Restoring former nuclear weapons production sites offers nearby towns and tribes new opportunities.

BY MINDY BRIDGES

A sk almost anyone and they will have an opinion about the United States’ role in the development and production of nuclear weapons. But no matter how one feels about them, the U.S. government, states and tribes are still, decades after the end of the Cold War, dealing with the environmental aftereffects of their production.

More than 100 sites in 30 states and Puerto Rico have been closed and restored. Only 16 remain, covering less than 300 square miles in 11 states. But many will require some of the most technologically challenging work yet. If current funding trends continue, cleanup activities will carry on until at least 2070 with a price tag of well over $300 billion.

A Cold War Legacy

Following the end of World War II, the federal government expanded nuclear weapons production until, at its peak in the late 1980s, more than 100 sites were involved in developing, producing or testing a total of some 31,000 weapons. At the time, the U.S. focused more on keeping pace with the Soviet Union’s weapons production than on the potential impact the arms race might have on the environment, public safety and government coffers. When the Cold War ended, however, the focus shifted to the extensive environmental cleanup needed.

The U.S. Department of Energy’s Office of Environmental Management is the lead agency responsible for cleaning up the hundreds of contaminated buildings, dozens of square miles of contaminated groundwater, and millions of gallons of radioactive waste at these federal sites, many with national laboratories.

A variety of radioactive, chemical and mixed hazardous waste is stored in hundreds of aging underground tanks. Infrastructure and waste disposal practices during the 1940s left much of the waste concentrated at sites scattered across the nation.

In 1989, 11 states signed the first formal agreements with the federal government to clean up...
sites within their borders. Since then, the Office of Environmental Management has worked with states, territories, tribes and local communities to restore 107 sites, including five large ones—Rocky Flats in Colorado, Fernald and Mound in Ohio, Pinellas in Florida and Weldon Spring in Missouri.

The Federal Facilities Compliance Act of 1992 strengthened the states’ role in ensuring that cleanup standards and milestones were met. And a funding boost in 2008, through the American Recovery and Reinvestment Act, expedited the cleanup efforts at many of these sites. But the work continues.

It’s About Accountability
In recent years, states have taken a strong stance in holding the federal government accountable for its commitments through litigation, fines and other enforcement actions.

The Energy Department, for example, agreed to pay New Mexico $73 million in April 2015 because of two incidents the year before that temporarily halted operations at the Waste Isolation Pilot Plant, known as WIPP, in Carlsbad, New Mexico, the country’s only geologic disposal site for transuranic waste.

The settlement pays for infrastructure and transportation projects that benefit both the Energy Department facilities and the surrounding communities.

WIPP reopened on Jan. 9, not a day too soon for many sites across the country that rely on the giant depository for the safe, secure disposal of their waste.

“A lot of defense-related nuclear waste still remains to be disposed of,” says New Mexico Representative Cathrynn Brown (R). “WIPP will continue serving the nation for many more years to come.”

Milestones Matter
In southeastern Washington, along the Columbia River, the Hanford Site contains a variety of cleanup challenges, including roughly 56 million gallons of high-level nuclear waste in 177 underground storage tanks. The cleanup began in 1989, but since then, some agreed-upon milestones have not been met. Concerns over the delays have led to several lawsuits filed between the U.S. Department of Energy and the state of Washington. Oregon has also joined in litigation over potential damage to the Columbia River.

The most recent round of litigation ended in March 2016 when U.S. District Judge Rosanna Peterson resolved the ongoing lawsuit between the state and the Department of Energy, primarily over
schedules to retrieve and eventually treat Hanford’s tank waste. The Department of Energy wanted to remove most of the scheduled milestones, but the judge ruled milestones were essential and “should be viewed as enforceable legal duties rather than optimal, idealistic goals.”

That decision was a win for the state of Washington. Completion of the treatment facilities, however, was pushed back by nearly 15 years to 2036—a significant delay for a project that has repeatedly foundered.

Representing the state’s 8th District, where Hanford is located, Senator Sharon Brown (R) says the site is one of her top legislative priorities. “It is imperative,” she says, “that all stakeholders work together to move forward with the cleanup of Hanford’s legacy waste.”

