



2013 Annual Review



UCOR
URS | CH2M
Oak Ridge LLC



The final section of the mile-long K-25 Building was demolished in Dec. 2013. See page 2.

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East Tennessee Technology Park

Message from the President

2013 was a stellar year for cleanup at East Tennessee Technology Park (ETTP). We kicked off the year by completing demolition of the K-25 Building's north end, one of three main sections of the U-shaped, mile-long gaseous diffusion building. By the end of the year, we had demolished the final portion of the building, ahead of schedule and under budget.

Completing the largest demolition project in the Department of Energy (DOE) Complex took significant planning, integration, and dedication, and I commend everyone involved—from DOE, who provided exceptional guidance on the project, to the labor unions, whose dedication helped make the project a success. Our management team and workforce are among the best I've experienced in my career.

I'm proud of the UCOR team and the progress we are making across the DOE Oak Ridge Reservation. Our Surveillance and Maintenance Program has been busy at all three Reservation sites. At ETTP, the Surveillance and Maintenance personnel successfully demolished a 382-foot water tower and, after cleaning out all hazardous waste constituents, closed the Central Neutralization Facility, a former wastewater treatment plant. At the Y-12 National Security Complex, personnel completed several important mercury cleanup projects that will help facilitate further mercury cleanup on the Reservation. At Oak Ridge National Laboratory (ORNL), the Surveillance and Maintenance Program was able to stabilize and successfully downgrade the status of a radiological facility at ORNL, making it less expensive to maintain.

We have continued to efficiently operate the Environmental Management Waste Management Facility, a disposal complex located near Y-12 that handles our cleanup wastes. This facility is an important asset to efficiently completing our cleanup mission.

Our main cleanup focus continues to be ETTP as DOE works to transition the site to a private sector industrial park. We have continued pre-demolition work on the K-27 Building, coordinating with DOE to identify cost savings that would allow us to move that project forward. In 2013, we identified \$21 million of costs savings that was funneled back into cleanup work.

The cost savings we are generating not only allow work to progress more quickly than planned, they also save taxpayers significant dollars. We will continue looking for ways to do work more economically and efficiently while maintaining safety excellence.

Our number one goal is working safely. Since beginning this contract in August 2011, we have maintained an excellent safety record. We want to ensure our employees go home at the end of the day in the same condition they arrived, and I'm pleased that we have such a dedicated, safety-conscious work force.



A handwritten signature in black ink that reads "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

Project Accomplishments



The last section of the K-25 Building was brought down in December 2013.

K-25 Building demolition completed

The last remnants of the K-25 Building, which has been part of the ETTP landscape since the 1940s, was brought down in 2013, marking the completion of an historic, large-scale demolition project that began five years earlier.

The west wing of the building was demolished by a previous contractor. UCOR successfully demolished the north end and east wing of the mile-long, U-shaped facility in what was the largest demolition project in the DOE Complex.

The final section of the building—a small portion of the east wing—was more challenging to bring down because it was contaminated with technetium-99, a slow-decaying radioactive isotope. Workers had to paint the contaminated equipment in the building bright blue, then segregate those pieces out in the demolition field for off-site disposal.

Before beginning demolition of the K-25 Building's final section, UCOR removed five components known as sodium fluoride (NaF) traps, some of the highest risk equipment in the building. The NaF traps contain a material that was used to absorb uranium from the process system. The NaF traps were each about the size of a household hot water heater and ranged in weight from 150 to 800 pounds. To remove the vessels, workers cut a hole in the roof of the building and used a crane to lift them out.

"The demolition of K-25 represents a key milestone in our efforts to restore the site to the community, and to complete it ahead of schedule and under budget is a testament to the grit and determination of the entire project team," Deputy Secretary of Energy Daniel Poneman wrote in a letter to UCOR President and Project Manager Leo Sain.



NaF trap removal from the K-25 Building.



K-25 Building before demolition.



The small section of the K-25 Building pictured above required special handling because it was contaminated with technetium-99.

