



2012 Annual Review



UCOR
URS | CH2M
Oak Ridge LLC

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Message from the President

Our first year as the Department of Energy's (DOE) cleanup contractor for the Oak Ridge Reservation has been filled with many challenges but even more successes. At East Tennessee Technology Park (ETTP), most of the K-25 Building's east wing has been demolished. We've begun demolition on the north end, the only portion left standing other than a small section of the east wing that requires further deactivation.

We've also accelerated work on the K-27 Building, coordinating with DOE to identify cost savings that would allow us to move that project forward.

We completed remediation of the K-1070-B burial ground, located adjacent to the K-25 Building. This landfill was used in past years to dispose of items such as equipment, materials, parts, and drums. This once-contaminated site is now a grassy field.

At Oak Ridge National Laboratory, we completed removal of Tank W-1A, a contaminated underground storage tank that was the main source of groundwater contamination at the site. Completion of this project has made the site safer for the workforce and the environment.

UCOR has also been safely managing the Environmental Management Waste Management Facility, DOE's disposal facility located near the Y-12 complex. A total of 185,000 tons of waste were disposed at the facility during FY 2012.

We are completing projects ahead of schedule and under budget, allowing us to do additional work. We understand the need to be good stewards of the taxpayer funding we receive to clean up the DOE Oak Ridge Reservation, so we are constantly looking for ways to do work more economically and efficiently while maintaining one of the best safety records in the DOE Complex. In FY 2012, we identified more than \$27 million in costs savings.

Our number one goal has been, and will continue to be, working safely. We will not put our employees in unsafe circumstances, and we have been successful in instilling an exemplary safety culture in our workforce. We worked all of FY 2012 and logged more than 3 million hours without sustaining a lost workday injury.

It's very exciting to see the changes that are taking place at ETTP and other sites. We will continue working to ensure that the funding entrusted to us is spent wisely as we assist DOE in reaching its ultimate goal of transforming ETTP into a private sector business/industrial park.



A handwritten signature in dark ink, reading "Leo H. Sain". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Leo H. Sain
President and Project Manager

UCOR continues safe performance

UCOR worked all of FY 2012 without having a lost workday away injury. In fact, UCOR and subcontractor employees have worked more than 3 million hours without a lost workday away case.

UCOR's Environment, Safety, and Health staff successfully conducted a full participation emergency management exercise for ETTP, which included the participation of state agencies and local jurisdictions. This exercise tested and validated the site and affected facilities' emergency plans and implementing procedures, evaluated the adequacy of emergency equipment, evaluated the performance of the emergency response organization, and graded the on- and off-site response. The exercise helped identify areas of improvement that will facilitate more effective response in an actual emergency.

UCOR was also a lead sponsor of Oak Ridge Safety Fest, held Sept. 11-14, 2012. Safety Fest offered demonstrations and various safety classes to the community. As part of the event, 33 various safety classes were offered and attended by 303 participants.

Other safety accomplishments include:

- Successfully transitioned radiological protection services subcontractor staff to a staff augmentation subcontract, resulting in \$1 million savings per year
- Received approval from the Tennessee Department of Environment and Conservation for the TSCA Incinerator Closure Certification Report
- Continued working to obtain the DOE Voluntary Protection Program Star status
- Certified 44 employees as Safety Trained Supervisors
- Established an employee recognition program, "Caught Working Safely," to reinforce positive behavior

UCOR worked all of FY 2012 without sustaining a lost workday away injury.



A demonstration on safety measures needed around power lines was featured at Safety Fest.



A little makeup is used to create an emergency exercise "victim"

FY 2012 Performance Compared to Contract (\$1,000)

	UCOR's FY 2012 Performance	Contract Performance
Budgeted cost of work scheduled	303,966	368,270
Budgeted cost of work performed	308,964	373,402
Actual cost of work performed	299,110	358,145
Schedule variance	4,998	5,132
Cost variance	9,854	15,257
Scheduled performance index	1.02	1.01
Cost performance index	1.03	1.04

Favorable schedule variance primarily due to accelerated K-25 demolition and waste removal.

Favorable cost variance primarily due to competitive procurement of new subcontracts, realignment of work scope between UCOR and subcontractors, and implementation of more cost efficient ways to dispose of cleanup wastes.

Operating efficiently

UCOR realized approximately \$17 million in cost savings, which was funneled back into the ETTP cleanup project to accelerate work at the site.

