

**The Atomic Testing Museum:  
Presenting the History and Preservation of a 50 Year Journey**

Troy E. Wade II, Chairman  
Nevada Test Site Historical Foundation  
755 E. Flamingo Road  
Las Vegas, NV 89119

**ABSTRACT**

The Nevada Test Site (NTS) is one of the premier test and evaluation sites belonging to the National Nuclear Security Administration (NNSA), a part of the Department of Energy. Founded in 1950, it is a major domestic location for the testing of nuclear components and nuclear weapons destined for the stockpile, the nuclear deterrent of the United States. From 1951 until 1992 there were 100 atmospheric and 828 underground nuclear tests conducted at the NTS. Those tests resulted in the development of a nuclear deterrent that helped prevent a world war and played a major role in the final defeat of the Soviet Union in the Cold War. Those tests led to the development of yield measurement techniques that allowed the United States Government to take the lead in the negotiations of the Comprehensive Nuclear Test Ban Treaty (CTBT), which took effect in 1992, ending the requirement to do routine nuclear tests. This paper describes the walk through the history of the NTS' Cold War battlefield.

**INTRODUCTION**

After the use of nuclear weapons at the end of World War II on Hiroshima and Nagasaki, Japan, the U.S. embarked upon a series of nuclear tests. From 1946 until 1950, nuclear tests in the atmosphere and under water were conducted on a campaign basis on the Marshall Islands in the Pacific. These tests were done to perfect the nuclear weapon technology and to further understand the effects of nuclear weapons on other U.S. military assets, such as ships of the line. However, in August of 1949 that all changed when the Soviet Union conducted their first test of a nuclear weapon well ahead of their predicted schedule. This Soviet test, dubbed "Joe 1" by the U.S., sent a clear and ominous signal to the decision makers in the U.S. government. Clearly the emphasis had to move from developing nuclear weapons to learning how to defend the U.S. against nuclear weapons. Learning and developing that kind of information could not be done at a test site located thousands of miles from the weapons laboratories at Los Alamos and Sandia. It became urgently apparent that a domestic nuclear testing site was needed. A military/civilian committee was formed to search for a domestic site suitable for the requirements. That committee located four sites within the Continental United States. In November of 1950 a recommendation was made to President Harry Truman that a domestic nuclear test site be established on land in Southern Nevada that was part of the Las Vegas Bombing and Gunnery Range of the United States Air Force. On December 18, 1950 President Truman issued a letter establishing the Nevada Proving Ground, later to become the Nevada Test Site, and authorized the commencement of atmospheric nuclear tests necessary to maintain U.S. superiority, a task that had become more complicated due to the Korean conflict.

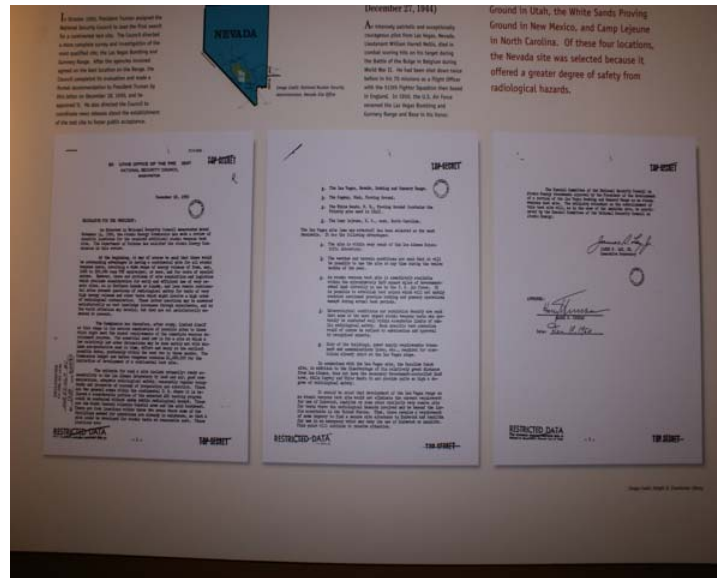


Fig. 1. Letter from President Truman establishing the Nevada Test Site in 1950.

