Los Alamos, NM (Project Y)

Los Alamos Site Selection:

By October of 1942, it had become increasingly evident, from the progress of experimental developments supervised by the Manhattan Engineer District at its other installations, that the immediate establishment of an additional research site was necessary for solution of specific problems in production of a nuclear weapon. The purpose of this new installation was the development, final processing, assembly, and testing of the atomic bomb. The contemplated scope of this part of the Manhattan Project was great enough to justify a separate title; accordingly, it was named Project Y.

Because the new Project was to be the most secret of the entire Manhattan Engineer District program, isolation was perhaps the first requisite for the site. However, many other factors had to be considered:
- The area had to be large enough to provide an adequate testing ground.
- The climate had to be such that outdoor work could continue throughout the winter months.
- Access by roads and railroads was necessary for moving in extraordinary amounts of personnel and material.
- Sources of construction materials had to be near enough to keep costs reasonably under control.
- The population within a 100-mile radius of the site had to be sparse, to maintain both safety and security.
- Utility facilities, including power, water, and fuel supply had to be available or conveniently developable.
- Housing facilities had to be present to quarter at least the first arriving personnel.
- The ownership and estimated value of the land and speed of acquisition had to be considered.
- Soil characteristics, timber density, and type of terrain also had to be carefully investigated as the basis for future construction.
- The location had to be remote from all sea coasts, as the possibility of enemy attack still had to be considered.

The U.S. Engineer Office and Real Estate Sub-office in Albuquerque surveyed several areas in New Mexico for this site using these requirements as a baseline. Their reports show the emphasis placed upon all of these points.

Sites Considered:

Sites at Gallup, Las Vegas, La Ventana, Jemez Springs, and Otowi, New Mexico, were surveyed. After careful investigation, the first 3 locations were rejected as failing to satisfy the established requirements. Then more detailed reports were made for Jemez Springs and Otowi.

The Southwestern Division Real estate Branch made a preliminary report on the possibility of locating the site at Jemez Springs, in November of 1942. All pertinent factors, such as water supply, housing facilities, access by road and railroad, ownership, and estimated value were considered. A further report, by the U.S. Engineer Office in Albuquerque, NM, covered in more detail the buildings around Jemez Springs which could be utilized for housing, and considered the sources and costs of construction materials, climate, labor supply, recreational facilities, population within a 100-mile radius, fuel supply, medical facilities, and the steps necessary to acquire the land for the proposed site. Had Jemez Springs been selected, 70% of the housing for the immediate needs of the Project would have to be built. This report included no recommendations, because the specific purpose of the site was unknown to the office making the survey.

In November 1942, the Manhattan District authorized the Albuquerque Engineer District to conduct a site investigation in the vicinity of the Los Alamos Ranch School in Otowi, New Mexico. Reports comparable to those submitted on the proposed Jemez Springs were prepared. The fact that the existing Los Alamos Ranch School buildings could be used for immediate housing was a primary factor in the recommendation of the site. Further, Otowi was more accessible, had a better water supply and lower valuation, and lay in amore sparsely populated area than Jemez Springs. All of these advantages plus the following favorable points could not be readily ignored.
- Most of the area (some 47,000 acres of the estimated 54,000 required) could be obtained easily because it was already owned by the Federal government.
- The private portion of the land was used mainly for grazing so the purchase price would be relatively small.
- There was enough area available to ensure safe spacing of the various Project units.
- The nearest town was 16 miles away, which tended to isolate the site.
- The area was located on a mesa, making entrance to the site easy to control.
- The main site area was relatively free from timber, and would necessitate little clearing.

Representatives from the Manhattan District, the Albuquerque District, and the Southwestern Division Real Estate Branch met in November 1942 at the Los Alamos Ranch School to consider that location in detail. The choice of the site was also discussed with Dr. J. Robert Oppenheimer, Project Director, and members of his staff, for further confirmation of its desirability. After careful consideration of all the cumulative reports and recommendations, Major General Leslie Groves determined that Project Y would be centered at the site of the Los Alamos Ranch School in Otowi, New Mexico.

After the final selection had been made, Lt. Col. J. M. Harman was designated as the Commanding Officer. The

University of Southern California was also selected as the Operating Contractor to oversee the technical work.

