



Nuclear Timeline

Introduction

The Nuclear Age spanned from the 1940s through the 1990s. Key occurrences during that period, including events that precipitated the era and crucial milestones along the way, are documented in this timeline. An important part of the nuclear age occurred at the Nevada Test Site (NTS). Between 1951 and 1992 a total of 928 nuclear tests were conducted at the NTS, 828 of which were underground. A total of 126 nuclear tests were conducted at other sites in the Pacific Proving Grounds, New Mexico, Alaska, Colorado and Mississippi.

1942

September—The Manhattan Project is formed to secretly build the atomic bomb.

November—Los Alamos is selected as the site for an atomic bomb laboratory.



Fox was part of the first atmospheric nuclear test series at the Nevada Test Site in 1951.

1945

July—The United States demonstrates the world's first atomic bomb, Trinity, at Alamogordo, New Mexico.

August—America drops atomic bombs on Hiroshima and Nagasaki; Japan surrenders.

1946

June—The United States begins conducting atmospheric nuclear tests in the South Pacific Ocean.

August—President Truman signs the Atomic Energy Act (also known as the McMahon Act), transferring the control of atomic energy from military to civilian hands. Under the act, the Atomic Energy Commission is established to control nuclear materials and develop nuclear weapons.

1948

The Armed Forces Special Weapons Project conducts a top-secret feasibility study, code named Project Nutmeg, to search for a continental test site.

1950

January—The United States announces the decision to develop the hydrogen bomb.

December—President Truman designates part of the Las Vegas Bombing and Gunnery Range as the Nevada Proving Ground, thus establishing a continental nuclear test site.

1951

January—President Truman approves the Atomic Energy Commission's first test series Operation Ranger and the first nuclear test, Able, occurs at the Nevada Proving Ground. The 1-kiloton device was dropped from a B-50 bomber.

1952

October—U.S. explodes the first thermonuclear device, Mike, in the Pacific Islands. It had a yield of 10.4 megatons.

1953

May—The first and only nuclear test fired from a 280-mm gun, Grable, is conducted at the Nevada Proving Ground.

1954

February—Bravo, an experimental thermonuclear device, is conducted on Bikini Island. At 15 megatons, it is the highest yield nuclear test ever conducted by the United States.

September—The USS Nautilus, the first American nuclear powered submarine is launched.

1955

The Nevada Proving Ground is renamed the Nevada Test Site.

1957

July—With a yield of 74 kilotons, Hood is the highest yield atmospheric nuclear test conducted at the NTS.

September—The first contained underground nuclear weapons test, Rainier, occurs at the NTS with a yield of 1.7 kilotons.



1958

Construction begins on the Nuclear Rocket Development Station, at the Nevada Test Site, a joint venture between the U.S. Atomic Energy Commission and the National Aeronautics and Space Administration to explore the use of atomic energy for spacecraft propulsion. The endeavor is named Project Rover.

August—The United States conducts its only test series in the South Atlantic Ocean named Operation Argus.

October—The United States enters into a unilateral testing moratorium with the Soviet Union, ending all nuclear testing.

1961

May—The world's first nuclear ramjet engine, Tory IIA-I, roared to life for just a few seconds at the NTS. Almost immediately after its successful test run, work began on Tory II-B, a lighter, more powerful engine.

September—United States and the Soviet Union resume nuclear testing.

October—The Soviet Union explodes the world's largest nuclear bomb, with a yield of 58 megatons.

December—As part of the Plowshare Program, the United States conducts Gnome, an underground nuclear detonation conducted within salt to simulate natural gas production in Carlsbad, New Mexico.

1962

March—The first of 24 joint underground nuclear tests, Pampas, is conducted at the NTS by the United States and the United Kingdom.

March through 1966—The Bare Reactor Experiment, Nevada (BREN) experiments are conducted at the NTS. The experiment exposed Japanese-style houses, built for the experiment, with various intensities of radiation from a small, unshielded reactor placed on a 1,527-foot tower. The experiments develop a way to accurately estimate the radiation doses received by selected survivors of the atomic bombings of Nagasaki and Hiroshima, Japan.

July—Project Sedan, a Plowshare Program test, is conducted at the Nevada Test Site. It forms a 1,280-foot diameter by 320-foot deep crater.

July—Little Feller I, the last atmospheric nuclear test is conducted at the NTS. Little Feller I was a stockpile Davy Crockett tactical weapon with a nuclear warhead weighing only 51 pounds.

October—The Cuban Missile Crisis, a standoff between the United States and the Soviet Union, brings the world to the brink of nuclear war.



As part of the Plowshare Program, Sedan tested excavation capabilities of nuclear weapons for peaceful purposes.

1963

August—The Limited Test Ban Treaty is signed by the United States, the Soviet Union, and the United Kingdom. It prohibits tests of nuclear devices in the atmosphere, in outer space, and underwater.

October—The United States conducts the Shoal test, a nuclear test detection experiment, in Fallon, Nevada.

1964

The Environmental Protection Agency is contracted to construct a 30-acre farm at the NTS to determine whether radionuclides found in the environment are being transported to humans through the soil-forage-cow-milk food chain. Data produced normal results.

October—The United States conducts the Salmon test, one of two underground nuclear test detection experiments, in Hattiesburg, Mississippi.

1965

February—Apollo astronauts conduct a three-day lunar training mission in the craters of the NTS.

October—The United States conducts the Long Shot test, one of three underground nuclear tests in Alaska.