Additionally, state and federal governments have worked with at least 26 federally recognized American Indian tribes to better coordinate cleanup efforts. Tribal use of these lands began long before nuclear processing operations were contemplated. At Hanford, for example, Native American technical staff and leaders have worked with the Department of Energy to restore areas of the site with native plants.

Washington Senator John McCoy (D), a member of the Tulalip Tribe and the National Caucus of Native American State Legislators, is sure the tribes will maintain and pass on the history of the area as well. “The tribes know through traditional stories what was there, what it looked like, what plants and animals were there, and the history,” he says.

Working Groups at Work

The success of any cleanup mission depends on timely and meaningful consultations with state, tribal and local governments. For more than 20 years, NCSL has worked with the Department of Energy to provide this on various issues related to the nuclear weapons complex, environmental cleanup and waste transportation.

The State and Tribal Government Working Group brings together elected leaders and policy and technical staff from states and tribes. The group has focused, in recent years, on long-term stewardship, the natural resource damage assessment and restoration process, and tribal issues. NCSL staff offer their administrative skills and policy expertise to the group. Members meet with federal agency officials to receive budget updates, share cleanup concerns, and help ensure Department of Energy facilities are operated and cleaned up in compliance with the law and that tribal rights and interests are protected.

Another group facilitated by NCSL is the Nuclear Legislative Working Group. It is composed of legislators from across the country with interests and experiences in the cleanup of nuclear weapons production sites, the transportation and storage of radioactive wastes, and nuclear energy policies that affect our nation and states.

—Mindy Bridges and Kristine Hartman

“A thousand years from now it will be the tribes that will tell the history.”

Currently, tribal programs monitor natural and cultural resources at sites such as Idaho National Laboratory.

New Missions

After contending with the challenges of cleanup, many local communities have benefited from new economic development opportunities offered at these revamped national laboratories. With the secretive barriers down, many former weapons-building sites have been converted into hubs of wide-ranging research, from biomass development to medical break-
Visit Birthplace of ‘Little Boy’ and ‘Fat Man’

If visiting every national historical park is on your bucket list, don’t miss the Manhattan Project National Historical Park. It includes the areas of three states where secretive operations, called the Manhattan Project, successfully developed the first atomic weapon in the mid-1940s. Still in the early stages of development, the park will span three locations—Los Alamos, New Mexico, where “Little Boy” and “Fat Man,” nicknames for the bombs dropped on Hiroshima and Nagasaki, respectively, were designed and built; Oak Ridge, Tennessee, where uranium was enriched; and Hanford, Washington, where plutonium was produced.

The National Park Service will develop exhibits, tours, and interpretive materials to teach visitors about the history, science, and people behind the creation of the bombs.

“It is going to preserve a part of not only state and local history but also our world history. It will bring tourist traffic and prosperity dollars,” says Tennessee Representative John Ragan (R).

For those who can’t wait to visit these and other restored sites, virtual tours of several are available online and via smartphone apps.

Los Alamos, New Mexico, located about 35 miles northwest of Santa Fe, is home to the national laboratory where the first atomic bomb was constructed. The town has been referred to as “the city that never was” because of its secretive and supposedly temporary mission.

“There is a deep pride and ownership from the local community in the work that LANL [Los Alamos National Laboratory] does and has done; a large portion of the town is employed there,” says New Mexico Representative Stephanie Garcia Richard (D).

But, she says, the site and local community have a complex relationship.

“Responding to anti-nuclear sentiment from the surrounding communities, dealing with the ups and downs of federal funding changes, and confronting the intricacies of contracting work to local northern New Mexico businesses are just some of the challenges posed by hosting this DOE facility,” Garcia Richard says.

Cleanup continues in parts of the Los Alamos site, which currently employs more than 10,000 people and serves as a hub for national security and scientific research.

Native Americans from four surrounding pueblos—Cochiti, Jemez, San Ildefonso and Santa Clara—work with the laboratory and the state of New Mexico on stewardship of the land. They monitor environmental conditions, including air and water quality. The Pueblo de San Ildefonso is the only tribe to share a boundary with a federal facility, and the lands belonging to the pueblo can be seen while standing inside the cleanup areas.

