National Historic Landmark #7c America At Work: Science and Invention

Form 10-300 (Rev. 6-72)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY – NOMINATION FORM

(Type all entries complete applicable sections)

STATE: New Mexico
COUNTY: Los Alamos
FOR NPS USE ONLY
ENTRY DATE

SEE INSTRUCTIONS

1. NAME

COMMON: Los Alamos Scientific Laboratory

AND/OR HISTORIC: Los Alamos Scientific Laboratory

2. LOCATION

STREET AND NUMBER: State Route 4

CITY OR TOWN: Los Alamos

CONGRESSIONAL DISTRICT: 1

STATE: New Mexico — CODE: 35

COUNTY: Los Alamos — CODE: 28

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP		STATUS	ACCESSIBLE TO THE PUBLIC
[X] District [ ] Building	[ ] Public	Public Acquisition:	[X] Occupied	Yes:
[ ] Site [ ] Structure	[ ] Private	[ ] In Process	[ ] Unoccupied	[X] Restricted
[ ] Object	[X] Both	[ ] Being Considered	[ ] Preservation work in progress	[ ] Unrestricted
				[X] No

PRESENT USE (Check One or More as Appropriate)

[ ] Agricultural	[ ] Government	[ ] Park	[ ] Transportation	[ ] Comments
[ ] Commercial	[ ] Industrial	[X] Private Residence	[ ] Other (Specify)	
[ ] Educational	[ ] Military	[ ] Religious		
[ ] Entertainment	[X] Museum	[ ] Scientific		

4. OWNER OF PROPERTY

OWNER'S NAME: Atomic Energy Commission and Private Also County of Los Alamos by land transfer from the AEC

STREET AND NUMBER:

CITY OR TOWN: Los Alamos

STATE: New Mexico — CODE: 35

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC: County Clerk

STREET AND NUMBER: County Administrative Building

CITY OR TOWN: Los Alamos

STATE: New Mexico — CODE: 35

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY: National Survey of Historic Sites and Buildings

DATE OF SURVEY: 1965 [X] Federal [ ] State [ ] County [ ] Local

DEPOSITORY FOR SURVEY RECORDS: Historic Sites Survey

STREET AND NUMBER: 1100 L Street

CITY OR TOWN: Washington, D.C.

STATE:

CODE: 11

STATE
COUNTY:
FOR NPS USE ONLY
ENTRY NUMBER
DATE

7. DESCRIPTION

CONDITION	(Check One)					
	[X] Excellent	[ ] Good	[ ] Fair	[ ] Deteriorated	[ ] Ruins	[ ] Unexposed
	(Check One)		(Check One)			
	[X] Altered	[ ] Unaltered	[ ] Moved	[X] Original Site		

DESCRIBE THE PRESENT AND ORIGINAL *(if known)* PHYSICAL APPEARANCE

In 1942, when the War Department selected the Los Alamos site for their scientific laboratory, among the deciding factors were the presence of adequate housing for thirty scientists, and the isolation essential to the safe separation of sites for experiments. In addition, the Parajito Plateau afforded easy control of access for security reasons. The housing for the scientists was to be provided by the extant buildings from the Los Alamos Ranch School, which included Fuller Lodge, the combination guest house, infirmary, dining room, and recreation room, as well as the "Big House," and faculty and student residences. These buildings were erected generally in the 1920's in the ranch house and bungalow styles, with the heavy use of log architecture, most notably in the Fuller Lodge.

As the Laboratory was established, the Ranch School buildings were utilised for various purposes. The faculty residences were inhabited by the head scientists, and these houses to the northeast of Fuller Lodge were dubbed "Washtub Row," in light of their superior facilities. The student dormitories were employed as shops and homes, and the Fuller Lodge continued to be used as a dining room, dormitory, and for off-hours discussions and community meetings. During this period several additions were made on the Lodge but of non-log architecture.

In addition to the Ranch School buildings, the Army erected a large number of temporary residences, such as trailer-homes, and Pacific hutments. The laboratory facilities were housed in rapidly-assembled frame buildings which clustered around Ashley Pond and the southwestern portion of the mesa. The Ranch School ice house on Ashley Pond was where the nuclear components of the atomic bombs were checked and assembled. Many of the test experiments were carried out in nearby caves, and down in Los Alamos Canyon.

