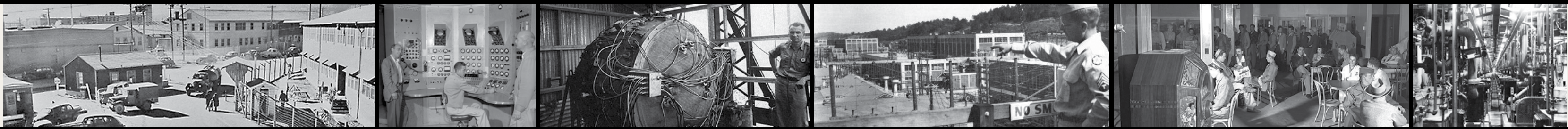


THE MANHATTAN PROJECT

NATIONAL HISTORICAL PARK

National Park Service
U.S. Department of the Interior



MANHATTAN PROJECT NATIONAL HISTORICAL PARK

The Manhattan Project National Historical Park is one of the nation’s newest national parks. Established in November 2015, the park preserves portions of the World War II-era sites where the United States developed the world’s first atomic weapons. This unique park, managed in partnership by the National Park Service and the Department of Energy, will provide visitors the opportunity to walk in the footsteps of J. Robert Oppenheimer at Los Alamos, New Mexico; visit Hanford, Washington, to stand face to face with the nuclear reactor that produced the material for the first atomic test; and learn about the dedication of the Calutron Girls in Oak Ridge, Tennessee, who helped the United States win the race against Nazi Germany to develop an atomic bomb. The Manhattan Project and its legacy is a complex story. It’s the story of more than 600,000 Americans leaving their homes and families to work on a project they were told was vital to the war effort. It’s the story of generals, physicists, chemists, mathematicians, and engineers pushing and broadening the limits of human knowledge and technological achievement in ways never before imagined. It is also the story of the death and destruction associated with World War II, and a new weapon capable of unimaginable levels of devastation. A visit to the Manhattan Project National Historical Park provides an opportunity to view the sites that helped the United States end World War II and challenges us to think about how the world has changed with the dawn of the nuclear age.

THE MANHATTAN PROJECT

The Manhattan Project was an unprecedented, top-secret program implemented in the United States during World War II to design and build an atomic bomb. The discovery of nuclear fission in Germany suggested the possibility of a nuclear chain reaction with the potential release of enormous amounts of energy. Concerned, Leo Szilard prompted Albert Einstein in August 1939 to send a letter to President Franklin

D. Roosevelt, warning that an “extremely powerful bomb” might be constructed. Fearing ongoing research and development by Nazi Germany, Roosevelt initiated federal funding for uranium research.

By 1942, with the United States at war, officials concluded that an atomic bomb could be designed, built, and used in time to influence the outcome of the war. To accomplish this task, the US Army Corps of Engineers established the Manhattan Engineer District, headed by Brigadier General Leslie Groves. This effort, combining military, scientific, and industrial resources and involving hundreds of thousands of workers at many sites across the country, was largely kept secret for the duration of the project.

Scientists theorized there were two potential paths to a bomb using uranium-235, which comprises about one percent of naturally occurring uranium, or the newly discovered element plutonium, which could be created from a controlled chain reaction with uranium. Both paths required the use of expensive and unproven processes and success was not guaranteed. As a result, the decision was made to move forward with both paths. For the uranium bomb, a massive industrial complex was built at Oak Ridge, Tennessee, to pursue the three separate technologies to enrich uranium at the same time. A pilot reactor and chemical separation plant were also constructed at Oak Ridge to test the plutonium production process. For full scale plutonium production, a second enormous industrial complex was built at Hanford, Washington. Workers built and operated huge reactors, chemical separations plants, and fuel fabrication and research facilities. Despite the speed with which the facilities were engineered and built, production at both sites was slow and difficult. It was not until mid-1945 that sufficient amounts of uranium-235 and plutonium were available for construction of the first bombs.

