's central campus has been a priority for Recovery Act-funded cleanup.

Right photo 1: Once debris is removed, workers at K-33 will begin removing the building's slab and any contaminated soils.

Right photo 2: Using savings from other Recovery Act projects, the EM program is remediating the seven-acre area once used for Y-12's Scrap Yard.

Right photo 3: Recovery Act workers will conduct characterization work and remove legacy materials at the Beta 3 facility at the Y-12 National Security Complex.





# Workers Clean Up C Area as Added Value from Recovery Act P and R Reactor Projects

**AIKEN, S.C.** – Prudent use of Recovery Act funds and efficient planning and project execution will allow the Savannah River Site (SRS) to remediate the 16.6 square mile C Area 11 years ahead of schedule.

The \$46 million project at C Area, home to one of six former nuclear reactors at the site, is on track for completion in fall 2012. Cleanup of C Area supports the goal of reducing the site's 310 square mile footprint by 75 percent by September 2012.

## C Area Projects Mean Work for About 250 People

C Area cleanup has provided work for about 250 employees from SRS, equipment supply companies, and small business contractors. For example, GEM Technologies, Inc. — a minority-owned, small disadvantaged firm that provides engineering, construction, demolition, and technical services — remediated contaminated railroad tracks in the C Area. And Boart Longyear, which has an office nearby SRS in New Ellenton, S.C., is installing permanent groundwater monitoring wells.

“The C Area remediation project is a clear example of progress that can be achieved through the individual contributions of Recovery Act workers,” said Dr. David Moody, site manager at DOE-Savannah River. “The Recovery Act invested \$1.6 billion to advance cleanup projects at SRS and put people to work. That has clearly been achieved here at a great value to the community and American taxpayers.”

## Carefully Balancing Cleanup with Historic Preservation

South Carolina's State Historic Preservation Office declared a 20-acre portion of C Area historically significant to the Cold War, which meant the SRS cleanup operation needed to be effectively balanced with historical preservation efforts.

“We are taking care to mitigate the impact to historical facilities in the area,” said Chris Bergren, project manager for Area Completion Project at Savannah River Nuclear Solutions (SRNS), the SRS management and operations contractor. “The Recovery Act has enabled us to remediate this area ahead of schedule at a much lower cost than in 2023, when the project was originally scheduled for completion.”

## Workers Clean Up Railroad Tracks, Sewer Lines, Water-Collection Basin

The C Area project involves characterization and remediation of eight waste units — areas that contain or previously contained hazardous waste — and the groundwater beneath them. Two areas that required remediation are the C Area Process Sewer Lines and C Area Reactor Cask Car Railroad Tracks.

The railroad tracks were once used to transport materials from the C Reactor to other SRS facilities during reactor operations. Recovery Act workers excavated an area of contaminated soil along the rail bed and disposed of it at an off-site facility. They also installed new rail bed gravel, railroad ties, and tracks to retain the appearance of historical operations.