The Atomic Energy Commission withdrew land from the Bureau of Land Management and from the Las Vegas Bombing and Gunnery Range, currently known as the Nellis Bombing and Gunnery Range, and established the Nevada Proving Ground. A task force was dispatched from Los Alamos to establish a base camp and prepared for nuclear testing. On January 27, 1951, the first nuclear test device was dropped from an airplane and detonated over the NTS. From that first test until the last underground nuclear test was conducted in 1992, the NTS was the “back yard” for Los Alamos, Livermore and Sandia. All three laboratories did tests at the NTS that could not be conducted at their main laboratory locations. There were large resident personnel at the NTS from all three labs; Livermore in particular because of differences in what could be done in California versus what could be done in New Mexico. However, most personnel flew in to the NTS on Mondays and left on Fridays. This became known in Nevada as “fly-in, fly-out science”.

From 1951 until October of 1958, atmospheric testing continued. The test program was put on hold when President Eisenhower and Secretary General Khrushchev of the Soviet Union agreed to a bilateral nuclear test ban. The United States observed the agreement and stopped testing and therefore was shocked in August of 1961 when the Soviets abrogated the test ban agreement giving a two-day notice to the U.S. Immediately the U.S. resumed their test program, moving slowly. The Soviets, on the other hand, conducted over 50 nuclear tests in the first six months after the abrogation. This was ample evidence that they had spent the entire three years of the test ban planning for a new, large series of atmospheric tests.

The next major factor influencing history was an international treaty that banned conducting nuclear tests in the atmosphere, space or under water. This treaty was officially known as the Limited Test Ban Treaty and was signed in 1963 by the United States, USSR, and the United Kingdom. The U.S. began a major program to develop the capability to conduct underground nuclear weapons tests in a safe and contained manner, but with maximum data recovery. It took many years to perfect the underground testing techniques. From the first underground test in 1958 until the last test conducted in 1992, the U.S.

conducted over 800 tests at the NTS. Another major international treaty affecting operations at the NTS was the Threshold Test Ban Treaty put into force as part of the move toward a total nuclear test ban that was signed in 1976. This treaty limited the yield of underground tests to 150 kilotons. The last underground nuclear test conducted at the NTS was in September of 1992. Further testing was prohibited by the United States' of the Comprehensive Nuclear Test Ban Treaty, known as the CTBT. As a result of this treaty, there have been no nuclear tests conducted by the signatories that included the United States, the United Kingdom, the Republic of Russia, and France. However, some nations such as Pakistan, India and North Korea have never signed the treaty.

After the last nuclear test in 1992, the future of the NTS was uncertain. Some believed that testing would never be resumed, and therefore the NTS should be closed, except for the part in the Southwest corner dedicated to the Yucca Mountain project. Some believed that component testing and testing of hazardous materials would become the new mission of the NTS. It was also thought that the low-level and transuranic radioactive waste program coming from other DOE facilities to the NTS should be expanded. As it has turned out, the NTS has become the place where the nuclear design laboratories conduct experiments that are in conformance with existing treaties yet provide confidence in the safety and reliability of the warheads in the enduring nuclear weapons stockpile. Additionally, the NTS has become a testing ground for many other agencies of the U.S. government because of the kinds of experiments permitted by the existing Environmental Impact Statement. None-the-less, in 1993 and 1994, it was not clear that the NTS would survive.



Fig. 2. This is a map of the Nevada Test Site located in southern Nevada.

In 1995, several veterans of the NTS gathered to discuss the history of the NTS and its future, which looked very dismal at the time. Those gathered, which included federal and laboratory people, worried about huge existing databases like the Nuclear Testing Archive, which contain radiation exposure data for all those who have ever worked at the NTS. They worried about the future of an internationally recognized collection of Native American artifacts collected at the NTS and in Central Nevada, and they worried about the loss of a piece of history which was very unique in both Nevada and in the U.S. This

self funding group sought “outside” advice about what steps could be taken to protect this valuable information. With assistance provided by experts from other museums and laboratories initial discussions about a Museum began in 1996. The University of Nevada Las Vegas (UNLV) and the Desert Research Institute (DRI), both major entities of the Nevada System of Higher Education, were contacted about their interests in the preservation of the science and the technology stemming from 50 years of nuclear experiments at the NTS. Funding for additional planning was provided by the local office of the Department of Energy (DOE) while conversations began with the General Services Administration (GSA), acting as the government’s real estate broker, regarding capital construction. Through all of these beginning years, and through all of the various discussions, the same group of people continued to pursue a goal of preserving the history and the data and the artifacts. Most of those people continue to be involved with the museum and serve on the current Board of Directors.

