

Remembering our atomic past

Proposed museums will help preserve the West's nuclear history

HANFORD SITE, WASHINGTON

From outside, the B Reactor doesn't look like much. If it sat on an urban boulevard, passing drivers might assume it was just an old warehouse. But this pile of concrete blocks, here beside the Columbia River, is the keystone of the Hanford Nuclear Reservation — the first full-scale nuclear reactor in the world. The B Reactor made the plutonium for the Trinity nuclear test on July 16, 1945. And it fueled Fat Man, the bomb that flattened Nagasaki, Japan, three weeks later.

Before the site stopped processing plutonium in the late '80s, Hanford's nine nuclear reactors produced enough for more than 13,000 warheads. Today, though, Hanford's statistics are all about cleanup: hundreds of buildings demolished, 53 million gallons of liquid waste yet to be treated, and a price tag around \$50 billion. The job is expected to take until at least 2040.

Five of Hanford's reactors have already been "cocooned" — encased in steel or cement so they now look like giant Lego blocks. They will sit this way for up to 75 years while their radioactive hot spots cool down. Eventually, they'll be demolished. But B Reactor might have a different fate: Tri-City officials, former Hanford workers and preservation advocates would like to see it preserved as a public museum.

"This was the first and the biggest nuclear weapons production site in U.S. history. The story should

be told here where it was lived," says Michelle Gerber, the official site historian, who works for a Department of Energy contractor but chairs the Coalition for B Reactor Preservation as a private citizen.

A thousand miles southeast, another museum is planned to commemorate the former Rocky Flats plant in Jefferson county, Colo., where technicians turned Hanford plutonium into nuclear bomb triggers from 1952 through 1989. Now, most of the remediated site is a wildlife refuge. Museum supporters have collected dozens of oral histories and site artifacts, and a donor has provided 1.4 acres near where the plant stood. Last December, Colorado Sen. Wayne Allard, R, helped the group secure \$492,000 in federal funds to jumpstart a capital campaign and develop exhibits.

This project is all the more important because the plant is gone, says Broomfield County environmental coordinator Shirley Garcia, who worked at Rocky Flats for 15 years. "I have trouble remembering where buildings stood when I go out to the site now," she says. "We need the museum to create an institutional memory of what was there."

For decades, few people knew much about the West's nuclear sites; employees were ordered not to tell their families which building they worked in or what they did. Dangerous incidents were covered up in the name of national security, including the Green Run at Hanford — a secret military exper-



iment in 1949 that put high levels of radioactive iodine into the air — as well as major fires at Rocky Flats that released plutonium. Today, however, much important information about nuclear materials production and environmental contamination has been declassified. Now it's finally possible to tell more complete stories about our nuclear past and to document these sites' impacts on the West and the rest of the nation.

THE WEST ALREADY HAS Some atomic memorials, including Albuquerque's National Atomic Museum and the Atomic Testing Museum in Las Vegas. For the most part, these sites treat nuclear weapons as historic accomplishments that helped the U.S. win the Cold War. Environmental contamination and health threats to workers and local communities get scant attention, although the Atomic Testing Museum added information on "downwinders" sickened by fallout from atmospheric tests after some of them picketed its opening in 2005.

"The health and environmental impacts of nuclear weapons production are largely missing from these museums. We need to make sure those issues aren't forgotten," says Stan Norris, a senior analyst with the Natural Resources Defense Council who has written extensively about U.S. nuclear weapons production. "These are valiant efforts to rescue a history that could quickly be forgotten."

Unquestionably, the B Reactor is historic. Constructed in just 11 months, it was a million times more powerful than the test version built in 1942 by Nobel laureate Enrico Fermi in an underground squash court at the University of Chicago. The reactor was shut down in 1968, and its building has since been listed on the National Register of Historic Places and recommended for national historic landmark status. Now, the Department of Energy and the Park Service are studying whether the building can be preserved and made more accessible to visitors, with decisions expected later this year.