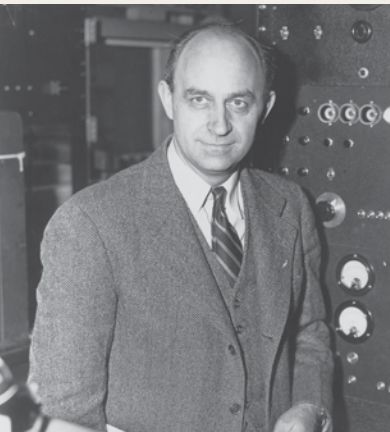
Building the bombs was not an easy task; it required extensive experimentation and precise calculations to obtain the optimum specifications. In early 1943, General Groves set up a bomb design and development laboratory, with some of the world’s foremost scientists under the leadership of J. Robert Oppenheimer, at the isolated Los Alamos site in northern New Mexico. The uranium bomb used a fairly straightforward gun method for creating a critical mass and nuclear explosion. However, in 1944, scientists determined that the gun method would not work for plutonium, and they turned to the theoretical and complex implosion method. Uncertain it would work, a plutonium device was tested at the Trinity site in southern New Mexico on July 16, 1945.

As the project moved closer to the use of the first atomic bomb, ethical questions arose in the minds of some who understood the project’s intent; however, scientists and politicians were primarily concerned with ending the war as quickly as possible. With Germany out of the war, the first uranium bomb was dropped on Hiroshima, Japan, on August 6, 1945. When Japan did not surrender, a plutonium bomb was dropped on Nagasaki, Japan, on August 9. On August 14, Japan announced its surrender and World War II ended.

The Manhattan Project is a highly significant chapter in United States history. It ushered in the nuclear age, determined how the next war, the Cold War, would be fought, and served as the model for the remarkable achievements of American “big science” during the second half of the twentieth century. The Manhattan Project also raised ethical and moral questions among scientists and citizens alike—questions that continue to this day.



Y-12 Oak Ridge, TN



Enrico Fermi



J. Robert Oppenheimer and
Brigadier General Leslie Groves



Gun Site, Los Alamos, NM



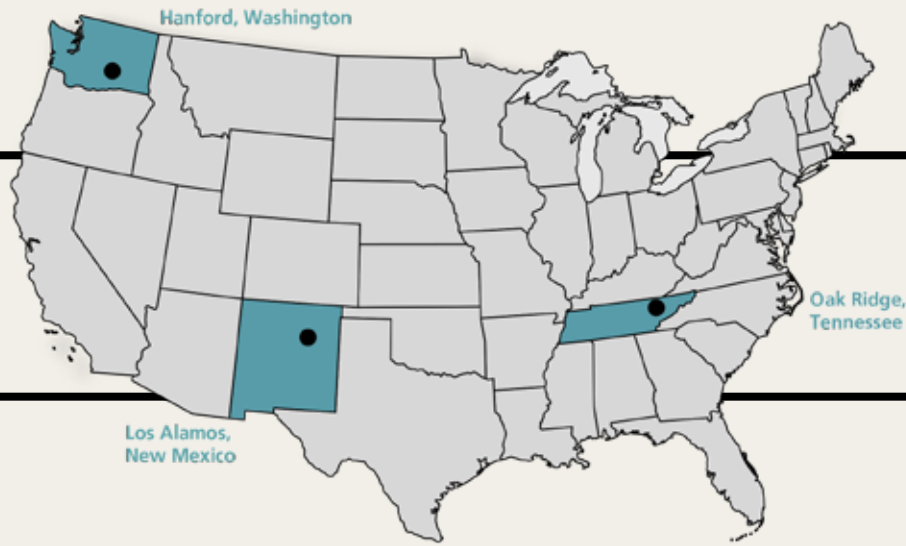
¾ inch Bronze Commemorative Pin
made by Whitehead & Hoag Co. and
issued for service on the project.

“The Atomic Age began at exactly 5:30 Mountain War Time on the morning of July 16, 1945, on a stretch of semi-desert land about 50 airline miles from Alamogordo, New Mexico. And just at that instance there rose from the bowels of the earth a light not of this world, the light of many suns in one.”

