

ETTP Cleanup: Honoring the Past—Shaping the Future

(As published in The Oak Ridger's Historically Speaking column the week of December 2, 2024)

This Historically Speaking column is written by Ben Williams, Public Affairs Specialist for the Department of Energy here in Oak Ridge. He is a good friend, and we have worked together on many of the historical preservation efforts over the years. I asked him if he would consider writing a summary of transformation efforts at the East Tennessee Technology Park and he agreed. I think you will find what he has written to be informative and will help put the transformation of that site in perspective for you. As you know, small modular nuclear reactors are being

Cleanup of the East Tennessee Technology Park (ETTP), formerly known as the K-25 site, honors the patriotic workforce who decades ago carried out a top-secret mission that helped end World War II. Today, their successors have ignited a reindustrialization boom—25 businesses, \$1.35 billion in announced investments, and an expected 1,400 private sector jobs—transforming a once-contaminated, shuttered government site into a vibrant hub of innovation and progress.

The story of ETTP opens as the nation's first uranium enrichment plants, beginning operations during the Manhattan Project to help produce an atomic weapon to end World War II. At the time of its construction, K-25 was the world's largest building. Its footprint spanned 44 acres—so expansive that workers used bicycles to go from one work station to another in the facility.

Over the next decade, four more uranium enrichment plants joined K-25, and the site was renamed the Oak Ridge Gaseous Diffusion Plant. The added enrichment facilities included K-27 in 1945, K-29 and K-31 in 1951, and K-33 in 1954. In addition to these facilities, the site was also home to more than 500 support facilities. For four decades, employees at the site produced nuclear fuel for weapons for the United States and commercial power across the globe. In 1985, enrichment operations at the site were placed on hold, and in 1987, shut down permanently.

Milton “Mo” Beeler was among the workers who honed his skills at K-25. An area supervisor, Beeler recalls the plant's achievements and its eventual closure. In 1974, he began a multi-decade career at K-25 that led him on a recurring tour of miles of piping that connected processes in the uranium enrichment plant. Mo's career took him through operations, shutdown, and the beginning of decades of cleanup.

“I was here when K-25 was operating, and I was here when they tore it down,” Beeler said. “I have personally sat on, crawled over, and inspected hundreds of miles of pipe. I've seen it all.”

Beeler was present in Building 402-9, the purge cascade, on August 27, 1985, when his co-worker, John Shoemaker, shut down the final motor. “The thing I remember most was how quiet it got,” he said. “For the entire 15 years I had been there, the noise was constant. I had never experienced so much quiet within those walls. It was eerie.”

As the nation's environmental regulations expanded, the U.S. Environmental Protection Agency placed the Oak Ridge Reservation on the National Priorities List as a Superfund site, designating it to be cleaned up under provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

In the years following the site's shutdown, most of the abandoned processing and support facilities fell into disrepair. An issue future crews would inherit and address. For cleanup crews, the facilities' structural degradation made them challenging work settings, complicated by the presence of radioactive contaminants, hazardous chemicals, materials and wastes, and environmental conditions.

Four global contractors addressed the challenges over the years for the U.S. Department of Energy's (DOE) Oak Ridge Office of Environmental Management (OREM). The latest, United Cleanup Oak Ridge (UCOR), spent nearly a decade bringing demolition to a successful conclusion in 2020. That feat was a challenge of monumental proportions, and it marked the first time in the world an entire enrichment

complex had been successfully removed. ETPP became the first of the nation's Manhattan Project "Secret Cities" to achieve cleanup. In total, workers took down more than 500 structures that had a combined footprint that could span 225 football fields.

That achievement was made possible through close partnerships among DOE and its contractors, community stakeholders, and the workforce in the field. The partners included all three unions that represent the bargaining employees at both the state and national level, including the National Building Trades Unions Metal Trades Department, the Atomic Trades and Labor Council, and the Knoxville Building and Construction Trades Council.

After the historic completion of demolition in 2020, DOE and UCOR turned their focus to completing soil cleanup. This year, workers finished excavating nearly 50,000 truckloads of soil impacted from historic operations, and DOE also finalized plans with its regulators that provide guidance on how to address groundwater at the site – marking the final phase of cleanup at ETPP.

A Nuclear Site Reenergized

With hazards removed and the environment restored, DOE has partnered with the City of Oak Ridge, Roane County, the National Park Service, and Tennessee Wildlife Resource Agency to advance its ultimate vision of transforming ETPP into a multi-use industrial park, conservation area, and national park. That vision is being realized more each passing year.