In 1947, with the Atomic Energy Commission take-over of the Laboratory programs, the Technical Area was shifted across the Canyon to the South Mesa, where it is still located today. All the original temporary technical facilities were demolished, including the icehouse, several of the Ranch School structures, and the temporary housing, as well, and the construction of permanent housing and community facilities was begun.

Today, the Landmark District consists of the nine extant structures of the Ranch School; the Fuller Lodge, currently used as the community center, the house directly to the north of the lodge, which is used a museum, the small stone powerhouse at 2150 Juniper Street, which is used by the Red Cross, and the five private residences which constituted "Washtub Row," from 1964 Juniper Street through 1300 and 1350 20th Street to 1967 and 1984 Peach Street. The private houses were purchased by Laboratory scientists who have continued on at Los Alamos, and the few alterations have largely been in terms of new rooms, porches, and windows. On the southern shore of Ashley Pond is a memorial shelter, built on the site of the icehouse, out of ice house stones.

Although these structures presently mark the extent of the Landmark it must be noted that the various technical areas and many of the experimental

SEE INSTRUCTIONS

8. SIGNIFICANCE

PERIOD *(Check One or More as Appropriate)*

☐ Pre-Columbian	☐ 16th Century	☐ 18th Century	XX 20th Century
☐ 15th Century	☐ 17th Century	☐ 19th Century	

SPECIFIC DATE(S) *(If Applicable and Known)* 1943 et al

AREAS OF SIGNIFICANCE *(Check One or More as Appropriate)*

Aboriginal	☐ Education	☐ Political	☐ Urban Planning
☐ Prehistoric	☐ Engineering	☐ Religion/Philosophy	☐ Other *(Specify)*
☐ Historic	☐ Industry		
☐ Agriculture	X Invention	X Science	
☐ Architecture	☐ Landscape Architecture	☐ Sculpture	
☐ Art		☐ Social/Humanitarian	
☐ Commerce	☐ Literature		
☐ Communications	☐ Military	☐ Theater	
☐ Conservation	☐ Music	☐ Transportation	

STATEMENT OF SIGNIFICANCE

Los Alamos Scientific Laboratory was founded January 1, 1943, on the Parajito Plateau in the Jemez Mountains northwest of Santa Fe for the purpose of developing an instrument of war, the nuclear fission bomb. Successful in that task, LASL undertook a second assignment--creation of a "super" weapon deriving energy from the thermonuclear fusion of hydrogen. This mission, too, was successful. Since that time the Laboratory has continued to be the nation's foremost development center for nuclear weapons. More than 90% of the fission and fusion warheads now in American stockpiles are LASL devices.

The other half of LASL's history--the nonmilitary half--is equally impressive. Ever since 1943 the Laboratory has been making contributions to fundamental scientific knowledge and to peaceful applications of atomic energy. The world's first enriched-uranium reactor was designed and built at Los Alamos, where it has been in operation since 1944. The world's first plutonium-fueled reactor went into operation at Los Alamos in 1946. This was also the world's first fast-neutron reactor. In more recent years the Laboratory has developed a reactor using uranium phosphate fuel and another using molten plutonium, both for the first time anywhere. Several rocket propulsion reactors have been built and ground tested, with flight tests scheduled in the next few years. The Laboratory continues to be a leader in many other peaceful fields, including chemistry and metallurgy, biology and medicine, thermionic electricity, plasma physics, instrument development and electronic computing.

History

The remote area selected in 1942 for the Los Alamos Scientific Laboratory, as it was to become known, was the Los Alamos (The Poplars) Mesa of the Parjarito (Little Bird) Plateau, a 7,300 foot-high, pine-forested shelf of the Jemez Mountains 35 miles northwest of Santa Fe, New Mexico.

The mesa, aside from a few isolated ranches and homesteads nearby, was occupied only by the Los Alamos Ranch School for Boys. Here, in some 50 log buildings, the Ranch School since 1918 had conducted for 40 to 50 boys yearly a secondary and preparatory school with ranching, camping, riding and other outdoor recreations.

Behind the selection of this remote area for scientific research there had swiftly developed a series of events of world-wide importance.

SEE INSTRUCTIONS

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Richard Hewlett, The New World, 1939-1946: A History of the United States Atomic Energy Commission, Vol. 1 (Pennsylvania State University Press, 1962).

Los Alamos Scientific Laboratory, The First Twenty Years at Los Alamos (Los Alamos, 1963).

Kasha Thayer and Edith Truslow, Manhattan District History (National Technical Information Service, U. S. Department of Commerce, 1973).

Los Alamos Scientific Laboratory of the University of California (Los Alamos, May, 1971).

