

## **The Manhattan Project: A Brief Summary**

Los Alamos has a long and varied history. However, its uniqueness—and what it is best known for—comes from its role as the site for the development of the world's first atomic bombs.

Los Alamos Laboratory, known as Project Y, was conceived during the early part of World War II. The United States wanted to build an atomic explosive to counter the threat posed by the German nuclear development program. The term Manhattan Project came about because the program began under the Manhattan Engineering District of the War Department.

Gen. Leslie Groves, military head of the project, and Robert Oppenheimer, scientific director, wanted the top-secret project to take place in an area that was isolated yet still accessible, a place with an adequate water supply, a readily available labor force, and a moderate climate. At the same time, Oppenheimer envisioned a laboratory with a beautiful setting that would inspire his scientists. He wanted to bring researchers that were scattered at various universities across the country together to discuss all aspects of the project.

Contrary to a widely accepted myth, neither Oppenheimer nor Groves attend the Los Alamos Ranch School. However, Percival C. Keith, a member of the planning board for the government's Office of Scientific Research and Development, as well as the father of two Los Alamos Ranch School summer campers, proved instrumental in making the recommendation for Los Alamos. Col. Whitney Ashbridge, a graduate of the school, later became commander of the Army Post for the Manhattan Project. Oppenheimer knew of Los Alamos because he had a cabin in the Sangre de Cristo Mountains and had spent time horseback riding in the Jemez.

After touring the site, officials felt the Ranch School buildings would supply adequate housing for the estimated 30 scientists who would work on the project. Little did anyone at the time realize the town would grow to more than 6,000 residents during the war, causing constant shortages of housing and water, among other hardships.

New residents of Los Alamos rode the train into tiny Lamy, New Mexico, the nearest station to Santa Fe. Then they checked in at 109 East Palace Ave. in Santa Fe where Dorothy McKibbin would make arrangements for everything from their luggage and household goods to their passes that would get them into the Secret City. Next, it was a 35-mile trip to the northwest, one that could take up to four hours, depending on the conditions of the dusty or muddy arroyos and the steep, winding mountain road.

Physicists, chemists, metallurgists, explosive experts and military personnel converged on the isolated plateau. At times, six Nobel Prize winners gathered with the other scientists and engineers in the weekly colloquia put on by Robert

Oppenheimer. Meanwhile, the Army was charged with supporting the work, building buildings, keeping the commissary supplied, and guarding the top-secret work.

Hurriedly built, huge laboratory buildings sprawled along the south side of Ashley Pond. Rows of four-family apartments strung to the west toward the mountains. A few board sidewalks raised residents up out of the mud that was prevalent in winter when snow melted and in summers during the afternoon monsoons.

The obstacles that had to be overcome and questions that had to be answered before an atomic bomb could be built were numerous. The required amount of fissionable material did not exist in the world. How would a nuclear explosion be triggered? What could be used to trigger it? What sorts of metals were needed for such a bomb? Could a nuclear explosion burn the atmosphere? Many even wondered whether the "gadget," as it was called, would work. The scientists worked feverishly in fear that the Germans were developing a nuclear weapon and would have it ready before the United States.

The scientists and engineers labored on for two years. They carried out experiments in metallurgy and high explosives. They scribbled mathematical calculations on chalkboards and cocktail napkins. They worked 10- and 12-hour days six days a week then sipped famously potent martinis at Oppenheimer's home and played musical concerts in Fuller Lodge for relaxation. Meanwhile, enriched uranium and plutonium were developed in Oakridge, Tennessee, and Hanford, Washington.

Finally, on July 16, 1945, at 5:30 a.m., an incredible burst of light exploded over the desert in south central New Mexico. Trinity, as the test shot was known, answered many of the questions the scientists had been asking. The bomb's yield, equivalent of 18,000 tons of TNT, astounded even the scientists who had spent years making painstaking calculations.

President Truman, meeting at Potsdam with Winston Churchill and Josef Stalin, was informed of the successful test. Soon, he made the decision to use the remaining bombs in the U.S. arsenal on Japan.

Atomic bombs were dropped on Hiroshima on August 6th and on Nagasaki on August 9th. Five days later, the Emperor of Japan agreed to an unconditional surrender. World War II formally ended on September 2, 1945, when treaties were signed aboard the USS Missouri. The Manhattan Project, a mission to end the war through the use of atomic weapons, had accomplished its goal.

For more information on the history of the Manhattan Project, please visit our website for books like *Los Alamos: Beginning of an Era*, and more. Or visit our museum at 1050 Bathtub Row, next to Fuller Lodge, for even more books and information.