Costs savings were realized through a number of means, such as self performing Liquid Gaseous Waste Operations (LGWO) for a \$3 million savings, reevaluating waste disposition pathways for a \$2.4 million savings, and implementing staff augmentation subcontracting for a \$5.5 million savings.

UCOR also absorbed an FY 2012 funding reduction of approximately \$22 million while still performing new and accelerated scope. At the end of the fiscal year, UCOR's work was ahead of schedule and under budget.

The K-27 Project benefited from these cost savings as UCOR worked with the U.S. Department of Energy (DOE) to accelerate the project and begin deactivation activities. Because of the building's deteriorated condition, it was an ideal candidate for acceleration.

In addition, UCOR was able to complete two projects not originally in the contract scope: removal of Tank W-1A at Oak Ridge National Laboratory (ORNL) and completion of K-1070-B disposal area cleanup.



Self-performing LGWO work saved \$3 million

EVMS certification achieved

UCOR achieved DOE certification in FY 2012 for its Earned Value Management System (EVMS), a set of tools, systems, and processes for managing projects.

DOE requires EVMS be used on all of its projects that involve capital assets, which are land, structures, equipment, and intellectual property used by the federal government, as well as the environmental remediation of land to make it useful.

DOE's Office of Acquisitions and Project Management conducted UCOR's certification review. A 13-person review team visited the site the week of March 26 to review schedules, reporting, processes, and data flow to determine that the correct measures were in place to meet the certification criteria. The team's visit included interviews with various control account managers and senior project managers.

UCOR only had one corrective action, which has been resolved with the certification review team.

Contract reconciliation completed



Contract reconciliation team

UCOR and DOE have reconciled and aligned the Oak Ridge cleanup contract as it relates to how it was originally bid and the actual work that UCOR will be performing.

The process, which traditionally takes two to three years, was completed in just 10 months.

After major government contracts are awarded, contractors begin this reconciliation process, which identifies and analyzes additional work scope that was not included in the original Request for Proposal and work that was removed from the scope.

Immediately after taking over the contract on Aug. 1, 2011, UCOR began defin-

ing the material differences between the contract proposal and the actual work that DOE assigned UCOR. Some of these changes included the addition of the K-1070-B Burial Ground remediation at ETTP, removal of the contaminated Tank W-1A at Oak Ridge National Laboratory, and acceleration of the K-27 Building deactivation project at ETTP.

UCOR completed submission of all material difference proposals to DOE in January, and DOE conducted technical evaluations and cost analyses on all proposals. DOE and UCOR concluded negotiations on May 31, 2012.

Performance Measurement Baseline approved

DOE approved UCOR's Performance Measurement Baseline (PMB) in FY 2012—11 months after contract start. UCOR submitted the PMB to DOE within four months of contract start. The PMB includes all scope, costs, and schedule activities of the contract.

UCOR wraps up K-25 east wing demo project, begins tearing down north end



Above, demolition of the north end begins. Below, workers are bringing down the last section of the non-technetium portion of the east wing.

UCOR demolished 1.5 million ft² of the K-25 Building's east wing in FY 2012 and initiated demolition of the facility's north end.

Besides the north end, the only other portion of the building left standing is the southernmost section of the east wing. This section is contaminated with technetium-99, a slow-decaying radioactive metal. That section will require further deactivation before demolition because of the special handling requirements for technetium-99.

The K-25 Building was a former gaseous diffusion facility built as part of the Manhattan Project for the purpose of



uranium enrichment. The mile-long structure was shut down in the early 1960s. It was composed of three major sections—the east and west wings and the north end—aligned in a “U” shape. The north end forms the base of the “U” and is the smallest of the three sections.

The north end was once considered a candidate for historic preservation, but its deteriorated condition made that option too costly. DOE signed an agreement with historic preservation groups in FY 2012 allowing demolition of the north end in lieu of implementing other preservation actions (see next page).

Most of the debris from the demolition activities is being disposed of at the Environmental Management Waste Management Facility, which is located on the Oak Ridge Reservation near the Y-12 National Security Site. It is connected to ETTP by a specially built haul road.

Pre-demolition activities for the remainder of the east wing continues into FY 2013. As a cost-savings measure, UCOR has worked with other DOE sites to obtain and deploy excess heavy machinery.