In 1998 the Nevada Test Site Historical Foundation (NTSHF) was incorporated as an IRS 501-C-3 Non-Profit Nevada Corporation. After incorporation a Board of Directors was elected and Officers and Executive Committees were appointed by the Board. Fundraising efforts began with discussions with the Nevada Congressional Delegation and DOE officials, both locally and in Washington D.C. An agreement was reached between DRI, DOE and the NTSHF about a partnership that would result in the Atomic Testing Museum, located in a new DRI building, located on the North edge of the UNLV campus in Las Vegas. This location was optimum for the NTSHF as it provided a location for the new museum that was just blocks from the Las Vegas Strip and less than a block from a major arterial serving McCarran International Airport. Planning proceeded such that the Seattle office of the GSA took over as the spokesman for the DOE.

In December of 1990, a large fundraiser was held in the vacant lot that would become the new DRI building and home of the Atomic Testing Museum. This event celebrated the 50<sup>th</sup> Anniversary of the NTS, and the festivities were culminated by the detonation of many small explosive charges simulating all of the testing done at the NTS. Participants included national and local politicians, representatives of the Nevada System of Higher Education, local business people, and dignitaries.

Discussions began with the Smithsonian Institution about a partnership. These conversations resulted in the designation of the Atomic Testing Museum as an “affiliate” of the Smithsonian, the first museum ever granted this distinction before construction began. Talks with Smithsonian representatives, and successful fundraising activities led to the selection of a Vancouver, B.C. firm being selected as the design architect/engineers for the permanent exhibit. Plans proceeded on the design of the DRI building, and resulted in the ground-breaking for that building in 2002. A major event was held concurrent with that groundbreaking, with many dignitaries and local people present. The building known as the Frank Rogers Building, in honor of the father of a major donor, was dedicated and opened with great fanfare in 2003. The building, which cost about \$14M, is owned by DRI acting on behalf of the Nevada System of Higher Education. Funding was provided by the State of Nevada, accounting for about a third of the cost, and by the DOE, which, through the GSA, sold revenue bonds to raise the remaining two thirds of the cost.



Fig.3. The Frank H. Rogers Science and Technology Building in Las Vegas, Nevada.

Three of the artifacts to be included in the finished museum were so large that they had to be installed on the concrete foundation of the first floor of the Rogers building before the remainder of the building was constructed and enclosed. After consultation with the National Museum of Nuclear Science and History in Albuquerque and the Bradbury Museum in Los Alamos, in 2003 the final design of the permanent exhibits in the Museum was established, and a contract to fabricate and install the permanent exhibits was issued shortly thereafter to a New Jersey company. As fabrication of the exhibits proceeded, necessary modifications to the exhibit space began. Installation of the permanent exhibits began in 2004, leading to an opening of the Museum planned for early 2005.

The Rogers Building is a three story structure that houses many activities. The third floor is dedicated to DRI research activities and office space. The second floor contains two major collections and supporting offices. The ground floor houses the Atomic Testing Museum, a 2,000 square foot changing exhibit hall, the Museum store, a 130 seat auditorium, a public reading room that provides access to government documents, and a large lobby and receptionist. The Harry Reid Changing Exhibit Gallery provides space for different kinds of exhibits. Since its opening, displays have included an exhibit by the Atomic Museum in Nagasaki and an exhibit by the United Kingdom, recognizing the 24 British underground nuclear tests conducted at the NTS. The public reading room allows public access to a very large government database called the Nuclear Testing Archive; a collection of over 400,000 documents related to nuclear explosives testing and over 1,000,000 film badge records of personnel who worked at the NTS. The Auditorium provides meeting space for the Museum's distinguished lecture series and for outside events. The combination of the large lobby and the auditorium can accommodate receptions of four hundred plus attendees.