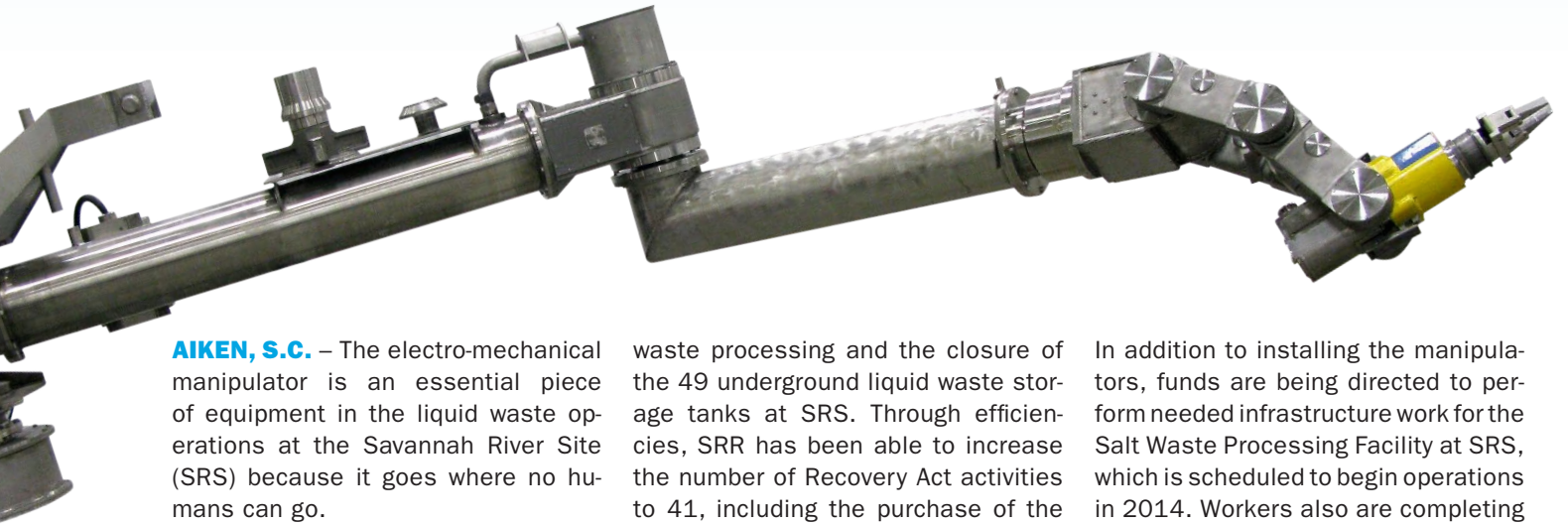
In the sewer lines project, workers will fill access areas to structures, man-holes, and sewer lines with concrete and install concrete covers on major structures to contain potential contamination. This work is scheduled for completion in early spring 2012.

Workers will remove 3.4 million gallons of contaminated water and sludge from a C Area water-collection basin. During remediation, the basin's contents will be pumped to evaporators outside the reactor building so the structure remains intact. Once the water and sludge are removed, the basin will be filled with grout, a cement-like mixture. The basin project is scheduled for completion in spring 2012. □

Top photo: Workers take samples as part of characterization and remediation work at the C Area Reactor Cask Car Railroad Tracks.

Bottom photo: The Savannah River Site is using Recovery Act funds to remediate C Area, home to one of six former nuclear reactors at the site.

# Recovery Act Activities Expand Through Efficiencies at Savannah River Site



**AIKEN, S.C.** – The electro-mechanical manipulator is an essential piece of equipment in the liquid waste operations at the Savannah River Site (SRS) because it goes where no humans can go.

Equipped with electric motors in its arm-like extension, the manipulator is used inside the highly radioactive processing area at the Defense Waste Processing Facility (DWPF). There, hazardous waste is mixed with a molten glass and poured into stainless steel containers forming a solid glass-like product suitable for permanent storage. An operator controls the manipulator, performing operations and maintenance activities in safe confines outside the processing area, looking through a shielded glass window.

The manipulator is so essential that Savannah River Remediation (SRR), the SRS liquid waste contractor, purchased two of them using Recovery Act funds as part of work to upgrade equipment at DWPF.

Two years ago, the Recovery Act invested \$200 million into 33 activities undertaken by SRR to accelerate

waste processing and the closure of the 49 underground liquid waste storage tanks at SRS. Through efficiencies, SRR has been able to increase the number of Recovery Act activities to 41, including the purchase of the manipulators.

Expanding Recovery Act work without increasing funding is a testament to the workforce, according to SRR Recovery Act Program Manager Mark Schmitz.

“During our peak construction activities in 2010, we had a workforce of 600 employees who were glad to have a job and were willing to work,” Schmitz said. “Our workers have utilized proven technology and creativity to solve complex problems.”

All Recovery Act activities were developed to accelerate tank closure by replacing aging infrastructure and improving waste treatment processes. Recovery Act work includes the installation of advanced bubbler technology in the waste vitrification process and the deployment of robots to assist in waste tank cleaning and sampling during the closure process.

In addition to installing the manipulators, funds are being directed to perform needed infrastructure work for the Salt Waste Processing Facility at SRS, which is scheduled to begin operations in 2014. Workers also are completing design and construction activities for chemical cleaning infrastructure in SRS’s two tank farms that will reduce the use of tank space and accelerate tank closure by improving techniques for residual waste removal. □

*Photo above: One of two electro-mechanical manipulators purchased with Recovery Act funds.*





# Nevada Cleanup Sites Get More Bang for Their Recovery Act Buck

**LAS VEGAS** – Closure work on the historic Buggy site is under way at the Nevada National Security Site (NNSS). The Buggy experiment, conducted in the spring of 1968, was a series of five nuclear detonations used to produce a large trench. Buggy, along with several other tests, was part of the Plowshare Project in which the U.S. government studied peaceful uses for nuclear weapons.