Journalist William L. Laurence, New York Times, September 26, 1945

“In answer to the question, ‘Was the development of the atomic bomb by the United States necessary?’ I reply unequivocally, ‘Yes.’ To the question, ‘Is atomic energy a force for good or for evil?’ I can only say, ‘As mankind wills it.’”

- Brigadier General Leslie Groves



A PARTNERSHIP EFFORT

Manhattan Project National Historical Park is a partnership park. The National Park Service is responsible for administration, interpretation, and education at the three sites and will provide technical assistance to resource preservation efforts. The Department of Energy will continue to have responsibility for management, operations, maintenance, and historic preservation of the historic Manhattan Project sites now under their jurisdiction. Other agencies, communities, organizations, and associated tribes may also become involved to tell the full story of the Manhattan Project.

Los Alamos, New Mexico

Located on a remote mesa in New Mexico, more than 6,000 scientists and support personnel worked to design and build the atomic bombs. The park currently includes three areas at Los Alamos. Gun Site, which includes three bunkered buildings (TA-8-1, TA-8-2, and TA-8-3), and a portable guard shack (TA-8-172). These buildings were associated with the design of the “Little Boy” bomb. V-Site includes buildings TA-16-516 and TA-16-517, which were used by laboratory personnel to assemble components of the Trinity device in July 1945. Pajarito Site includes the Slotin Building (TA-18-1), the Battleship Bunker (TA-18-2), and the Pond Cabin (TA-18-29). Pajarito Site was used during the war for plutonium chemistry research and later became the main site for critical assembly work at Los Alamos after the war.



Pond Cabin, Los Alamos, NM

Los Alamos • New Mexico

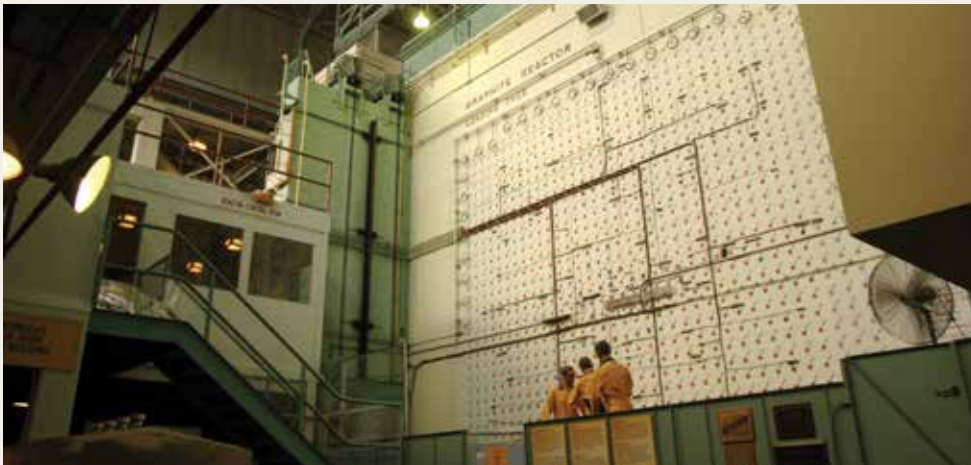


VISITING THE PARK

A visit to the Manhattan Project National Historical Park will be different from a visit to many other national parks. Many of the properties included in the park are located in areas that are being cleaned up or are still active nuclear facilities. Because of safety and security concerns some facilities may not be immediately accessible and others may only accessible on organized bus tours. The National Park Service and the Department of Energy are working together to safely expand access to the facilities included in the park. We are also working with partners in local communities and from around the world to tell the complete story of the Manhattan Project and its legacy. Additional background on the Manhattan Project can be found at: <http://energy.gov/manhattan>. To find out more about how to visit the park and what tours are available please visit: www.nps.gov/mapr