DOE transferred more than 400 acres this past fiscal year, bringing the total to 1,700 acres. It is also scheduled to transfer another 900 acres over the next three years to enable additional economic development on the west end of town.

DOE and UCOR recently completed the final transfer of major utilities, which is another significant step in transitioning the site from federal ownership. In some cases, that process involved performing repairs and upgrades to ensure the community received infrastructure that is up to date with the latest codes and standards. ETPP is now entirely served by a public infrastructure system of water, sewer, electric, and natural gas utilities. Invested landowners and tenants and a growing number of prospective companies are attracted to ETPP because of its existing infrastructure, local workforce development, and a business-friendly environment.

As cleanup nears completion, momentum toward its next chapter is growing as larger businesses announce plans to locate on transferred land at ETPP and other nearby parcels. Triso-X, Kairos Power, and Ultra Safe Nuclear Corp. are the latest companies to seize the potential of locating on former DOE land that offers proximity to robust infrastructure and top industry minds at Oak Ridge National Laboratory and the Y-12 National Security Complex. Together, these companies are investing hundreds of millions of dollars, creating new jobs, and developing technologies that will help generate affordable and abundant energy.

This summer, Kairos Power broke ground on its Hermes low-power demonstration reactor on the footprint of the former K-33 building. This is part of the company's \$100 million investment at the site, and Kairos Power has already applied to construct a second reactor at the site. This new facility, under construction, is the first nonlight-water reactor to be permitted in the United States in more than 50 years.

These developments culminated in the biggest news yet when Governor Bill Lee traveled to Oak Ridge this fall to announce the largest investment in Tennessee's history. Orano USA unveiled a multi-billion-dollar plan to build one of the largest enrichment facilities in North America. The company will build on land DOE is set to transfer for reuse near ETPP. This positions Oak Ridge to become the nation's leader for next generation nuclear. In poetic fashion, the renewed focus on nuclear power happening now is giving new life to the former enrichment site and bringing new growth and opportunities to Oak Ridge again.

National Historic Preservation and Conservation

Historic preservation initiatives at ETPP are honoring the men and women who designed, built, and operated the world's first gaseous diffusion plant at K-25 and the hundreds of facilities and structures that followed.

Today, a 7,500-square-foot K-25 History Center tells the story of this historic production facility with interactive exhibits and more than 250 original artifacts. Adjacent to the K-25 History Center, the footprint of the K-25 building is a destination within the nation's Manhattan Project National Historical Park, and more visitor attractions are on the way.

The U.S. Army Corps of Engineers is currently overseeing construction of the K-25 Viewing Platform. When it's completed next year, the elevated viewing platform will provide a sweeping, panoramic view of the K-25 building's massive 44-acre footprint through 10-foot-tall wraparound glass windows. Multimedia exhibits inside will demonstrate the scale of the site and explain the site's previous operations.

DOE has also set aside nearly 3,500 acres, adjacent to ETPP, as part of the Black Oak Ridge Conservation Easement to provide greater access and opportunities for people to enjoy greenspace initiatives and the outdoors through hiking, biking, and nature watching. These efforts are taking another step forward through a partnership DOE signed with the Tennessee Wildlife Resources Agency. That formalized partnership expands natural resource management on the Oak Ridge Reservation.

Cleanup Ushers in New Chapter

ETPP's transformation is a case study into the positive impact of DOE's environmental cleanup mission. DOE's projects have cleared away the risks associated with aging, deteriorated, and contaminated structures, and they have opened significant acreage for new economic development that benefits the community. DOE has also built facilities that preserve and share the site's important history with future generations, and it has set aside thousands of acres for residents and visitors to enjoy the beautiful East Tennessee landscape. Only through cleanup could Oak Ridge be the birthplace of the nuclear industry and the home of its resurgence.

Thank you, Ben Williams, for insight into the transformation taking place in the west end of Oak Ridge. With the resurgence of nuclear energy interest throughout the nation and the world, the location where the gaseous diffusion of uranium helped start the nuclear age will again help lead the way to nuclear related advancements in reactors, nuclear fuel, and advanced technologies to address our clean energy needs.



East Tennessee Technology Park Heritage Center as it appears looking from the back side above perimeter road showing the site in transition to new opportunities for future generations to come (Courtesy of the Department of Energy)



East Tennessee Technology Park Heritage Center as seen from across highway 58 looking northwest (Courtesy of the Department of Energy)



The Viewing Platform that will give visitors an overview of the K-25 Building footprint. The footprint is part of the Manhattan Project National Historical Park. This latest addition to the historical initiatives at the ETP Heritage Center is scheduled to be completed by May 2025. (Courtesy of the Department of Energy)