The DOE National Nuclear Security Administration Nevada Site Office (NSO) had directed a portion of its original \$44 million in Recovery Act funds for cleanup activities at Buggy and other historically-contaminated atmospheric test locations at the NNSS, including the removal of hazardous debris. Savings from efficient scheduling and planning under the Recovery Act are allowing NSO to move beyond the cleanup process to the closure stage. Closure work at Buggy, and at several other contaminated sites, is scheduled to be completed by the end of September 2011.

The Buggy closure stage involves formalizing use restrictions and long-term institutional controls at the site. Use restrictions limit activities that can occur at a site, such as soil disturbance. Insti-

tutional controls may require administrative documentation, such as a record of maintenance, or physical requirements, such as signs and fences and other barriers that need to be maintained.



Projects at Buggy and other sites are not the only activities gaining traction on the NNSS cleanup front. Approximately \$4.7 million from the Recovery Act gained through efficiencies is being used at Buggy and other sites, as well as to:

- Finish additional groundwater modeling at Pahute Mesa, a northwestern region of NNSS;
- Remove contaminated soil at industrial sites on the Tonopah Test Range north of the NNSS;
- Conclude the Closure Report for contaminated railroad tracks in two areas of NNSS; and
- Complete radiological surveys in another area of NNSS. □

Photo middle: Efficiencies in Recovery Act work allowed workers to move beyond the cleanup process at the Buggy Site, pictured here, to the closure stage.

Photo bottom: An approximate \$4.7 million in Recovery Act funds gained through efficiencies is being used for activities such as completion of the Closure Report for contaminated railroad tracks in Area 25 and 26 at the Nevada National Security Site.

- Complete surveys and drill pad construction for two groundwater characterization wells in Frenchman Flat, a dry lakebed where atmospheric nuclear tests were once conducted;







# Hanford Completes Recovery Act Project Under Budget, Ahead of Schedule

**RICHLAND, Wash.** – Meticulous planning and effective project management allowed for a Recovery Act expansion

project at a Hanford Site disposal facility to be completed months ahead of schedule and well under budget.

Earlier this summer, DOE contractor Washington Closure Hanford and its sub-contractors used Recovery Act funds to complete a \$100 million expansion and upgrade of the Environmental Restoration Disposal Facility (ERDF). The expansion project included the construction of two large disposal areas that increased the facility's capacity by 50 percent to 16.4 million tons of waste. Equipment

[Continued on next page](#)







was purchased and other upgrades were added as part of the project.

“The expansion will allow us to safely and efficiently handle increased waste volumes generated by Recovery Act activities,” Washington Closure Waste Operations Director Bruce Covert said.

Funds remaining from that project are now supporting daily disposal operations at ERDF. To date, \$15 million has been approved to support work at the fa-

cility for low-level radioactive and mixed waste until the end of the calendar year.

The Recovery Act money for the daily disposal operations will help the team from Washington Closure’s Waste Operations continue to safely dispose of waste. The funding has supported more than 370 jobs for Washington Closure workers and subcontractors at ERDF.

In recent months, ERDF has safely disposed of several large, hazardous items, including 11 Hanford Site railcars, nine of which contained lead-lined casks used to transport irradiated fuel during the Manhattan Project and Cold War eras. The railcars are referred to as “well cars” because they also held water for cooling and shielding. The remaining two railcars were tankers. Previously, 58,500 railroad ties from the Hanford Site were safely disposed.

The Waste Operations team also disposed of several motors, pumps and piping from water intake structures at the N, K East and K West reactors. The water intake structures were used to

pump Columbia River water through the reactors for cooling.

In addition, Recovery Act dollars were also used to dispose of pieces of the Plutonium Recycle Test Reactor at Hanford. The test reactor, referred to as the 309 Building, operated from 1960 to 1969 to support the development of alternative fuels for the commercial nuclear power industry.