Iconic water tower demolished

The K-25 Building was not the only landscape-changing demolition project at ETTP in 2013. UCOR also demolished the checkerboard water tank that had dominated the site's skyline for 55 years.

UCOR, along with its subcontracting partners, brought down the 382-foot-tall tank in August 2013 through a controlled explosive demolition that sent the structure toppling into an empty field.

Officially called the K-1206-F Fire Water Tower, the 400,000-gallon structure was designed and built by the Chicago Bridge and Iron Company in 1958 to service the site's fire protection system. It operated until June 3, when the valves were turned off. It was drained, disconnected, and permanently taken out of service on July 15.

With the tank gone, the site will rely on pumping stations to provide the necessary pressure for its fire water system. The system will eventually be turned over to the city of Oak Ridge, another step in DOE's overall strategy of converting ETTP into a private sector industrial park.

Through the years, the tower had deteriorated. An engineering evaluation was conducted in 1994 to assess its overall condition. It was eventually added to the list of structures at ETTP that would be demolished.

Although not originally scheduled to be demolished in 2013, DOE and UCOR accelerated the schedule for demolition because of the tower's continuing deterioration.

"The skyline at ETTP is forever changed with the demolition of the water tower," said Bob Smith, Technical Services and Site Support Projects Manager. "We are pleased that we were able to safely and expeditiously bring down this massive structure, accomplishing another major cleanup milestone at the site. This demolition project is emblematic of the cleanup and reindustrialization of the ETTP site."

The project was a team effort involving DOE, UCOR, and UCOR's subcontractors—Veterans Contracting Solutions Group LLC and Controlled Demolition Inc.



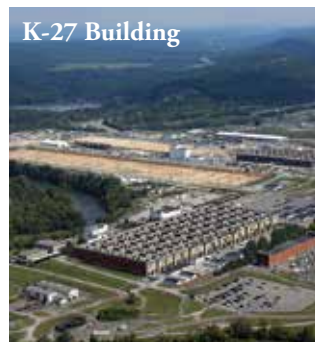
Preparation for K-27 demo continues

Pre-demolition work continues in the K-27 Building, one of two remaining ETTP gaseous diffusion buildings. The building has severely deteriorated, necessitating timely attention to ensure safe and efficient demolition. The K-27 Building is similar in structure to the K-25 Building and is approximately 900 feet long, 400 feet wide, and 58 feet in height.

In 2013, UCOR performed inventory management and characterized process equipment. Workers also vented, purged, and drained process equipment. This work eliminates personnel safety hazards associated with the uranium hexafluoride materials retained in the system reacting with moisture in the atmosphere, which produces hydrogen fluoride gas. Workers drill holes in the piping using a hot tap to safely control the release of any internal pressure. Once residual pressure is relieved, moist air is

pulled through the pipes to cause any remaining uranium hexafluoride to react and any residual hydrogen fluoride to flush from the system. The air is then filtered before being vented.

Six NaF traps were also removed from the K-27 Building. When K-25 and K-27 were operational, the NaF traps were part of the process gas system. Sodium fluoride pellets were used to trap the uranium, and these traps still contain uranium materials left behind after the facility was shut down decades ago.



A technician samples gases vented from a process gas system to verify the absence of hydrogen fluoride.



One of the NaF traps that was used in the K-27 Building is being removed.

UCOR wraps up mercury projects

UCOR completed several mercury-related projects and issued final reports in 2013.

The projects, funded by the American Recovery and Reinvestment Act, included planning for new facilities, such as a water treatment plant to be used in mercury remediation efforts; disposing of mercury-contaminated media; performing sampling and characterization of suspected contaminated areas; and removing old, abandoned tanks containing mercury. These projects are part of DOE's upcoming focus on mercury cleanup at the Y-12 National Security Complex.

The total funding for all tasks was \$10.3 million. UCOR completed its work under budget for approximately \$9.5 million. All work was performed with a perfect safety record.