For example, in the second quarter of 2012, UCOR obtained an Ultra-High Reach excavator from the Hanford Site that will enable the project to eliminate costly equipment rental fees. The savings for these types of acquisitions over the span of a project will be significant.

Also, in cooperation with DOE-ORO and the DOE Savannah River Site, UCOR identified excess demolition equipment from the Savannah River Site and transported it to ETTP. These shipments included more than 44,000 individual items with an original purchase value of more than \$2,450,000. This material was obtained at a total cost of less than \$100,000.



UCOR worked with other DOE sites to obtain heavy machinery in order to save costs.

Parties reach consensus on steps to commemorate K-25's history

After lengthy negotiations, DOE and local historic preservation agencies agreed upon commemorative measures that will preserve the historic contributions of Oak Ridge's K-25 site to the World War II Manhattan Project.

While preservation of the K-25 Building's north end was one consideration, the building's deteriorated condition made that option unfeasible. Instead, DOE will commemorate the site by implementing the following measures:

- Approximately 40 acres located inside the road that currently surrounds the original K-25 Building will be dedicated for commemoration and interpretation activities. The agreement calls for the construction of a three-story equipment building at the property's southern end that will recreate a scale representation of the gaseous diffusion technology and contain authentic equipment used in the K-25 Building. The building will also house other equipment that was developed and/or used at the site. The project will include a viewing tower erected on the south end of

the building's footprint (near the fire station) and 12 wayside exhibits that will tell portions of the K-25 story.

- A K-25 History Center will be located nearby on the second level of the fire station, which is owned by the City of Oak Ridge. The History Center will provide space to exhibit equipment, artifacts, oral histories, photographs, and video.
- DOE will provide a grant of \$500,000 to the East Tennessee Preservation Association to help preserve the Alexander Inn, a historic structure in Oak Ridge where visiting scientists and dignitaries stayed while visiting the area. The grant will be used to purchase the property and stabilize the structure until the Inn can be transferred to a private developer.

The K-25 complex contained more than 500 buildings and 12,000 workers at its peak. The project's enormous scale, which in 1945 included the world's largest building, was necessary to produce the uranium-235 that was used to build the atomic bomb that ended the war with Japan.

A viewing tower, as shown in this artist's concept, will be placed on the southern end of the K-25 footprint, near the Oak Ridge Fire Station.



K-27 being prepared for demolition



UCOR transitioned part of its workforce to the K-27 Building project in FY 2012 to prepare the facility for demolition. The K-27 Building's structure is similar to that of the K-25 Building, but smaller. It is approximately 900 feet long, 400 feet wide, and 58 feet in height. The building is in a severely deteriorated state. UCOR worked with DOE to accelerate the schedule for the K-27 demolition project because of the building's condition.

Pre-demolition work that has been initiated includes collection of Non-Destructive Assay measurements of process pipe to characterize the contaminants; inventory management; vent, purge, drain, and inspection activities of process equipment; and the installation of safety controls.

Pre-demolition activities, including removal of high-hazard sodium fluoride traps, continued into FY 2013 in preparation for future building demolition.



Deteriorated condition of the K-27 Building



A worker performs sampling activities in K-27



Process equipment in the K-27 Building must go through vent, purge, drain, and inspection steps as part of the pre-demolition process



Workers perform sampling activities at Poplar Creek to determine where the material could be sent after demolition activities commence.

Workers complete characterization activities on Poplar Creek structures

The characterization of 22 structures in the Poplar Creek area at ETTP was completed in FY 2012.

The objectives of this project, funded by the American Recovery and Reinvestment Act, were to complete deactivation in preparation for demolition and perform waste characterization of selected facilities to determine the appropriate disposal facility to which the demolition debris could be sent.

The project began with a field investigation to evaluate the historical information and data that had been previously collected and then to determine where data gaps existed.

Once the data gaps were identified, a characterization plan was prepared to describe how data would be col-

lected. The collected data was then used to determine the proper disposal facility for each structure and to prepare the documentation required for the waste to be accepted.

This characterization included investigations of building and equipment surface locations using a combination of field screening instrumentation and collection of samples for laboratory analysis. Data-gathering techniques included intrusive sampling, in situ gamma spectroscopy measurements, and radiation scans and direct measurements. The intrusive smear, residue, and liquid samples collected were analyzed for radionuclides, metals, semi-volatile organics, volatile organics, and polychlorinated biphenyls, among other potential contaminants of concern.