ERDF is regulated by the U.S. Environmental Protection Agency. The facility began operation in 1996 to accept contaminated soil and debris generated during Hanford cleanup. □

*Photo left: Washington Closure Hanford disposed 11 railcars from the Hanford Site at the Environmental Restoration Disposal Facility. The railcars were used to transport irradiated fuel from the reactors to the chemical separation plants, where workers extracted plutonium.*

*Photo inset: Washington Closure Hanford disposed 11 railcars from the Hanford Site at the Environmental Restoration Disposal Facility. Two of the railcars were tankers, pictured here.*





# Recovery Act Workers Expedite Cleanup at Paducah Site

**PADUCAH, Ky.** – A significant part of the C-410 Feed Plant complex at the Paducah Site has been demolished thanks to ongoing Recovery Act work.

Demolition of the eastern third of the building, covering about half an acre, was completed in late June 2011 — exactly three months ahead of schedule. Recovery Act workers continue to clean up the rest of the structure to prepare it for demolition. Crews have removed more than 20,000 cubic feet of waste — 85 percent of the projected total — and shipped the material to an approved disposal facility.

“That is a significant accomplishment and a credit to the training, expertise, and dedi-

budget; those savings were applied to speed work in the Feed Plant.

Once a nine-facility complex spanning nearly 200,000 square feet, the Feed

“I am thankful for and proud of the work crews, support personnel, and management team,” Auble said. “Together they overcame numerous technical and financial challenges to successfully complete this project.”

The Feed Plant and Smelter are two of the projects at Paducah funded by about \$80 million from the Recovery Act.



Plant operated from 1957 to 1977 to produce uranium hexafluoride ( $UF_6$ ) and fluorine.

Despite the difficult working conditions, Feed Plant workers have logged more than 57,000 hours without a recordable injury since May 1 of this year.

cation of the crews involved,” said Rob Seifert, the Department’s Paducah Site Recovery Act Project Director.

Accelerated Feed Plant cleanup is the result of cost savings from the Recovery Act-funded September 2010 demolition of the C-746-A East End Smelter. The Smelter was demolished a year ahead of schedule and \$12 million under

The team’s “can-do spirit” proves the site can be cleaned up safely and economically, said Mike Auble, Decontamination & Decommissioning Projects Manager for LATA Kentucky, the Department’s cleanup contractor. He called the recent demolition a significant turning point for the site.

A third project, preparing the C-340 Metals Plant for demolition, was completed in early August. The Metals Plant spanned roughly 65,000 square feet and operated several decades ago to convert depleted uranium hexafluoride ( $DUF_6$ ) into uranium metal and uranium tetrafluoride ( $UF_4$ ). □

Photo top: Heavy equipment demolishes the last part of the eastern third of the Feed Plant at the Paducah Site. Cleanup continues to prepare the remaining part of the complex, pictured in the background, for demolition later.

Photo left: A spotter, left, helps a forklift driver safely drop debris into a roll-off bin in the Feed Plant.





Rail shipments maximize efficiency: The WVDP is getting the most out of its Recovery Act funding by shipping containers of waste cross-country, mostly by rail. The shipments begin at the WVDP on trucks, but later move to flat-bed railcars where they are stacked.

## Recovery Act Funds Disposal of West Valley Radioactive Waste

**WEST VALLEY, N.Y.** – The West Valley Demonstration Project (WVDP) is using a portion of its nearly \$63 million in Recovery Act funds to dispose of some of the site's low-level radioactive waste ahead of schedule.

In May, the WVDP began shipping low-level radioactive waste using remaining Recovery Act funding. This is in addition to 4,326 cubic feet of waste shipped under the Recovery Act in 2010. Completing the shipments helps the site get rid of low-level radioactive soil that was excavated during recent construction projects — some of which were funded by the Recovery Act — along with some other general debris. The shipments are planned through the end of August, resulting in approximately 34,000 cubic feet of low-level waste being shipped and disposed of during this four-month period.

Soil debris made up most of the waste that left the site on trucks bound for Wampum, Pa., about 200 miles south of the WVDP during May and June. In Pennsylvania, workers transferred the waste to railcars to continue the 1,900 mile journey from the WVDP to the

EnergySolutions disposal facility in Clive, Utah.

With a focus on maximizing efficiency and cost savings, the WVDP prioritized waste shipments that were disposal-ready, stored outside, and otherwise not in the waste shipping schedule. Due to the weight limitations during truck shipping, only one waste container can be transported on each truck. However, six to eight of the containers can be loaded on a single rail car. Through the use of a transloading facility, the WVDP was able to maximize the amount of waste it could transport using Recovery Act funding by trucking the containers to the nearest transloading facility for transfer to railcars.