Site Description:

Los Alamos, NM is located in a sparsely populated rural area on the eastern slope of the Jemez Mountains (part of the Rocky Mountain System), in Sandoval County in north central New Mexico. Approximately two-thirds of the Project reservation occupied relatively flat, east-sloping bench land, ranging from 6,900 feet to 8,200 feet above mean sea level, and lying between the valley of the Rio Grande and the east slope of the Jemez Mountain Range. The western third included the rising east slopes of the Jemez Mountains up to 9,200 feet above mean sea level. The entire area was frequently dissected by east-flowing drainage, and the streams had cut innumerable canyons, 100 to 500 feet deep, separated by mesas of varying extent. The canyon bottoms were generally very narrow and rimmed by precipitous cliffs, 100 to 200 feet high. Many of the canyons were box canyons with no access to the mesa on either side.

The project site was located 20 air miles northwest of the state capital, Santa Fe. Santa Fe was also the nearest railhead for the Project and the terminus of a branch line of the Atchison, Topeka, and Santa Fe Railway System which joined the main line at Lamy, 18 miles farther south.

Access to the Project was over two alternate routes extending westward from paved, primary highway 285 that ran northwestward from Santa Fe through Espanola. The shorter route was highway 4 which left the primary highway at Pojoaque and crossed the Rio Grande River at the Otowi Bridge (see Photo). This was a secondary, unsurfaced road along an unimproved alignment from Pojoaque to the junction of State Roads 4 and 5, approximately 1 mile west of Otowi Bridge. This part of the road was 16 to 20 feet wide. In some places the right of way was limited by community buildings located along the highway. Unusually heavy or long vehicles could not use this road because of the weight limitation of the Otowi Bridge, a single-lane suspension bridge of 250 foot span, 10 feet wide, and designed for 10-ton maximum loading, with its east approach in a narrow side-hill cut requiring an approximate 90 degree turn onto the bridge. Also, the route was so rough and curved as to cause damage to vehicles if regularly traveled. The distance from the Plaza in Santa Fe to the Technical Area at Los Alamos via this shorter route was about 35 miles. During heavy rains this road was closed to traffic by two unstabilized stream crossings, so a longer alternate route via State Road 5 and Espanola had to be used. Throughout 1943, the public access roads to the Project were improved by the New Mexico Highway Dept. and resurfaced with asphalt in the summer of 1944.

Two properties , the Los Alamos Ranch School and the Anchor Ranch, had structures usable for housing and storage. The school comprised 54 buildings: 27 houses, dormitories, and living quarters totaling 46,626 sq. ft., and 27 miscellaneous buildings: a public school, an arts & crafts building, a carpentry shop, a small sawmill, barns, garages, sheds, and an ice house totaling 29,560 sq. ft. There were also 4 houses, with approximately 20 rooms, and a small barn at the Anchor Ranch site.

As an aside, because the name "Los Alamos" was considered classified information, the installation was variously identified as Site Y, Project Y, the Zia Project, or Santa Fe Area L. However, most residents of Los Alamos and Santa Fe simply referred to it as "The Hill".

Land Acquisition:

In November of 1942, the Undersecretary of War directed that the land recommended by the Chief of Engineers to the Commanding General be acquired. The necessary procedures were then instituted for acquiring this land for immediate use, the method to be determined by ownership.

In March of 1943, the Secretary of War requested that the Secretary of Agriculture grant authority for the War Department to occupy and use, for as long as the military necessity existed, 45,100 acres of federally owned lands under the jurisdiction of the Forest Service. This authority was granted in April 1943. Arrangements were to be made between the Commanding Officer of Project Y and the Regional Forester as Albuquerque, NM for the prevention and suppression of fires and the marking of areas within which outsiders might be permitted. It was also necessary to withdraw grazing permits in the area.

The process prescribed for acquiring privately owned land for Project Y was by condemnation or purchase. Authority for condemnation of private land was contained in the 2nd War Powers Act. Under this Act, the government filed a Petition in Condemnation which resulted in an Order of Possession served by the court on the land owner, who then had to vacate immediately. To acquire the land permanently, a Declaration of Taking was filed by the government and appraisals were made by an appointed commission. If the appraisal was not approved by both the land owner and the government, the case was settled in U.S. District Court.

Design & Engineering:

Design and engineering, through March 1944, were supervised by the Albuquerque Engineer District of the Southwestern Engineer Division. Then the Manhattan Engineer District (Manhattan Island, New York City) assumed

supervision. Because technical design depended largely upon the development of research and experimental processes, actual needs and requirements continually demanded major or minor alterations. The firm of W. C. Kruger was selected as architect-engineer for initial design and engineering and continued its work under Manhattan District supervision.

The Albuquerque District negotiated a contract for design of the originally authorized buildings and utilities with the Kruger Company because they maintained a competent architectural and engineering staff. Further, their office was in Santa Fe, in a good position to collaborate with the Operating Contractor (University of California) about special technical issues not ordinarily covered in standard Army construction.