K-1070-B remediation completed

UCOR completed remediation of the K-1070-B landfill in FY 2012, saving \$1.5 million in the process.

The 6.5-acre landfill, located adjacent to the K-25 Building site, was used from the early 1950s to the mid-1970s to dispose of items such as equipment, materials, parts, and drums. The landfill consisted of six trenches, each excavated to about 15 feet deep, and approximately 20 feet of debris landfilled over the top of these trenches. The debris and soil in the trenches had already been excavated when UCOR arrived, and the materials were awaiting disposition. There was also a “hot spot,” which is a focused area of higher contamination levels. UCOR remediated this hot spot. The major contaminant was uranium.

The K-1070-B team worked for more than three years without any work-related injuries or illnesses – not even a first aid case.

In addition to the 7,790 dump truck loads of waste shipped to the Environmental Management Waste Management Facility (EMWMF) for disposal, the team brought in more than 4,100 dump truck loads of concrete rubble, riprap, backfill, and topsoil to provide a final cover for the burial ground. No transportation accidents were associated with the shipping of waste or the receipt of material for the final cover. The site was then seeded with grass.

UCOR was able to save costs on this project by using concrete rubble from Poplar Creek, which required less riprap to be ordered, and by implementing more economical disposal methods for mercury-contaminated wastes.



K-1070-B during remediation



K-1070-B after remediation activities were completed and the site backfilled and seeded.

Tank W-1A at ORNL removed

UCOR removed Tank W-1A, an underground liquid waste storage tank at ORNL, and shipped it off site for disposal.

Tank W-1A was commissioned in 1951 to collect and store liquid wastes from radiochemical separations and high-radiation analytical facilities at ORNL. The 4,000-gallon stainless steel tank was 7.5 feet in diameter and 13.5 feet long. Weighing 6,500 pounds, the tank was buried about 10 feet below the ground surface.

During its operation, a transfer line was suspected of leaking near the tank intake, causing significant soil and groundwater contamination. The tank was emptied and removed from service in 1986 after the leak was discovered.

UCOR excavated and removed the tank in January 2012. The tank was packaged and sent to a subcontractor for size reduction. Once that was completed, tank segments and related material were repackaged into nine

lead-lined B-25 boxes for shipment off site for disposal. Shipments of soil and secondary waste from the project were completed in May 2012.

Materials from the remediation were disposed of at EMWMF and DOE's Nevada National Security Site (NNSS).

Fifteen containers met the acceptance criteria for on-site disposal and were sent to EMWMF. A total of 333 containers were sent to NNSS in Department of Transportation approved containers.

Tank W-1A has been the focus of many actions during the past several years. In 1995, a system was installed to pump and treat the groundwater plume that originated from the tank helping to mitigate environmental impacts to the groundwater. That system continues to operate.

Removal of the tank has made the environment safer and brings to completion this historically troublesome project.

