

HISTORY COMMENTARY

The Hanford Site: Washington's Largest Battlefield and Its Lessons

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EDITOR'S NOTE

The text of this essay was presented as the Curtiss Hill Lecture at the Washington State Historical Society's Annual Meeting in June 2001.

Twelve years transpired between my first lecture at the Washington State Historical Society's Annual Meeting in Pullman in the spring of 1989 and my presentation as the Curtiss Hill lecturer at the Society's 2001 Annual Meeting in Tacoma. At the time of the first lecture, I was just beginning my research into the history of the Hanford Site. Now my research is well along, but there is still much to be discovered and debated in the field of Hanford's history. In 1989 the Hanford Site and its historical records were still largely secret. By 2001 the site was quite open. Over 2 million pages of Hanford historical records were declassified in the intervening years, so that there is now more information available to the public about Hanford than about any other nuclear defense facility in the world. In 1989 Hanford's waste was a topic of shame—and outright denial in some circles—as the facts about the waste legacy came to light. In 2001 the vast quantities of nuclear and chemical wastes that lie at Hanford are openly admitted and discussed, and waste cleanup dollars are a vital part of eastern Washington's economy.

Hanford's Enduring Significance

However, many things have not changed since 1989. Hanford remains one of the most important stories of the 20th century. In a poll of journalists and scholars taken as the 20th century ended, the atomic bombings of Hiroshima and Nagasaki were voted as the most significant events of that century. That finding, conducted by the Newseum, a news and history museum in Arlington, Virginia, clearly placed the Hanford Site at the epicenter, or "ground zero," of 20th-century history because it is where the plutonium core of the Nagasaki weapon was manufactured. For this reason and many others, Hanford, the first, most productive, and most costly plutonium production site in the world, can be expected to retain its regional, national, and international significance for as long as it is practical for humans to imagine.

At Hanford the bellicose speeches of the Cold War were made real in concrete, steel, lead, uranium, and men's and women's daily lives. I maintain that one cannot understand the 20th-century unless one understands the Cold War, and one cannot understand the Cold War without knowing the Hanford Site. The battle that was fought at the Hanford Engineer Works (HEW—the World War II name for the Hanford Site) caused the world to turn upside down and ushered in change as fundamental in American life as that which occurred on another battlefield when "the world turned upside down"—the battlefield at Yorktown, Virginia, where Lord Cornwallis surrendered to General George Washington.

Pulitzer Prize-winning journalist Charles Krauthammer of the *Washington Post* described a fundamental enigma of the Cold War in his essay, "The End of Heroism." The Cold War, he said, was "Our war, the war we hardly recognize...the long twilight struggle that ended as no other great war in history—with utter silence." But Hanford, America's front line in the Cold War, is not silent. Echoes of the Cold War can be heard in the busy machinery of cleanup, and in the voices of the region's people debating its heritage.

In Washington real human beings with no choice but to live their lives today must do something with Hanford. For one thing, we must find practical ways to isolate, contain, repackage, reposition, and keep track of the enormous load of nuclear waste and special nuclear materials at the site today. Presently, noisy and contentious public dialogues engage over how to conduct the largest waste "cleanup" (containment) project ever undertaken by mankind, how to prioritize and spend the available dollars, and how to provide long-term gain with a seat at a bargaining table dominated by short-term interests and incremental funding.

All of us rejoice that the pall of fear of nuclear holocaust and the crushing burden of debt caused by heavy arms production throughout the lifetime of a majority of living Americans have been lifted. At the same time, Americans working at, studying, funding, or visiting Hanford struggle to make sense of its history.

At this place of dumbfounding contrasts, most of the real threats are silent and invisible, and the only sounds heard for hundreds of square miles are bird songs, the rustle of dry desert grasses, and the whooshing flow of a huge and rapid river. Yet the immediacy of history, the demand to participate and be heard, the fears and hopes expressed, and the constant press of those coming to hear the Hanford story bring a cacophony of voices and visitors to this remote place. A silent war in a silent place? Hanford is isolated and deceptively quiet, but it stands at the very center of who we are as Americans, who we want to be, and how we want the world to know us.