1967

December—The United States conducts the Gasbuggy test, a nuclear joint government/industry gas simulation experiment, in Farmington, New Mexico.

1968

January—The United States conducts the Faultless test, a nuclear seismic calibration test, in Central Nevada.

Nevada Test Site



Nevada Test Site

1969

September—The United States conducts the Rulison test, one of four joint nuclear government/industry gas simulation experiments, in Colorado.

November to December—Preliminary Strategic Arms Limitation Treaty (SALT) talks take place in Helsinki, Finland.

1970

December—"Baneberry" a 10-kiloton test conducted at the Nevada Test Site, results in a radioactive release.

March—The Non-Proliferation Treaty is established; 100 nations ratify it by 1980.

1972

May—President Nixon and General Secretary Brezhnev sign the Strategic Arms Limitation Treaty (SALT) and the Interim Agreement on Strategic Offensive Arms, in Moscow.

November—SALT II treaty negotiations begin. They last until 1979.



The U.S. and the Soviet Union made history in 1988 by conducting the first joint test between the two countries at the Nevada Test Site.

1974

July—The Threshold Test Band Treaty, which limits nuclear explosions to under 150 kilotons, is signed by the United States and Soviet Union.

1975

January—The Atomic Energy Commission is abolished and replaced with two agencies: the Energy Research and Development Administration and the Nuclear Regulatory Commission.

1977

October—The United States creates the Department of Energy to take over the functions of the Energy Research and Development Administration.

1980

June—The underground Huron King vertical line-of-sight test is conducted at the NTS to measure the nuclear effects on a military Defense Satellite Communications System.

1981

August—President Reagan re-authorizes the production of the Enhanced Radiation Weapon or neutron bomb.

1982

June—Strategic Arms Reduction Talks (START) begin in Geneva, Switzerland.

1983

March—The United States examines the feasibility of a missile defense program, a Strategic Defense Initiative later dubbed "Star Wars."

1985

August—The Soviet Union announces a nuclear testing moratorium.

1986

January—Soviet President Mikhail Gorbachev asks for the abolishment of nuclear weapons by the year 2000.

April—Chernobyl nuclear reactor meltdown occurs in the Soviet Union. Massive amounts of radioactive material are released.

1987

December—President Reagan and Gorbachev sign the Intermediate-Range Nuclear Forces Treaty, eliminating specific land-based missiles with certain ranges.

1988

August—"Kearsarge," a Joint Verification Experiment is conducted at the Nevada Test Site allowing the United States and the Soviet Union to conduct joint nuclear tests.



1991

July—President Bush and President Gorbachev sign the Strategic Arms Reduction Treaty, which eliminates approximately half the nuclear warheads carried by ballistic missiles.

1992

September—Divider, the last underground nuclear test, is conducted at the NTS before a unilateral nine-month nuclear testing moratorium begins in October.

1993

January—Bush and President Yeltsin sign the Strategic Arms Reduction Treaty (START II), which reduces each nation's arsenals of long-range nuclear weapons.

1994

The Stockpile Stewardship Program is established in response to the 1994 National Defense Authorization Act which requires, in the absence of nuclear testing, a program to understand, evaluate, refurbish, and maintain the nation's enduring nuclear stockpile.

1995

May—178 nations renew the Non-Proliferation Treaty.
August—President Clinton announces a total ban on all U.S. nuclear weapon testing.

1996

September—United Nations approves the Comprehensive Test Ban Treaty.

1997

July—United States begins a round of subcritical experiments at the Nevada Test Site. The first experiment, *Rebound*, demonstrates the capability of the U.S. to test its nuclear stockpile without producing a nuclear chain reaction.

1999

July—President Bill Clinton signs the National Missile Defense Act.
October—The U.S. Senate fails to ratify the Comprehensive Test Ban Treaty.

2000

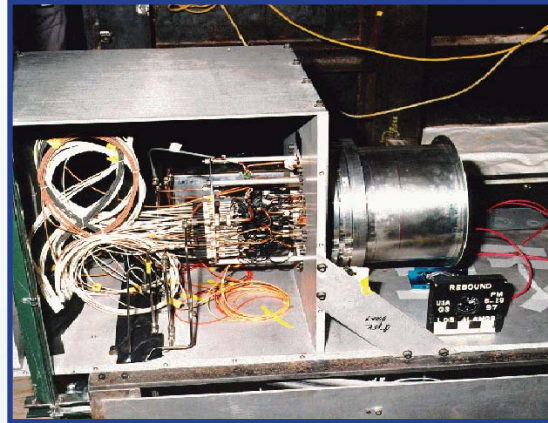
The National Nuclear Security Administration is established by Congress. It is a semi-autonomous agency within the U.S. Department of Energy responsible for enhancing national security through the military application of nuclear science.

2003

July—The first experiment using plutonium is conducted at the NTS Joint Actinide Shock Physics Experimental Research (JASPER) Facility in support of the Stockpile Stewardship Program. JASPER experiments utilize a two-stage gas gun to conduct research on plutonium and other surrogate materials as targets.

Present

In the continued absence of nuclear testing, the United States' Stockpile Stewardship Program is responsible for safeguarding the nation's nuclear stockpile through continued subcritical experimentation and the development of other dynamic plutonium experiments. The Nevada Test Site continues to play an instrumental role in serving this mission.



Rebound, the first subcritical experiment at the Nevada Test Site, is assembled at the U1a Facility.

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