The tank removal project involved five abandoned mercury-contaminated tanks. Three of the tanks were cut up and transported off-site for disposal. The other two were disposed of in the Y-12 Landfills. Three of the tanks had been abandoned as early as the mid-1980s, and some had open pipe penetrations that encouraged small animals to come inside and nest. In addition, the tanks created a human health concern in the warmer months due to the mercury vapors coming from the various tank openings.

When the tanks were emptied and the contents inspected, two of the tanks were discovered to contain approximately 650 pounds of elemental mercury, which necessitated stabilization and shipment for off-site disposal.



Removal of mercury-contaminated tanks was just one of the mercury projects UCOR completed.



A mercury-contaminated tank is being loaded onto an inspection saddle.



Installation of permanent electrical equipment at Building 3026, part of the stabilization efforts, was completed.

Building category downgrade achieved

UCOR, working with DOE, was able to successfully downgrade Building 3026 at ORNL from a Hazard Category 3 nuclear facility to a radiological facility. This downgrade will make the building less costly to maintain.

UCOR conducted various stabilization activities to achieve the downgrade, including installing permanent electrical equipment as well as a new berm to replace sand bags to prevent rain runoff.

Building 3026 was once used to extract certain isotopes from fuel rods used in the X-10 Graphite Reactor.

Central Neutralization Facility shut down

UCOR completed shutdown and decommissioning of the Central Neutralization Facility in 2013. The facility was the main wastewater treatment plant at ETTP.

The Central Neutralization Facility treated wastewater to remove radioactive materials, metals, and suspended solids to meet required discharge criteria for effluent discharged to the Clinch River.

Cleanup activities that were completed included sludge, chemical, oil, and equipment removal and disposal; equipment rinsing and pressure washing; and characterization of some sub-surface facilities.

The Central Neutralization Facility Deactivation and Demolition Project includes approximately 49 buildings, structures, containment and storage tank facilities, and support trailers.



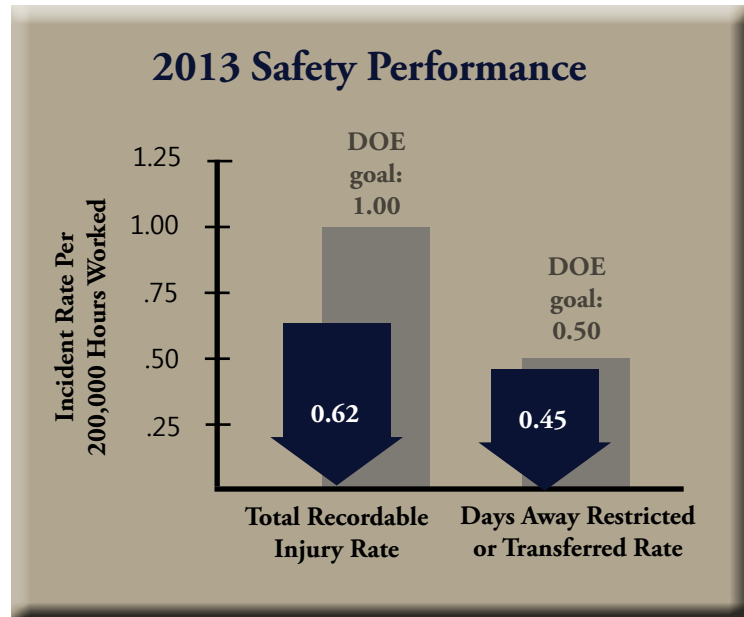
Sludge removal at the Central Neutralization Facility.

Safe performance key to UCOR's success

UCOR is committed to performing work safely, and its safety record for 2013 reflects that commitment. The Total Recordable Case (TRC) rate was 0.62 per 200,000 hours worked. The Days Away Restricted or Transferred (DART) case rate was 0.45. Both rates remain below their respective DOE goals of 1.0 and 0.50. UCOR continues taking steps to improve the overall safety performance. In 2013, UCOR conducted the following safety activities:

- Continued progress toward achieving DOE Voluntary Protection Program Star status.
- Conducted a company-wide Safety Focus with emphasis on good housekeeping practices.
- Presented company-wide, after-the-holiday Safety Re-Focus sessions that reviewed behaviors and conditions, error precursors, and Human Performance Indicator tools that can be used to reduce/eliminate injuries.
- Chartered a UCOR Wellness Committee and established Wellness Rooms containing weight scales, blood pressure monitors, and information for employee use, provided "Work-on-Wellness" lunch and learn sessions, provided health and fitness center membership discounts, established walking trails at ETTP, established Weight Watchers at Work, purchased pedometers and water bottles for distribution to employees, purchased *Mayo Clinic Guide to Self Care* books for distribution to employees, and provided *National Safety Council Family Safety & Health* magazine subscriptions for all employees.
- Held housekeeping-emphasis days where the field superintendents' work crews completed housekeeping walk-downs of their work areas addressing all housekeeping concerns.
- Certified more than 115 employees as Safety Trained Supervisors.
- Issued monthly editions of the employee safety newsletter, *Safety Advocate*.
- Focused an issue of the *Safety Advocate* newsletter on the UCOR Safety Conscious Work Environment policy.

UCOR's safety performance can also be measured by its commitment to providing a safe environment for workers as well as the public. More than 16,000 effluent analytical results and more than 2,000 field measurements were obtained as required by site discharge permits and monitoring requirements with zero identified permit or water quality violations or exceedances. DOE's Office of Health, Safety and Security's assessment of the UCOR Radiological Protection Program also resulted in zero findings.





Responders treat “victims” during the emergency exercise.

Emergency exercise conducted at ETTP

UCOR’s Environment, Safety, and Health staff successfully conducted an emergency management exercise for ETTP in May 2013.

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-site response. The exercise helped identify areas of improvement that will facilitate more effective response in an actual emergency.

UCOR cohosts Safety Fest TN

As part of the commitment to community outreach, UCOR was a cohost of 2013 Safety Fest TN, which provided free safety- and health-related training to approximately 400 individuals. Representatives from 100 companies filled more than 700 class seats during the event, held Sept. 9-13, 2013. Thirty expo sponsors manned exhibits during the event, which included high-voltage demonstrations. The URS slip simulator was also available for attendees to experience.



URS’s slip simulator helps people learn how to walk on slippery surfaces.

UCOR holds safety and health fair

UCOR held an Accomplishments Celebration/Safety and Health Fair in November 2013 that included more than 35 exhibitors offering a variety of services and educational opportunities.

Methodist Medical Center offered a free EKG screening, and various safety suppliers exhibited the latest safety equipment. UCOR’s Human Resource department provided information from Aetna. Local health clubs, financial institutions, and other entities were represented, including local chiropractors. Many of the exhibitors offered giveaways and informational brochures.



Various exhibitors participated in UCOR’s safety and health fair.

Awards and Recognition

ETTP earns second consecutive Federal Electronics Challenge Platinum Award

ETTP has become the first DOE Environmental Management site to receive the Federal Electronics Challenge (FEC) Platinum Award two years in a row.

The FEC is a partnership program that encourages federal facilities and agencies to purchase greener electronic products, reduce impacts of electronic products during use, and manage obsolete electronics in an environmentally safe way.

Federal agencies and facilities participate as partners in the program. The FEC provides partners with resources and technical assistance for improving electronics management practices and gives annual recognition to partners that have achieved specific goals. The platinum award is the highest level of recognition given. ETTP received the gold award in 2011 and the platinum award in 2012, and in 2013, became the first DOE EM platinum repeat winner. The site won the platinum award largely for its efforts in recycling end-of-life electronic equipment, purchasing environmentally friendly computer products, reducing paperwork through the Radio Frequency Identification Transportation System, and implementing electronic energy-saving measures.

The FEC is managed by the U.S. Environmental Protection Agency and the Office of Federal Environmental Education.



Sustainability efforts recognized

DOE Headquarters has recognized UCOR's commitment to waste minimization and sustainability with two awards in 2013. One of the awards was given to a group of projects representing UCOR work at all three sites in the Waste Reduction and Pollution Prevention category. The other was presented to an Information Technology staff member in the Exceptional Service/Sustainability Champion category.