The Rogers Building houses three major and quite valuable collections. One collection is known as the Nuclear Testing Archive, a major collection of medical records. The second collection is of Native American Artifacts collected at the NTS and in Central Nevada. This very extensive collection is maintained by the scientists of DRI, under contract to the DOE, who, by law, maintain the collections for the Native Americans. Several artifacts from this extensive collection are displayed in the Museum. The third and most important collection is the Atomic Testing Museum itself. Beginning with an entrance through a mock-up of a NTS Guard Station, the Museum takes you on a walk through a major battlefield

of the Cold War. This walk begins with displays of events in 1945 and ends with displays that describe activities ongoing at the NTS today.



Fig.4. This is the Guard Station/Ticket Office at the Atomic Testing Museum in Las Vegas, Nevada.

The Atomic Testing Museum was opened on February 5, 2005, with over 600 people in attendance at a major reception with many speeches by many dignitaries. The mission of the museum, developed long before the opening, was to preserve the history of the NTS and to educate school children on that history. Since opening, over 168,000 people have purchased admission tickets to the museum, and over 14,000 school kids have visited. The cost of transportation and admission for school children is being born by the museum and by donations. The museum's Distinguished Lecture Series has included speeches by Sergei Khrushchev (Nikita Khrushchev's son); Senator Pete Dominici; former Secretary of the Air Force and author Tom Reed (three times); Susan Eisenhower (two times); Los Alamos National Laboratory Director, Harold Agnew and many others. Major events, in addition to the ground-breaking, building dedication, and the opening of the Museum, have included a major exhibit from the Nagasaki Museum; an exhibit honoring Francis Gary Powers, the pilot shot down over the Soviet Union; three photography exhibits including the collection of Doc Edgerton (one of the founders of EG&G) photos from the MIT Museum; and a major exhibit and three day celebration involving the United Kingdom. This 3-day September, 2008 event celebrated the opening of an exhibit describing the nuclear test program of the United Kingdom conducted at the NTS, as well as the 50<sup>th</sup> anniversary of the Mutual Defense Agreement, a document which governs nuclear cooperation between the two nations.

Las Vegas tour buses regularly visit the museum. Buses taking visitors to the NTS on approved visits arrive and depart from the Museum. A major holiday in Nevada is Nevada Day, the anniversary in October of Nevada's approval as a State. On Nevada Day, the Museum has offered free access to Nevada citizens, resulting in visits of over 1000 people on that day in 2006 and several hundred in 2007 and 2008.

The opening and operation of the Atomic Testing Museum has provided a vehicle for the general public to see and understand the history of the NTS over a 50 year period. It provides a view of a very unique piece of U.S. history that will never be repeated, as well as a view of a very unique piece of Nevada history. The museum provides a window into the lives of the more that 100,000 people that worked there over a fifty year period, and a description and understanding of the international events that drove

decisions that resulted in activities at the national laboratories and at the NTS. Without the museum, preservation of the science and technology, and the social and cultural events that occurred which were a result of the NTS, would have been lost. The museum chronicles the fact that NTS workers have done their jobs in the Marshall Islands, at all of the Plowshare sites around the U.S., at tests conducted in Central Nevada, and on Amchitka Island in the Aleutian Chain. The Museum chronicles the founding of the Nuclear Emergency Search Team at the NTS and the subsequent deployment of NTS personnel from Europe to the Northwest Territory. The museum presents information and artifacts about the Joint Verification Experiments, an undertaking in 1988 when the U.S. conducted a nuclear test in Nevada instrumented by Soviet scientists and the Soviets conducted a nuclear test in Kazakhstan instrumented by U.S. scientists.

All of these things, and thousands of others, would have been lost if the people who first recognized the importance of the preservation of history, had not persisted. This goal would not have been realized without the dedication and support of many, many volunteers, national and local politicians and the academic community in Nevada. None of this would have come to fruition without the support from the DOE (later National Nuclear Security Administration), both programmatically and monetarily. All of this was accomplished from within an agency and its predecessors who, over time, have nurtured the most sophisticated science conducted in the world. Interestingly however, DOE is an agency that does not have a policy for preservation of the history of anything beyond the Manhattan District and provides little support for museum activities at its many sites around the U.S.

It is the fond hope and prayer of the founders of the Atomic Testing Museum that others will not be cowed and will work as hard as we did for the preservation of history and for the use of that preservation for the education of those to come.