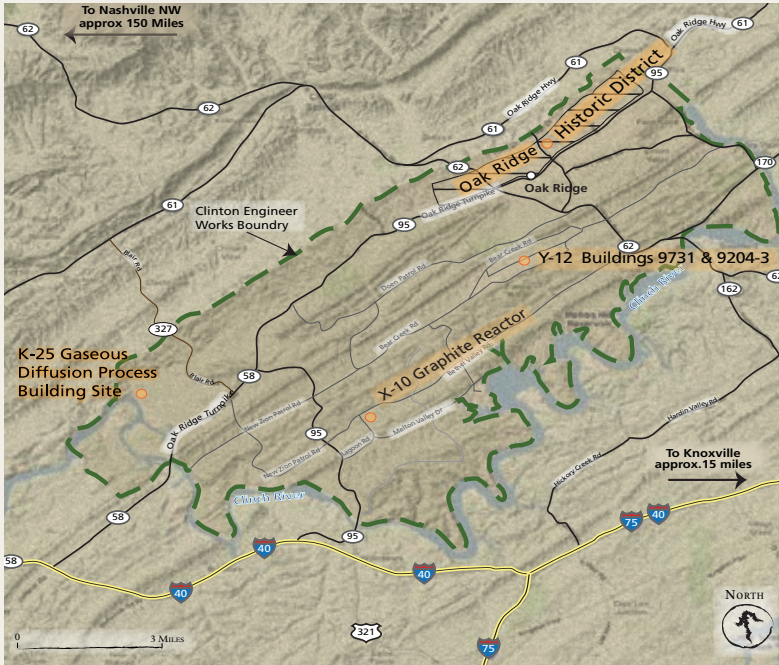
Oak Ridge, Tennessee

The Clinton Engineer Works, which became the Oak Ridge Reservation, was the administrative and military headquarters for the Manhattan Project and home to more than 75,000 people who built and operated the city and industrial complex in the hills of East Tennessee. The Oak Ridge Reservation included three parallel industrial processes for uranium enrichment and experimental plutonium production. At Oak Ridge, the park includes the X-10 Graphite Reactor National Historic Landmark, a pilot nuclear reactor which produced small quantities of plutonium; Buildings 9731 and 9204-3 at the Y-12 complex, home to the electromagnetic separation process for uranium enrichment; and the site of the K-25 Building, where gaseous diffusion uranium enrichment technology was pioneered. Buildings 9731, 9204-3 and K-25 together enriched a portion of the material for the uranium bomb.



X-10 Graphite Reactor, Oak Ridge, TN

Oak Ridge • Tennessee



INITIAL PROPERTIES TO BE INCLUDED IN MPNHP

The Manhattan Project National Historical Park is composed of the three principal locations where work was completed as part of the Manhattan Project: Oak Ridge, Tennessee; Hanford, Washington; and Los Alamos, New Mexico. Each site performed a unique and critical role in the success of the project and today plays an important part in preserving the Manhattan Project story. The National Park Service plans to have a presence at all three of these locations.

Hanford, Washington

The Hanford Engineer Works was built to create large quantities of plutonium at a roughly 600-square-mile site along the Columbia River in Washington State. More than 51,000 workers at Hanford constructed and operated a massive industrial complex to fabricate, test, and irradiate uranium fuel and chemically separate out plutonium. The Hanford landscape is also representative of one of the first acts of the Manhattan Project, the condemnation of private property and eviction of homeowners and American Indian tribes to clear the way for the top-secret work. At Hanford the park includes: the B Reactor National Historic Landmark, which produced the material for the Trinity test and plutonium bomb; the Hanford High School in the Town of Hanford and Hanford Construction Camp Historic District; Bruggemann’s Agricultural Warehouse Complex, White Bluffs Bank, and Hanford Irrigation District Pump House, which together provide a glimpse into the history of the Hanford area before the arrival of the Manhattan Project. The T Plant, a chemical separations canyon, will not be in the Park initially, but visitors will learn about its vital role at other locations in the park.



B Reactor, Hanford, WA

Hanford • Washington