"We are taking advantage of Recovery Act funding to accelerate the completion of the West Valley Demonstration Project and deliver for the American taxpayers," said Bryan Bower, DOE WVDP Project Director. "Through this waste shipping campaign, we have been able to take cost savings from other Recovery Act projects and reinvest these savings in additional work at the site." □

## Aaron Cherney - WA



Radiological Control Technician  
CH2M HILL Plateau Remediation Company

**RICHLAND, Wash.** – Aaron Cherney's employment at the Hanford Site helped him fulfill his lifelong dream of opening a video game business in Richland.

Hired under the Recovery Act as a radiological control technician, Cherney has been able to parlay his earnings to launch a small business that his wife now manages.

"Everyone's been blown away with the store and merchandise," Cherney said. "And business has been very good so far."

Cherney and his wife, Sarah, opened Sunken Treasures Games earlier this year. The store is located in the Uptown shopping center.

"My dream of owning my own video store was always there," he said.

The Cherneys are avid, skilled video game players and subject-matter experts when it comes to gaming trends and what's hot in the marketplace.

"My favorite game is Half-Life," Cherney said. The game is about working at a test lab in the desert.

"Must have been fate," he joked.

The Recovery Act not only helped Cherney in the virtual world, but also impacted many of his friends — co-workers at Hanford — in the real world.

"Looking around at all of the lives the Recovery Act affected, I can see how those guys' lives have been drastically changed for the better. It's been really positive, especially my situation. I'm thrilled to have our own store and live our dream," he said.

# Recovery Act Investment Increases Efficiency of Transuranic Waste Disposal

**CARLSBAD, N.M.** – The Recovery Act is helping to advance transuranic waste disposal operations at the Waste Isolation Pilot Plant (WIPP) with the recent investment of about \$400,000 in new equipment.

Transuranic waste consists of materials contaminated with radioactive elements that have atomic numbers greater than uranium, including tools, rags, protective clothing, sludge and soil. The waste is permanently disposed safely in rooms mined out of an ancient salt formation more than 2,100 feet below the surface.

The remote-handled equipment, called the alignment fixture assembly shield

**“This piece of equipment is a very valuable addition to the remote-handled disposal process. It will allow us to accommodate maintenance activities on emplacement equipment, if the need arises, during waste disposal.”**

*Carlsbad Field Office Recovery Act Federal Project Director Casey Gadbury*

valve, provides a temporary cover for the boreholes where transuranic waste canisters are placed in WIPP's underground disposal areas. The shield valve keeps the borehole covered while workers perform maintenance on other emplacement equipment used in the waste disposal process. After maintenance is complete, the workers insert a permanent cover, known as a concrete shield plug. Emplacement means placing the waste into its final disposal location in the underground.