End of the Cold War

When the Cold War ended in 1991, it left the Hanford Site temporarily confused and reeling. Missions central to the site's identity ended in rapid succession. The Department of Energy (DOE), Hanford's controlling federal agency, issued formal deactivation orders to the mighty PUREX (plutonium-uranium extraction) Plant in 1992 and to N-Reactor in 1995.

Other key Hanford defense production facilities, standing as stark, gray reminders of past defense imperatives, also closed. The passage of these old workhorse facilities into obsolescence was met with a wide range of emotions, depending on one's perspective. Workers saluted and cried at ceremonies marking the end of the PUREX Deactivation Project in June 1997, recalling a lifetime of camaraderie and proud service to the "Gray Lady." At the end of the B-Plant Deactivation Project, Portland's *Oregonian* wrote: "Although it [B-Plant] fulfilled its purpose of recovering plutonium from reactor fuel, it wreaked havoc with the environment at Hanford, releasing radioactive gases into the air and flushing contaminated process water directly onto the ground, creating open atomic ponds."

Spent Fuel Project

On December 7, 2000, the Hanford Site again made history when the first container of spent (irradiated) nuclear fuel was removed from the K-West Basin less than a quarter mile from the Columbia River. Workers, dignitaries, and media gathered in the chill darkness applauded and

cheered as the huge steel container emerged from the old basin where the dangerous fuel had stewed and languished for a quarter century.

The event was hailed as a down payment to the stakeholders, taxpayers, residents, and environment of the magnificent region on the debt incurred when the Manhattan Project seized the land and river for nuclear production nearly 60 years ago.

Although spent fuel is dried and stored at nuclear power plants in many parts of the world, the work being done in Hanford's Spent Nuclear Fuel (SNF) Project had never been attempted anywhere before. Fuel configuration, condition, and location made this job one of the toughest and riskiest in the cleanup universe. However, since the start of fuel removal in the SNF Project, many additional containers have been removed. Although the goal of loading and removing all 400 containers won't be reached until mid 2004, the unique and daring project demonstrates that some endeavors at Hanford are executed with excellence.

Storage Tank Issues Loom

Other big cleanup projects, such as Hanford's high-level waste tanks program has drawn the ire of many. As recently as October 2000, Washington's attorney general, Christine Gregoire, stated: "Unless we get a judge involved, we're not getting the kind of cooperation we need.... You [DOE] spend a lot of money. You spend a lot of time. You don't clean up squat."

The facts were that by mid 2001 a cleanup division aimed at remediating Hanford's underground, high-level tank waste had existed for ten years, it had spent approximately \$3.5 billion over that time period, it had employed nearly 2,000 people per year, and yet no tank waste curies had left the Hanford Site by any other mechanism than natural radioactive decay.

The "baby-sitting" aspect of tank waste work was frustrating to all involved, including Hanford workers and Hanford watchers. Just keeping the tanks safe each day, monitoring, repairing, ventilating, and sampling were not enough for most people concerned because these activities followed a path that led nowhere. Viable plans for dealing with tank waste had been produced at Hanford since 1958. In all that time, the site had generated file drawers full of plans that ended up being underfunded, scrapped due to policy changes, lost in the shuffle of contractor and personnel changes, bypassed because a more technological solution beckoned just over the horizon, or stillborn for other reasons.

Today, work is underway on a ten-year, \$4 billion contract signed in late 2000 to construct and operate an initial tank waste vitrification facility at Hanford. The effort, soon to enter the construction phase, requires that the first wastes be vitrified in 2007. Treating the entire tank waste inventory, obviously, will require a very long time.

Self-Portrait of Hanford's World War II Builders

As Washingtonians and others debated Hanford's cleanup and Hanford's history in the late 20th century, the old arsenal site proved once again that its extensive yet elusive historical record is capable of yielding new information. In a discovery of major importance, a nearly two-hour silent film depicting the original World War II construction of HEW was found in a personal collection on the East Coast.