10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY			OR	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES	
CORNER	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE
UTM	Degrees Minutes Seconds	Degrees Minutes Seconds		Degrees Minutes Seconds	Degrees Minutes Seconds
NW	13° 382600. "	3971790 ' "		° ' "	° ' "
NE	13° 383000. "	3971790 ' "			
SE	13° 383000. "	3971000 ' "			
SW	13° 382600. "	3971000 ' "			

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: 13 acres but incomplete

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE

11. FORM PREPARED BY

NAME AND TITLE:
Richard Greenwood, Historian, Landmark Review

ORGANIZATION
Historic Sites Survey

DATE
1-14-74

STREET AND NUMBER:
1100 L Street

CITY OR TOWN:
Washington

STATE
D.C.

CODE
11

12. STATE LIAISON OFFICER CERTIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National ☐ State ☐ Local ☐

Name _____

Title _____

Date _____

NATIONAL REGISTER VERIFICATION

[(NATIONAL HISTORIC LANDMARKS)]

I hereby certify that this property is included in the National Register.

Landmark Designated: Date 1-16-75

Boundary Certified: date

Chief, Hist. & Arch. Surveys

ATTEST: date

Boundary Affirmed: date

Director, OAHP

Keeper of The National Register

Date _____

[(NATIONAL HISTORIC LANDMARKS)]

SEE INSTRUCTIONS

[(NATIONAL HISTORIC LANDMARKS)]

☆ U.S. GOVERNMENT PRINTING OFFICE : 1973-729-147/1442 3-1

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stations located elsewhere possess historical significance at the national level, but at this date, the classified-restricted nature of these facilities prohibits the necessary surveying and researching to include them in the Landmark. Upon their declassification these properties should be studied for their inclusion in the Historic District.

Boundaries

The Landmark district consists of Historical Tracts #1, 2, and 3 as surveyed on the attached survey plat, drawn for the County of Los Alamos by V. J. Matt on November, 1973.

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Radioactivity had been discovered before the beginning of the century. Yet the possibility of the release of large amounts of energy by nuclear chain reaction was not realized until the announcement in January, 1939, of the discovery of fission and its experimental confirmation. That fall the United States took steps to study the problem.

Immense stimulation was given the work by two significant events: entry of the United States into World War II on December 8, 1941, and initiation of the first nuclear chain reaction on December 2, 1942, in the Metallurgical Laboratory of the University of Chicago.

Wartime development of the atomic bomb itself was started in 1942 under direction of the Office of Scientific Research and Development. Dr. J. Robert Oppenheimer undertook investigation of its theoretical possibilities at the University of California in Berkeley with a small group of well-known physicists.

By October their theoretical studies had progressed to the point where actual experimental work was necessary. Several locations in the Southwest were surveyed as possible sites for the required new laboratory--including the Ranch School where Dr. Oppenheimer had visited frequently on pack trips from his summer home in the nearby mountains.

The decision was made to center the weapon research, called Project Y, at the Los Alamos Ranch School. Governing considerations for its choice were the secrecy and safety that its remote and isolated location provided. Mild winters offered opportunities for outdoor work throughout the year. Log buildings of the Ranch School also could easily accommodate the 100 or so scientists and their families who it was believed would be all that were required.

On November 25, 1942, the Under Secretary of War directed acquisition of the site. This ultimately comprised about 800 acres of ranch property, 2,900 acres in homesteads and grazing land, and 45,000 acres in public domain land supervised by the Forest Service. The public land had been acquired by the United States from Mexico under terms of the 1848 Treaty of Guadalupe Hidalgo.

Early in December the first construction crews arrived. In January, 1943, the University of California was selected to operate the new laboratory, and a formal nonprofit contract was soon drawn with the Manhattan Engineer District of the War Department. (The Manhattan Engineer District was the code name for the wartime nuclear research effort seeking development of an atomic bomb.) The first scientists arrived on the "The Hill" in April to begin their historic research.

During the period from 1943 to 1946 the Laboratory was devoted to its secret wartime mission of developing an atomic bomb and, consequently, laying the foundation for what was soon to be acknowledged as "perhaps the finest physics laboratory in the world."

Dr. Oppenheimer, as Laboratory director, supervised the scientific research aimed at developing atomic weapons. Maj. Gen. Leslie R. Groves of the Manhattan Engineer District assumed overall responsibility for the War Department.