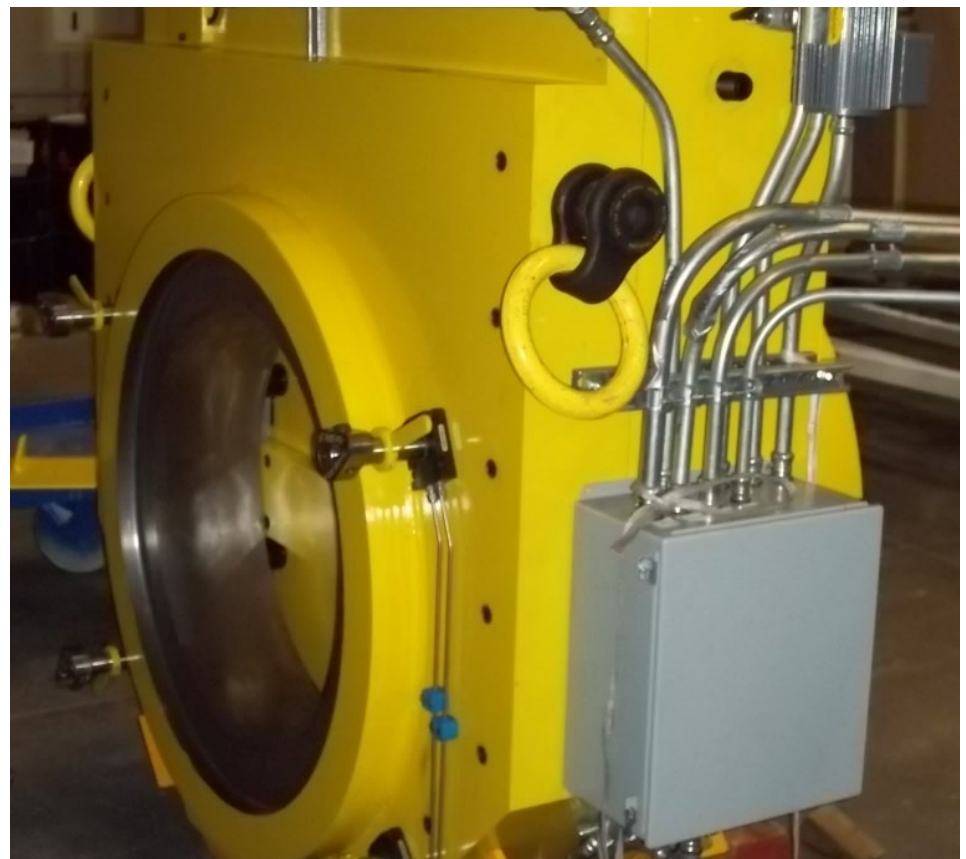
The shield valve was designed to give workers at WIPP more flexibility during remote-handled transuranic waste emplacement activities, allowing them to accommodate unexpected maintenance.

“This piece of equipment is a very valuable addition to the remote-handled disposal process. It will allow us to accommodate maintenance activities on emplacement equipment, if the need arises, during waste disposal,” Carls-

bad Field Office Recovery Act Federal Project Director Casey Gadbury said.

Remote-handled transuranic waste arrives at WIPP in canisters inside specially designed shipping packages. Workers remove the canisters from the packages and place them in a large, shielded facility cask, which is transported to the underground disposal area. There, the cask is transferred to an emplacement machine, which moves the canister into the borehole.

As of July 2011, more than 250 cubic meters of remote-handled transuranic waste and more than 76,000 cubic meters of contact-handled waste was disposed at WIPP. While remote-handled waste is a small percentage of the total waste disposed at WIPP, its disposal is essential to the cleanup of Cold War legacy waste. Remote-handled waste has a higher dose rate than contact-handled waste. □



The alignment fixture assembly shield valve was designed to give workers at the Waste Isolation Pilot Plant more flexibility during remote-handled transuranic waste emplacement activities, allowing them to accommodate unexpected maintenance.





## Piketon Recovery Act Update: Uranium Materials Disposal Continues

**PIKETON, Ohio** – The Piketon Site received nearly \$120 million from the Recovery Act to accelerate legacy cleanup.

That funding allowed Recovery Act workers to demolish Cold War facilities, such as a chemical engineering building, electrical switchyard, and cooling towers at the former Portsmouth Gaseous Diffusion Plant. The workers reduced Piketon's inventory of excess uranium materials at the Uranium Management Center (UMC) by more than 40 percent by safely dispositioning the materials. They also reduced TCE (trichloroethene) levels in a groundwater plume source area by more than 95 percent.

Productive, efficient work in those Recovery Act projects led to a cost savings of \$8 million that is now being used to fund additional cleanup: the disposal of more excess uranium materials in storage. These items are located inside or near five facilities at the UMC associated with the former uranium enrichment process.

The cleanup is helping Piketon further reduce its inventory of excess uranium materials. So far, Recovery Act workers have dispositioned more than 2,535 items under the project fund-



ed by cost savings. The uranium materials are then sent to an offsite facility where they are disposed as low-level waste.

Removing the materials from the facilities at the UMC helps prepare the buildings for eventual decontamination and decommissioning. □

[These photos show a storage area before and after workers removed excess uranium materials.](#)

## Safe and Efficient Recovery Act Work Leads to More Accomplishments in Idaho

**IDAHO FALLS, Idaho** – Sound management practices and safe, efficient work have led to significant cost savings and rapid progress in Recovery Act projects that are expediting the cleanup of Cold War waste at the Idaho site.

Efficiencies have enabled CH2M-WG Idaho (CWI), the Idaho site's main cleanup contractor, to save \$12 million, which is being reinvested into additional activities.