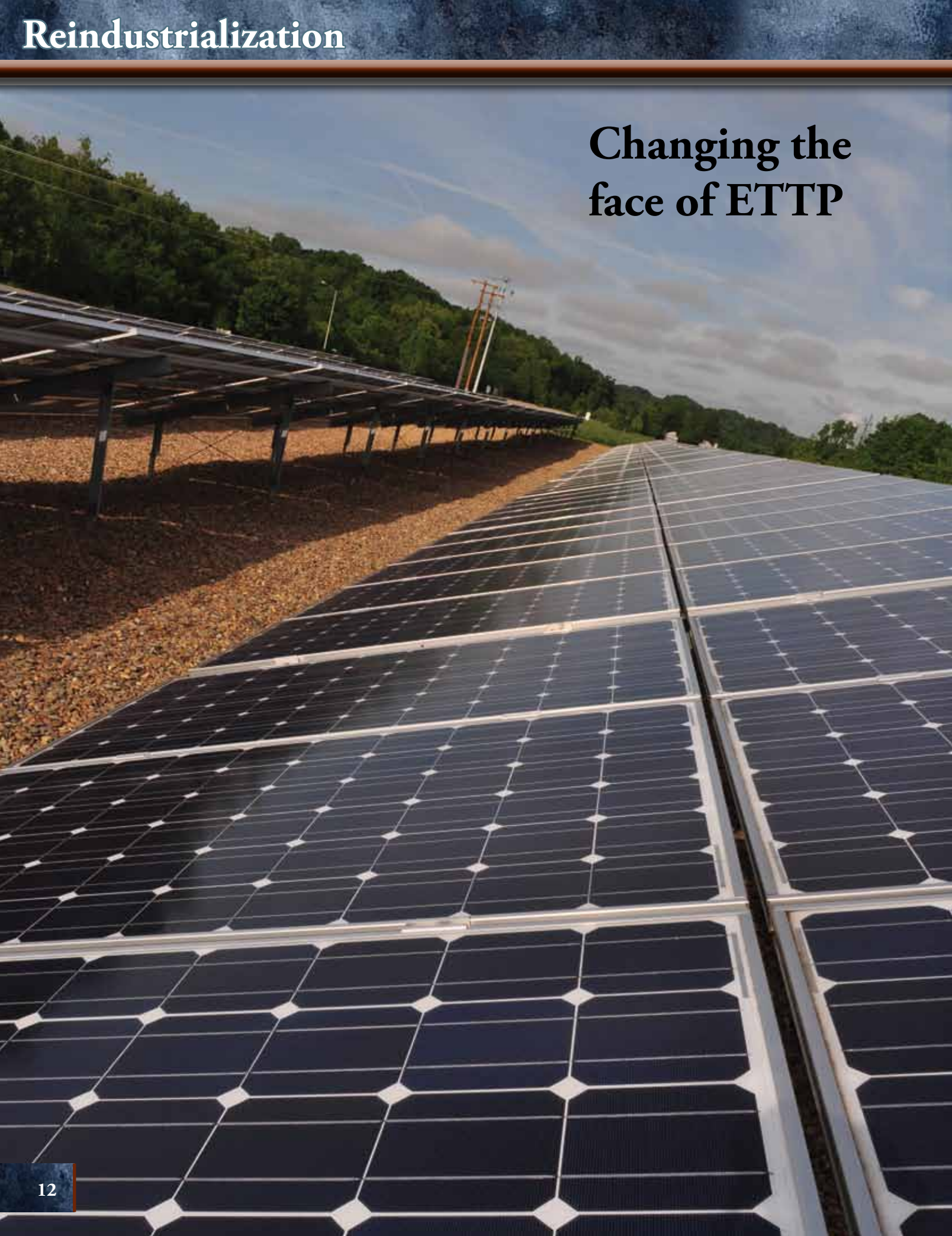


Extraction of Tank W-1A at ORNL



Tank W-1A site after remediation

Changing the face of ETTP



UCOR continued in FY 2012 to assist the DOE Oak Ridge Reindustrialization Program in its efforts to transform ETTP into a private sector business/industrial park.

With the transfer of Parcel ED-10 to the Community Reuse Organization of East Tennessee (CROET), an additional 13 acres in the central area of ETTP were made available for private use. Babcock Services purchased 2.5 acres of Parcel ED-10 and began constructing a 13,300 ft² facility. The property will be used to manage, recover, and refurbish radioactively contaminated components from commercial nuclear power plants and is projected to create more than 100 jobs.

An additional 25 acres in the former Powerhouse Area along the Clinch River were made available via a lease to CROET for industrial development, increasing the total to 308 acres. Oak Ridge Forest Products is leasing a portion of this site from CROET in support of its operations to supply wood chips that fuel a biomass gasification plant at ORNL.

In Spring 2012, a 200 kW photovoltaic solar farm at the entrance to ETTP began generating enough electricity to power 22 homes. The land for the solar farm was purchased from CROET by RSI, the developer and operator of the system and UCOR's primary subcontracting partner. Development of RSI Brightfield 1, as the solar farm is called, required UCOR's collaboration with TVA, DOE, and the City of Oak Ridge.



Oak Ridge Mayor Tom Beehan, left, and RSI Vice President Rick Ferguson celebrate the power up of RSI Brightfield 1.

The new \$35 million Carbon Fiber Technology Facility at Oak Ridge's Horizon Center is nearing completion. This advanced materials facility will allow researchers to develop and demonstrate the commercial viability of low-cost carbon fiber products for several industry sectors. Long considered a desirable lightweight substitute for steel and other materials, use of carbon fiber has been limited due to its high production costs. The development of low-cost production methods is expected to create new possibilities for its use in a wide array of applications for building structures, industrial products, wind turbines, and others.