The list of scientific leaders at Los Alamos during the war years is far too lengthy to recite completely. It included many scientists already in America but who had diverse backgrounds and training: Enrico Fermi, Bruno Rossi and Emilio Segre from Italy; Niels Bohr from Denmark; John von Neumann and Edward Teller from Hungary: Stanislaw Ulam from Poland; I. I. Rabi and Victor Weisskopf from Austria; Hans Bethe and Rolf Landshoff from Germany; George Kistiakowsky from Russia; a British contingent including Sir James Chadwick, Cyril Smith, Otto Frisch and W. G. Penney. Other well-known scientists who came to Los Alamos included Eric Jette, Robert Bacher, Philip Morrison, Robert Wilson, William Parsons, Joseph Kennedy, Kenneth Bainbridge, Richard Feynman, Edwin McMillan, John Manley, Nick Metropolis, Darol Froman, Donald Hornig, L. D. P. King, Alvin Graves, Samuel Allison, Carson Mark, Charles Critchfield, Luis Alvarez, Norman Ramsey, and many, many others.

Some of these remain on the Laboratory's present staff while others are still regular consultants.

With these men came urgently needed equipment: a cyclotron from Harvard, two Van de Graaff electrostatic generators from the University of Wisconsin, a Cockcroft-Walton accelerator from the University of Illinois, and chemical and cryogenic equipment from the University of California.

All equipment and supplies had to be freighted by truck from the railhead at Santa Fe, and up a mountain dirt road. Temporary wooden laboratory buildings were hastily thrown up to house them. Timber was felled and new roads bulldozed to remote sites. Haste and expediency, under the urgency of war, guided the most delicate tasks.

Work and tension continued to mount at Los Alamos. Theoretical studies first had proved the feasibility of a nuclear fission bomb. An enormous step now lay ahead--an actual field test with full instrumentation.

A test site was picked--a desolate desert area of the Jornada del Muerto (Journey of Death) trail near Alamogordo, in southern New Mexico. The code name for the test was "Trinity."

Early in the spring of 1945 preparations began. Final assembly of the gadgetry was made in a deserted ranch house on the night of July 12. Two days later the unit was elevated to the top of a 100-foot tower, and tedious instrumentation began. By pre-dawn of July 16 all was ready. However, the ominous thunder and lightning a coming storm necessitated a 90-minute postponement. Near 4 a.m. the light rain stopped, the weather cleared. And at 5:29:45a.m. there occurred the "unprecedented,

magnificent, beautiful, stupendous, and terrifying" detonation of the world's first nuclear fission bomb, with an estimated force equivalent to 20,000 tons of TNT.

The Laboratory from the end of the war until 1947 suffered a period of doubt and discouragement from which it emerged the distinguished institution that it is today.

LASL, The University and the AEC recognized that major modernization and expansion of the Laboratory would have to be made if it were to fulfill its significant functions. Accordingly, a long-range multi-million dollar Technical Area building program was authorized. It provided for bridging Los Alamos Canyon, building a new Tech Area on South Mesa, and eventually dismantling the old technical area laboratory buildings on Los Alamos Mesa. (All the original World War II Laboratory structures on Los Alamos Mesa have been razed.)

It was also recognized that the sole reason for existence of Los Alamos community was to support operation of the Laboratory, and that there was insufficient space on Los Alamos Mesa to provide adequate service and community facilities. Hence a long-range multimillion dollar community construction program provided for expanding the community northward across Pueblo Canyon, adding to the Western Area housing, providing a modern Community Center with all service facilities, and gradually replacing all the temporary wartime buildings in Los Alamos.

In the late 1940's and early 1950's a gigantic effort was made in the development of the first thermonuclear or "H" bomb. The world's first fusion device was successfully tested on November 1, 1952, at the AEC's Pacific Proving Grounds.

The Laboratory's primary responsibility was--and still is--research and development work on nuclear and thermonuclear weapons and weapons components. This fundamental mission, however, has been supported from the beginning by intensive basic research in many fields: physics, chemistry, metallurgy, mathematics, biology and medicine, explosives research, and engineering, to name but a few.

It is not surprising, in view of the breadth of this basic program, that the Laboratory's activities have greatly expanded--particularly in the direction of peaceful applications of nuclear energy. Only about half of LASL's total effort is now devoted to weapons. The other half is concerned with research and development in other fields associated with atomic energy.[1]

1. Los Alamos Scientific Laboratory at the University of California, (Los Alamos, New Mexico, May 1971) pp. 3-8.