Currently, the reactor is open a few days each year for public and media tours. Radiation safety technicians escort all visitors, and some hot zones are off-limits. The tour winds past the reactor's front face, where controllers inserted fuel rods into the 36-foot-high graphite pile, through exhaust-fan rooms and past pipes that circulated 30,000 gallons of river water per minute through the reactor to cool it. The control room's mint-green metal panels are studded with dials and gauges that tracked reactor activity. Visitors can sit at the desk where Fermi, code-named "Mr. Farmer" to keep his presence a secret, supervised start-up operations in 1944. Exhibits prepared by the Atomic Heritage Foundation, a nonprofit that lobbies to preserve historic nuclear sites, include video interviews with former Hanford workers.



COURTESY ATOMIC HERITAGE FND., LEFT; PETER MENZEL, DRR.NET, ABOVE

Because Hanford has been an economic engine for Washington's Tri-City region through 60 years of weapons production and cleanup, some observers worry that a museum will turn the site into a triumphal shrine. But Gerber says that won't happen. "We're not trying to preserve the reactor because it was great. We're doing this because it was significant," she says. "Hanford's cleanup is an integral part of the story, because you can see it going on right outside the door of the B Reactor. You have to talk about the waste practices that are part of this site's history."

Supporters see the B Reactor museum as an adjunct to a planned visitor's center in Richland. The center, slated to open in 2010, will

allocate about a quarter of its exhibition space to Hanford and the impacts of nuclear weapons production. This means that the B Reactor museum won't have to tell the entire Hanford story. "We've focused on Manhattan Project history because that legacy is most at risk. Veterans are dying, and other buildings at Hanford are coming down," says Atomic Heritage Foundation president Cindy Kelly. "But there's a lot that could be done on the history of the Cold War."

AS ITS NAME INDICATES, the Rocky Flats Cold War Museum in Colorado will paint a broader picture. Board members say it will address the site's history, scientific accomplishments, economic impact, environmental contamination and controversies. Some questions, such as how many workers got sick on the job and should be compensated, are far from settled.

Project organizers include Arvada city officials, former site workers, and representatives from groups like the Rocky Mountain Peace and Justice Center, which held protests outside of Rocky Flats in the 1970s and '80s. "We've always been dedicated to telling the full story of Rocky Flats," says board member Kim Grant, Arvada's grants administrator.

Beyond its military impact, Rocky Flats is still relevant to the Denver area. "(The town of) Broomfield is down-gradient from Rocky Flats," says Broomfield County's Shirley Garcia. "DOE had to buy our community a new drinking water source as part of the cleanup. The communities around us need to be constantly reminded that there's plutonium in the ground there and that it will have to be monitored for thousands of years." The museum can also help

educate the families of former workers about what their parents or spouses did on the job — critical knowledge if those site veterans became ill or died as a result of their work. Many former workers seeking federal compensation are still trying to document how the jobs they did decades ago exposed them to radiation and toxic materials like beryllium and asbestos.

"I see a lot of widows at meetings who are still trying to get benefits after their husbands have passed away, and trying to prove they died because they worked at Rocky Flats," says Garcia. "People who worked there thought they were serving their country and would be compensated. Now some of those families are losing their homes. We need to tell their stories."

IF THE HANFORD TOURS are any indicator, plenty of people are interested in atomic history: The 2,000 spaces available this year filled up 18 hours after online registration opened. Perhaps visitors want to connect the looming abstraction of nuclear war to real objects and places — to see weapons that can make cities disappear, and understand the part that Americans play in that apocalyptic supply chain.

"The Cold War was predicated on the idea that war would never be fought, so we don't have battlefields and artifacts as we do from the Civil War," says Grant. "Much of this stuff was off-limits, behind fences or buried in the ground. But if you look, it's all over the place in the West. It's not being preserved or commemorated very well, so we have a kind of amnesia about it."

Now, though, 20 years after the bomb-building ceased, health and environmental impacts at Hanford and Rocky Flats are well-documented. "It's going to be hard to tell a

story about those places that's not open to attack and ridicule if it's partial. The complications at these sites aren't exactly secret any more," says Stanford University historian Richard White, who, like Norris, would like to see more comprehensive atomic memorials.