Many ETTP facilities, including this former Visitors Center, have gotten a facelift through Reindustrialization

EPA honors UCOR's stewardship

UCOR's commitment to working in an environmentally responsible manner was showcased in FY 2012 as ETTP became the first DOE Environmental Management site to receive the Environmental Protection Agency's highest award for electronics stewardship, the Federal Electronics Challenge (FEC) platinum award.

ETTP is one of just 10 platinum award winners in 2012. The site won the platinum award this year largely for its exemplary efforts in recycling end-of-life electronic equipment, purchasing environmentally friendly computer products (EPEAT registered), and implementing power management measures.

"I am proud and excited that our Information Technology has been recognized with this award," said Leo Sain, UCOR President and Project Manager. "We are committed to being good stewards of all our assets, and this is a good example of how we strive to continually do better and better."

Specific accomplishments necessary to win the FEC award include conducting employee training and education in concert with the site's Environmental Management System program; ensuring that at least 95 percent of purchased or leased computer desktops, laptops, and monitors are EPEAT registered; and ensuring that 75 percent of its printers, copiers, and faxes meet key environmental attributes for sustainability and recycling electronics at a certified Responsible Recycler facility. Additionally, the ETTP Information Technology (IT) department participated in numerous mentoring activities at other sites on its Radio Frequency Identification Transportation System (RFITS), a paperless shipping program.

The IT department mentored the U.S. Department of Transportation in support of its in-commerce electronic shipping initiatives based on lessons learned from the RFITS project. This initiative could save tens of millions of dollars in eliminating paperwork associated with the transportation of hazardous materials as well as increase emergency response times and reduce risk to the public in the handling and transportation of radioactive and hazardous materials.



Pictured at the FEC Award presentation ceremony are (from left) Jim Jones, Acting Assistant Administrator of the Office of Chemical Safety and Pollution Prevention, U.S. Environmental Protection Agency; Jim Kopotic, Oak Ridge Office of Environmental Management, DOE; Ken Wellmaker, UCOR Chief Information Officer; Dean Newton, UCOR's RFITS Technology Manager; Jennifer MacDonald, Director of the Sustainability Performance Office, DOE; and Keith Jones, UCOR Waste Management Systems.



The RFITS paperless shipping program played a key role in ETTP winning the platinum award.

UCOR supports the community

UCOR donated more than \$370,000 to local charitable agencies and educational institutes through the end of FY 2012. Just a few of the agencies and activities that benefited from UCOR donations include:

- The University of Tennessee, for a UCOR faculty fellowship in the College of Engineering
- Emory Valley Center, a non-profit agency serving individuals with developmental disabilities, to help build a new center
- Oak Ridge's Secret City Festival
- The United Way

UCOR also provided 24 mini-grants to several local schools. The Excellence in Education Mini-Grant Program was designed to recognize and support excellence in teaching by providing funds to assist classroom teachers for specific projects or curricula, focusing primarily on science, technology, engineering, and math.

A donation to the Food for Kids backpack program was used by Anderson County Schools to provide easy, nutritious food to elementary school children during weekends when they do not have access to school lunch programs.

UCOR also supported the Oak Ridge Playhouse's capital campaign to raise funds for a new facility and sponsored a special showing of "Damn Yankees" for United Way Pillar Givers and UCOR employees.



A donation to the Food for Kids program helped provide nutritious meals to children in need.



A book and gift fair raised funds for the United Way.

Funds raised during United Way campaign

UCOR employees donated and helped raise \$75,000 as part of the company's 2012 United Way campaign.

Various fund-raising events, such as a book and gift fair, on-line auction, and various lunches were held. The fund-raisers were combined with an employee payroll deduction campaign to meet the company's \$75,000 goal.



UCOR was a primary sponsor of Oak Ridge's Secret City Festival, which features a performance by 38 Special.

About Our Company

UCOR became DOE's cleanup contractor for the Oak Ridge Reservation on August 1, 2011. We are a partnership between URS, a worldwide provider of engineering, construction, and nuclear cleanup services, and CH2M HILL, one of the top-ranked environmental firms in the world. Along with our teaming subcontractor, Restoration Services Inc. (RSI), we are committed to the long-term, safe cleanup of DOE's Oak Ridge Reservation.