Entitled *War Construction in the Desert*, the film was dated by historians as having been completed about January/February 1945. As such, it portrayed an unabashed pride in the hectic pace of accomplishments during the time when HEW was engaged almost wholly in construction

activities, and none of the ambivalence that would come to some participants later, after the site's fruits had been deployed at Alamogordo and Nagasaki.

To historians, however, the style and sequence of presentation in the old film are as important as the content—they tell us what the HEW builders thought of themselves and how they wished to be seen by posterity.

In fact, close-up views of the workers and machinery shown in the film do inspire admiration for the hard work and high level of skill deployed at HEW. Without computers to guide their tools, it is beyond remarkable that Hanford's builders achieved such precise standards. But it is the optimism, pride, sureness of purpose, and sweeping, "go for the goal post" energy that provide the most important aspects of the knowledge we gain from this film. To Hanford's early government workers, this home front of science, secrecy, and battle was not unlike the battlefield challenges of World War II with its stark necessities, risk mentality, and vast unknowns.

Watching this film today is almost like having the chance to watch a Renaissance builder or artist at work on a cathedral. One is struck by how very old the Hanford Site really is. The printed titles and sentences interspersed between segments of film convey a 1920s vaudevillian aura. The personalities of the HEW also come alive in *War Construction in the Desert*, in contrast to their sometimes wooden looks in World War II still photos. Customs of the era, now relics of a bygone culture, are evident in the film, including segregated work crews and an all-black tavern, men in Fedora hats, references to women workers as "girls," a total absence of seat belts, ever-present cigarettes, and before-meal prayer in the day nursery.

The final scenes of the film, however, are the most astonishing in their power to evoke the profound change in world history that occurred as a result of HEW's pioneering work. The last minutes of the film deal with the final construction and preparations for operating B-Reactor and T-Plant, the two facilities that actually produced the plutonium core of the Trinity and Nagasaki weapons. Huge equipment that would form the "guts" of T-Plant, mocked up and built in a nearby construction shop, is draped in heavy black material by workers and guided onto a flatbed railcar for the journey of less than a half mile to T-Plant.

As the tall, top-secret load inches along the track, present-day watchers are awed by the knowledge that these Hanford workers were about to change the world. Nine months later, the plutonium they produced was deployed at Nagasaki and ended World War II, a war that had lasted 15 years in some parts of the globe, involved approximately 50 nations, and cost over 50 million lives. Were these Americans egocentric? Bullying? Good? Bad? Right? Wrong? Whatever the spectrum of answers, it is clear that Hanford still has the power to engage the 21st century in daunting debates.

Why Every American Should Study Hanford

In my opinion, every American, and certainly every Washingtonian, should see Hanford. First, all Americans (even Americans born this morning) will pay a portion of their tax dollars to "clean up" and contain Hanford's wastes and special nuclear materials and then to safeguard and monitor these materials for as long as they live. Second, the safety of the Columbia River may be threatened if Hanford's cleanup programs are not executed well and in a timely manner. Third, the Hanford story is rich in lessons for the 21st century. Lessons abound about information management, public involvement, inclusion (or exclusion) of lay persons in debates about new technologies, and the roles of local, state, and federal authority. These lessons were lived and

learned at Hanford, but they are applicable to debates about genetic engineering, privacy in the electronic age, and other key 21st-century issues. For these reasons, and since it is not feasible for every American to visit the Hanford Site, I call for expanded study, research, teaching, and writing about Hanford by every educational institution in our state.

Michele Gerber holds a Ph.D. with highest honors in history from the State University of New York, Albany. She served on the National Academy of Sciences' Committee on Declassification, and has consulted to the U. S. Centers for Disease Control. She is now a member of the Hanford Reach National Monument Federal Advisory Committee and works in information and communication for Fluor Hanford, Inc. Portions of this commentary were excerpted from the new epilogue in the third edition of Gerber's book, On the Home Front, The Cold War Legacy of the Hanford Nuclear Site (Lincoln: University of Nebraska Press, 2001).