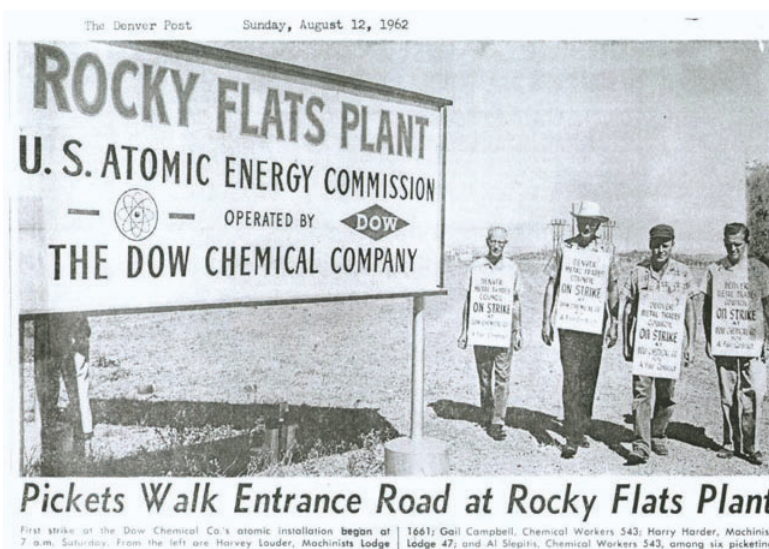
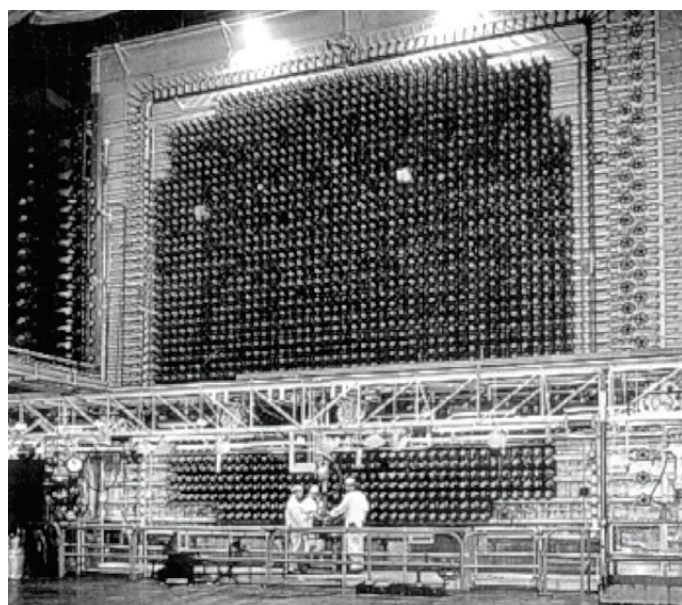
What other issues should these proposed museums address? First, says White, they should describe how the sites' missions evolved as the Cold War played out beyond the urgency of the war years. Second, they should tell the stories of the people who were displaced. (At Hanford, for example, more than 1,500 settlers were moved off their land, and Native Americans were denied access to the Columbia for fishing.) "A few years ago, people would have tried to eradicate leftovers from the past that were considered distasteful and make things pristine, the way the U.S. did when we rebuilt Berlin," White says. "This is much better. Buildings provide a physical presence."

There also are positive stories to be told, commemorating technical accomplishments and teamwork under dangerous conditions. And the debates are likely to continue; at Rocky Flats, for example, some critics say cleanup was inadequate and the wildlife refuge is not safe for public use. Museum organizers will never lack for material. "It's challenging to weigh different parts of the story and consider how much attention to give each one," says Grant. "These stories are still going on."

BY JENNIFER WEEKS

Jennifer Weeks is a freelance environmental writer in Watertown, Massachusetts.

To learn about another aspect of the West's nuclear legacy, see page 5.



DOE PHOTO COURTESY WASHINGTON CLOSURE HANFORD, LEFT; ROCKY FLATS COLD WAR MUSEUM, ABOVE

Relics from a nuclear past (pictured clockwise from upper left): Art from the nose of a B29 bomber; a plaster Robert Oppenheimer, frozen in time watching a loop video of the mushroom clouds of atomic bomb tests at the Bradbury Science Center of the Los Alamos National Lab; early news coverage of Rocky Flats; workers and the B Reactor at Hanford, the world's first full-scale nuclear reactor.