FY 2012 performance at a glance

▶ \$15 million under budget (\$373 million in scope delivered for \$358 million)

▶ \$5 million worth of work ahead of schedule

▶ More than \$27 million in costs savings identified

▶ 1.52 million ft² of a Category 2 nuclear facility demolished

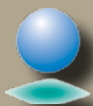
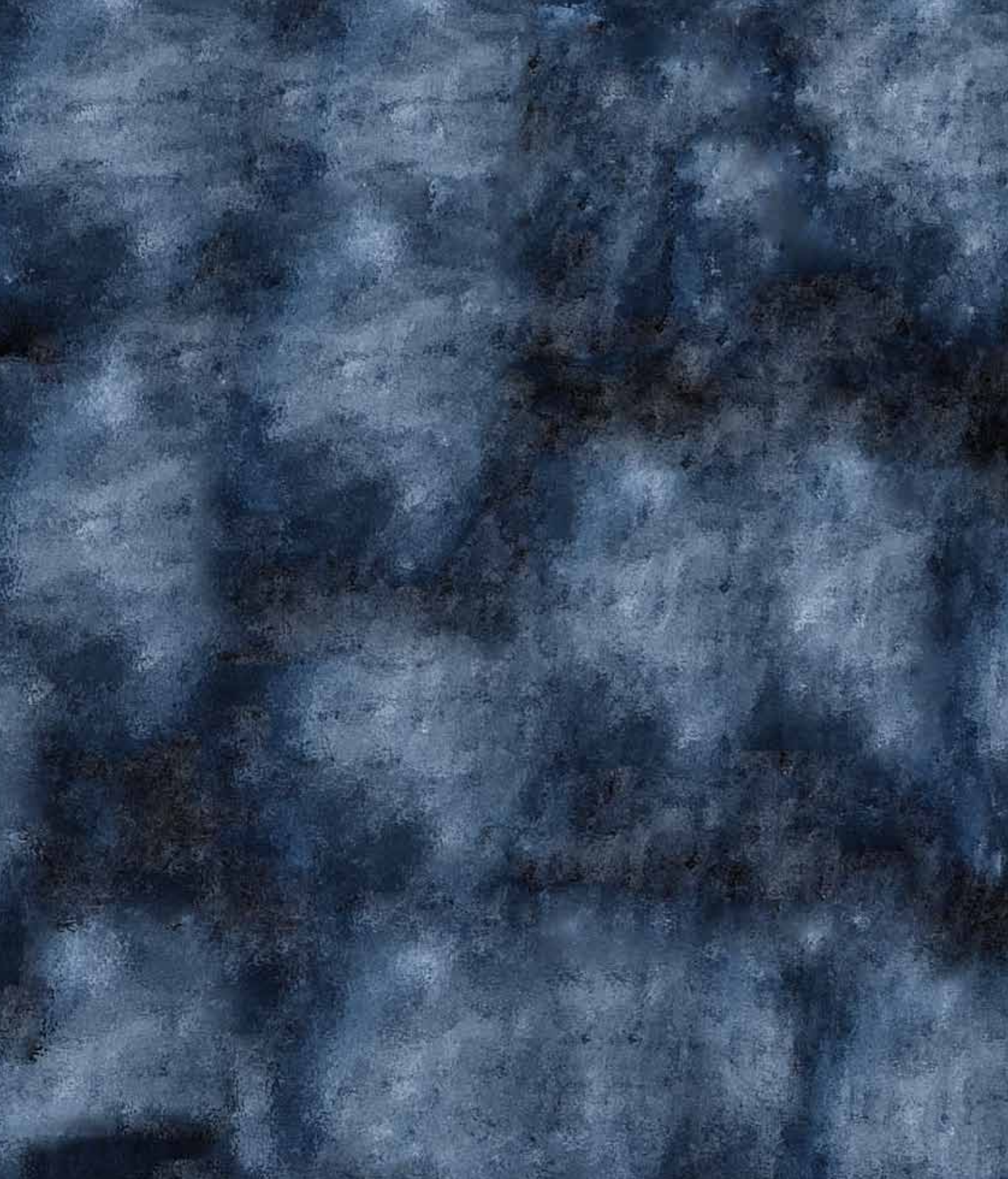
▶ Almost \$40 million in authorized unpriced work assumed and completed

▶ 90,000 yds³ of nuclear waste safely disposed

▶ 3.4 million safe hours worked

▶ Received 16,660 truck loads of waste, totaling 185,000 tons, at the Environmental Management Waste Management Facility, DOE's on-Reservation disposal cell that is managed by UCOR





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Restoration Services, Inc.