The team award recognizes UCOR's construction and demolition waste diversion accomplishments that diverted more than 8,000 metric tons of waste that would have been otherwise disposed. The team included the following projects: Poplar Creek D&D Project, Waste Disposition Operations Project, ORNL Surveillance and Maintenance Project, Tank W-1A Project, and the Y-12 Surveillance and Maintenance Project. Chuck Oldham of Information Technology also won an individual award for leading UCOR's efforts to purchase energy-friendly electronics products and encourage recycling, resulting in reduced power and cooling needs.



Project award winner representatives pictured with Leo Sain (center) are, from left: Wayne Mitchell, Traci Hempen-Potter, Moose Erickson, Steve Nolan, and Jim McCague. Also pictured is Chuck Oldham, an individual award winner.

Local community benefits from UCOR's community involvement efforts

UCOR donated almost \$300,000 to local charitable agencies and educational institutes in 2013. 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
- Oak Ridge Arts Center

UCOR also provided 25 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 spe-

cific projects or curricula, focusing primarily on science, technology, engineering, and math.

A donation to the Second Harvest Food for Kids backpack program was used by Anderson and Roane 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 "Annie" for United Way Pillar givers and UCOR employees.

The UCOR 2013 United Way campaign raised more than \$105,000 through employee and corporate donations and special fund-raising events, including an on-line auction, several lunches, and a book/gift fair.



Above: UCOR donated \$50,000, part of a multi-year commitment, to the University of Tennessee for a faculty fellowship in the College of Engineering. Above, a student of faculty fellow Jason Hayward demonstrates a project for UCOR representatives.

Above right: For the second consecutive year, UCOR was the stage sponsor for Oak Ridge's Secret City Festival, which this year featured a performance by singer Rick Springfield.

Right: Radio personality and "Voice of the Vols" Bob Kesling helped UCOR start its United Way campaign at a special kick-off event.



Financial Performance

CY 2013 Performance Compared to Contract (\$1,000)

| | UCOR's CY 2013 Performance | Contract Performance |
|---------------------------------|-------------------------------|-------------------------|
| Budgeted cost of work scheduled | 278,838 | 709,696 |
| Budgeted cost of work performed | 292,481 | 731,206 |
| Actual cost of work performed | 257,420 | 667,558 |
| Schedule variance | 13,643 | 21,511 |
| Cost variance | 35,061 | 63,649 |
| Scheduled performance index | 1.05 | 1.03 |
| Cost performance index | 1.14 | 1.10 |

UCOR has been able to safely do work about 3 percent faster than planned and the work completed has been done at a savings of about 10 cents on every dollar spent.

Savings helping to accelerate work

UCOR realized approximately \$21 million in cost savings during fiscal year 2013 (Oct. 1, 2012, to Sept. 30, 2013), which was funneled back into ETTP cleanup work.

Costs savings were realized through a number of initiatives, such as deactivating and transitioning fire protection systems; changing the benefit plan design and delivery model; implementing the DOE Environmental Management Procurement Strategic Sourcing Program; applying innovative methods of accelerating the sequencing of surge tank mining activities; characterizing smaller piping in the K-25 Building prior to removal, allowing for direct disposal; and implementing waste disposal initiatives, including combining waste shipments from multiple projects along with avoiding unnecessary expensive treatment costs through additional characterization and research. Cost saving initiatives identified in FY 2012 and implemented in FY 2013 included centralizing the Project Control Organization, partnering with existing subcontractors to reduce rates, consolidating and reducing staff augmentation requirements, and reusing demolition equipment.

The K-27 Project benefited from these cost savings as UCOR worked with the DOE to continue pre-demolition activities.



Costs savings are being used to continue pre-demolition work in the K-27 Building.

UCOR supports reindustrialization efforts

UCOR continued in 2013 to assist the DOE Oak Ridge Reindustrialization Program in its efforts to transform ETTP into a private sector business/industrial park.