In Tennessee, recent cleanup successes have helped Oak Ridge National Laboratory become an economic driver for the cities of Oak Ridge and Knoxville. The cleanup program achieved one of its greatest milestones in August last year with the demolition of building K-27, which, when built in the 1940s, was the largest facility in the world producing enriched uranium. The building in what is now the East Tennessee Technology Park was a U-shaped complex that covered 44 acres under one roof and spanned a mile in length.

With the surrounding area’s successful restoration, the technology park has taken on a new life. More than 1,000 acres and 332,000 square feet of building space have been identified for transfer and leases to the private sector and local government.

Tennessee Representative John Ragan (R) serves the area and is quick to point out the potential at the site and the ways it could benefit his constituents. The demolition of K-27 opens the door for economic development while decreasing the environmental risks and safety concerns at the site.

Parks, Wildlife and History

The Fernald Preserve in Ohio and Welton Spring in Missouri both are home to nature preserves and provide opportunities to learn about the history of the sites.

Fernald, outside of Cincinnati, has a visitor center and green space, including wetlands, 7 miles of public nature trails and wildlife viewing areas. Between 1951 and 1989, the site produced high-purity uranium metal products—the initial step in producing a nuclear weapon.

Fernald opened to the public in 2008 after the cleanup was completed. With
Keeping an eye on how best to provide innovative solutions along with long-term stewardship for this Cold War legacy.

Another successful example of ongoing community engagement is Weldon Spring, located 30 miles outside St. Louis. The site offers public trails and an interpretive center to share information about the historical role the site played in the production of U.S. Army explosives in the 1940s and the processing of uranium ore in the 1950s and '60s. (It was also readied in the 1960s to produce the defoliant Agent Orange, but never actually did.)

The site has a 45-acre disposal cell engineered to isolate and manage waste for 1,000 years. The state and the federal government continue to monitor groundwater and the effectiveness of the cleanup.

Getting the Job Done

As the transition to a new administration continues, the U.S. Department of Energy is keeping an eye on how best to provide innovative solutions along with long-term stewardship for this Cold War legacy.

Deteriorating buildings and other structures that were once assets over time can easily become liabilities.

“We don’t get younger year to year,” former Office of Environmental Management Assistant Secretary Monica Regalbuto said in an interview at the end of last year on the status of the cleanup sites.

“The state of infrastructure and maintenance programs can have a direct impact on our ability to perform our cleanup mission,” she said, adding that providing predictable and adequate cleanup funds now could reduce current risks and even future costs.

The remaining sites need to be maintained, safeguarded and eventually remediated, all of which are likely to cost less if addressed sooner rather than later.

The federal budget for the environmental cleanup work peaked at $7.3 billion in fiscal year 2007, and annual funding levels have remained flat since, at around $6 billion. The agency is looking to do more with less and take advantage of new technology to make up for budget shortfalls.

The agency reported saving more than $100 million in FY 2016 from various efforts across the sites. Reductions in staff and consolidated contracts have contributed to this success.

The Office of River Protection at Hanford used new wireless technology to decrease work hours needed to manage the tank waste. The Porstmouth and Paducah Project Office, which works across the Kentucky and Ohio state lines, adjusted power usage and completed maintenance processes to reduce costs.

The cost savings can be used to fund additional work that keeps projects ahead of schedule and below budget. Officials at the Savannah River Site in South Carolina, for example, celebrated completing the construction last year of a new waste processing facility that came in $60 million under budget and eight months ahead of schedule due to contractor efficiencies. According to Jack Craig, the site manager, the facility “will allow us to process waste at 10 times the rate we are processing it today, accelerating the cleanup.”

Officials at other sites are watching and learning from each other, strengthening partnerships and building relationships with individual labs to take advantage of what Mark Gilbertson, the new director of laboratory policy in the Office of Environmental Management, calls “the synergies of a larger network” supporting the agency’s program.

This new partnership with the national laboratory system expands technology research and offers exciting opportunities to use robots and other advances to make progress and promote worker safety.

Cleaning up dangerous substances at these sites is a complicated, expensive process. But many sites have eventually taken on new lives, providing opportunities to local and tribal communities. With ongoing technological improvements, involvement from the local communities, and steady and predictable funding from the federal government, the final 16 projects will be completed.

Once cleanup is achieved, the surrounding communities will have a role in determining what comes next. And that’s a win-win by any measure.