One of those projects is the exhumation of targeted buried waste from Pit 9. The project is on track for completion this year, months ahead of schedule. The work is part of CWI's broader work scope to accelerate the removal of legacy waste at the Subsurface Disposal Area (SDA), a cleanup project that protects the Snake River Plain Aquifer.

Workers are digging up plutonium- and uranium-contaminated filters, plutonium-contaminated sludge, organic solvent sludge and oxidized, or depleted, uranium. The waste, which will be shipped outside Idaho for permanent disposal, was generated during nuclear weapons production at the Rocky Flats Plant near Denver and buried in Pit 9 from 1967 to 1969. EM cleaned up and closed Rocky Flats several years ago.

In 2004, waste was removed from Pit 9 as part of the Glovebox Excavator Method demonstration project. During that demonstration, crews were able to visually identify the exhumed waste and target specific waste forms that may threaten the underlying Snake River Plain Aquifer. That targeted waste retrieval approach became the basis for a 2008 Record of Decision – signed by DOE, the U.S. Environmental Protection Agency and Idaho Department of Environmental Quality – to ship 7,485 cubic meters of targeted waste for offsite disposal from a combined area of 5.69 acres within the SDA. □



With the help of Recovery Act funding, the Office of River Protection is developing the Wiped Film Evaporator, a new technology offering a portable option for at-tank volume reduction of waste.

## Technology to Provide Portable Option for At-Tank Volume Reduction of Hanford Waste

**RICHLAND, Wash.** – Recovery Act-funded development of new technology to reduce the volume of waste stored in Hanford’s underground tank farms is nearing completion.

Engineers continue to make excellent progress in developing the portable Wiped Film Evaporator (WFE). Simulant testing of the full-scale WFE is now complete and operators say they were able to gather helpful technical operating data.

“It feels really good to be able to work on a project that you see from paper to actual hardware and this Recovery Act project has been a great example of

that,” said Project Manager Rick Tedeschi. “This is a result of a lot of team effort in design, pilot-scale testing, and offsite subcontractor manufacturing to come down to a full-scale unit that we will be able to put to use in the tank farms.”

As part of the Office of River Protection’s (ORP) long-term mission at the Hanford tank farms, crews are working to empty older, leak-prone single shell tanks and transfer the waste into newer, safer double-shell tanks for storage. Because the single-shell tanks outnumber the double-shell tanks by five to one, storage space is limited and precious. The WFE is expected to help relieve congestion by providing a mobile, tank-side system to reduce the volume of waste by removing excess water from the waste.

Here’s the technology behind the WFE: a deep vacuum reduces the boiling point of liquid waste. Then, a spinning rotor distributes a thin film of waste on the inside wall of a heated cylindrical vessel and water is evaporated off. It’s expected that the WFE will be ready for use inside the tank farms in 2015.

“This project shows that development is more than just the very small sliver of design that you kind of try to fit in to the process,” Tedeschi said.

The WFE technology is expected to supplement Hanford’s 242-A Evaporator by consolidating the liquid waste at the tank. Its development is crucial in order to mitigate the risk of a 242-A Evaporator failure and is key to long-term tank farm success.

The full-scale unit will undergo further evaluation over the next two months as ORP completes its remaining Recovery Act-funded projects at the tank farms. □



# Recovery Act Savings Lead to More Projects for Workers at Argonne Lab

**ARGONNE, III.** – Argonne National Laboratory received \$79 million in Recovery Act funds to remove radioactive waste and decontaminate and demolish two facilities.

As those projects near completion under the original cost estimates, Argonne has identified additional small projects that can be supported using remaining Recovery Act funds.