Babcock Services, Inc., a private company that provides services to the nuclear industry, constructed a 13,000-square-foot building at ETTP. Babcock Services purchased 2.5 acres of industrial land from the Community Reuse Organization of East Tennessee (CROET). Facility construction and equipment installation are complete, and operations recently began. This facility is used to manage, recover, and refurbish components from commercial nuclear power plants and could potentially bring more than 100 new jobs within the first three years of operation.

This facility is another recent success of the Reindustrialization Program in Oak Ridge. The property, just east of the K-25 Building site, is on land where cleanup has been completed. It was transferred from DOE to CROET and then sold to Babcock Services. CROET will reinvest proceeds from the sale to further enhance the viability of ETTP as a private industrial park.

A new solar installation was dedicated in Spring 2013 at ETTP. This solar project is the second at the site and highlights the continued growth of the solar industry in Tennessee as well as the industrial park's suitability for renewable energy production. Vis Solis, LLC, based in Franklin, Tenn., is leading the project, partnering with the Tennessee Valley Authority, the German Energy Agency, DEGERenergie (Germany's leading solar manufacturer), and CROET.

The system consists of seven ground-mounted geo-trackers that rotate, following the sun to maximize the amount of collected light. Each rotating tracker holds 30 solar panels, and the 50-kilowatt photovoltaic system will produce enough power to serve about 15 homes. This project was sited in an area not suitable for traditional development and highlights DOE and CROET's commitment to efficient reuse of land assets at the former K-25 uranium enrichment plant.

Production has begun at the new state-of-the-art Carbon Fiber Technology Facility at the Horizon Center, an industrial park near ETTP, located on former DOE property. This \$35 million dollar pilot plant is working to commercialize the development of low-cost carbon fiber, an extremely strong and lightweight material that can be used in building structures and industrial products.

This facility is using processes developed at ORNL to dramatically reduce the cost of carbon fiber by mass producing low cost precursor fibers used to manufacture the material. Several Fortune 500 companies have partnered to help with the technology development, including Ford, Dow Chemical, 3M, and Volkswagen.

DOE has completed the environmental regulatory documents needed to transfer an additional 98 acres to the public at land parcel ED-13 and is nearing completion for an additional 28 acres at ED-11 and ED-12, which will allow additional industrial development of the site to continue.



A ribbon-cutting ceremony for the new solar array at ETTP involved local elected officials, the German Consul General, and Vis Solis officials.

About Our Company

URS | CH2M Oak Ridge LLC (UCOR) combines the capabilities of URS, a worldwide leader in engineering and nuclear cleanup work, and CH2M HILL, the United States' largest environmental company. Along with our team subcontractor, Restoration Services Inc., one of Oak Ridge's most successful woman-owned businesses, we are committed to the long-term cleanup success at the DOE Oak Ridge Reservation. We have cleaned up some of the most complex and challenging nuclear facilities in the United States at DOE sites such as Rocky Flats, Colorado; the Savannah River Site, South Carolina; the Mound Site, Ohio; and the Idaho Cleanup Project near Idaho Falls. Our team's worker safety programs, regulatory management process, and demolition and waste management techniques are proven and effective, applying two decades of lessons learned in safely razing and disposing of highly contaminated buildings and restoring the environment. We are using this experience to safely address the tough challenges associated with cleaning up ETTP and other DOE Oak Ridge Reservation sites.

Environmental Management Waste Management Facility

Contract performance through 2013

- ▶ \$63.6 million under budget (\$731.2 million in scope delivered for \$667.6 million)
- ▶ \$21.5 million worth of work ahead of schedule
- ▶ 76 percent of subcontracted work awarded to small businesses (\$302.74 million)
- ▶ 2.4 million square feet of a Category 2 nuclear facility demolished (K-25 Building)
- ▶ 8,911 square feet of other facilities demolished
- ▶ 153,833 cubic yards of nuclear waste safely disposed
- ▶ 34,028 truck loads of waste received at the Environmental Management Waste Management Facility, DOE's on-site disposal cell that is managed by UCOR