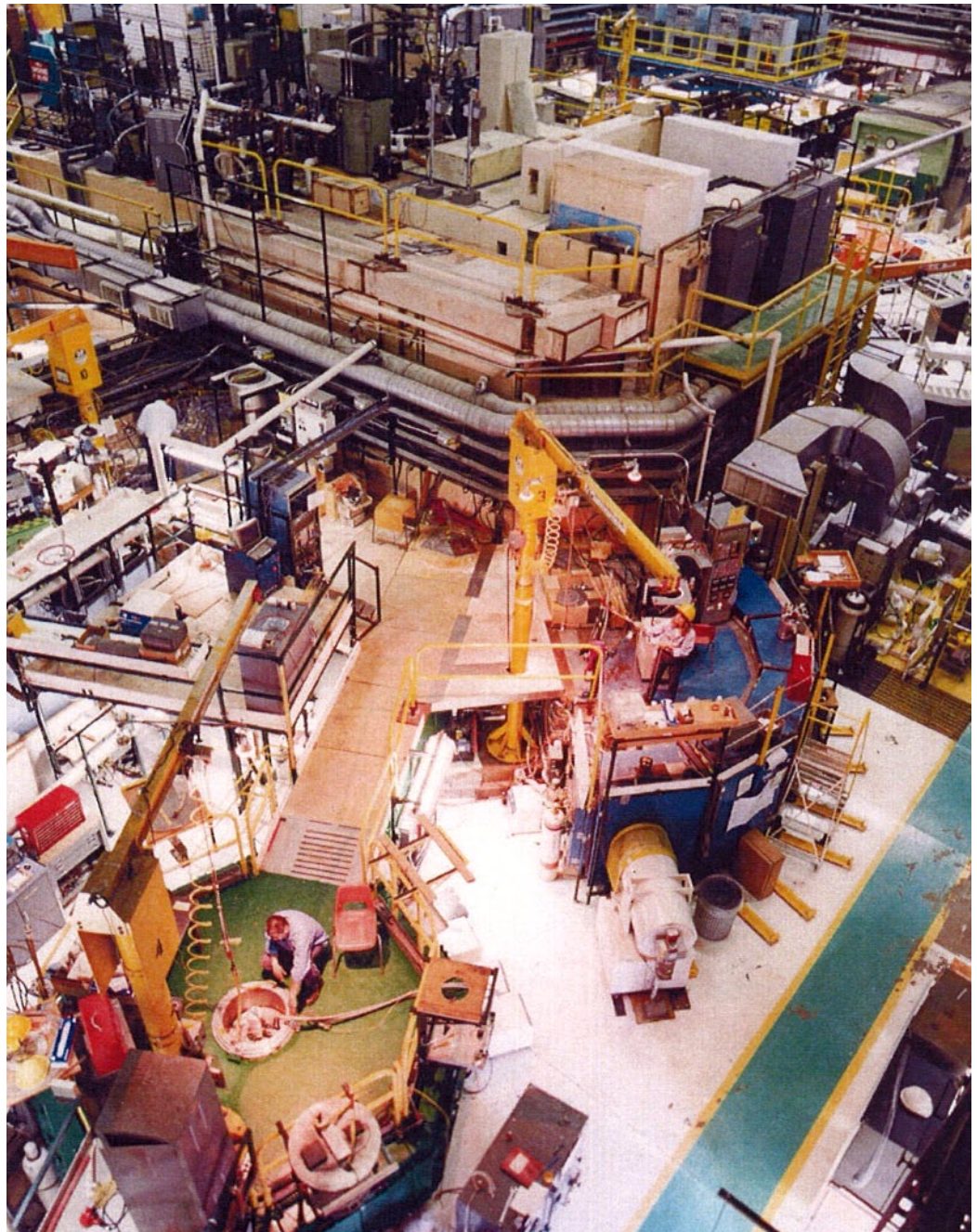
The first of these projects is the characterization of the Intense Pulsed Neutron Source (IPNS), a precursor to decommissioning the facility. The IPNS characterization project will provide jobs for approximately 35 people for the six-month period that includes training and field work.

Characterization activities and data collection include taking engineering measurements to obtain needed structural and system design data; radiological measurements and samples; and hazardous material samples. Knowledge of the radiological and hazardous material conditions of the buildings will provide the necessary information to plan for decommissioning and to adequately address worker safety and environmental protection.

IPNS was a DOE national user facility utilized by hundreds of researchers from around the world. The facility provided a highly reliable source of neutrons for the study of atomic arrangements and motions in liquids and solids. The facility ceased operation in December 2007, and equipment, furniture, and waste were subsequently removed.

Field work for the characterization is set to begin this October. A report on the findings of the characterization is scheduled for delivery to DOE in May 2012.

DOE also has approved Recovery Act funding for the development of a detailed cost estimate to support decontamination and demolition of the facility in the future. □



A view of former Intense Pulsed Neutron Source Target Building operations at Argonne National Laboratory.

FOR MORE INFORMATION ON  
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