Nevada Offsites

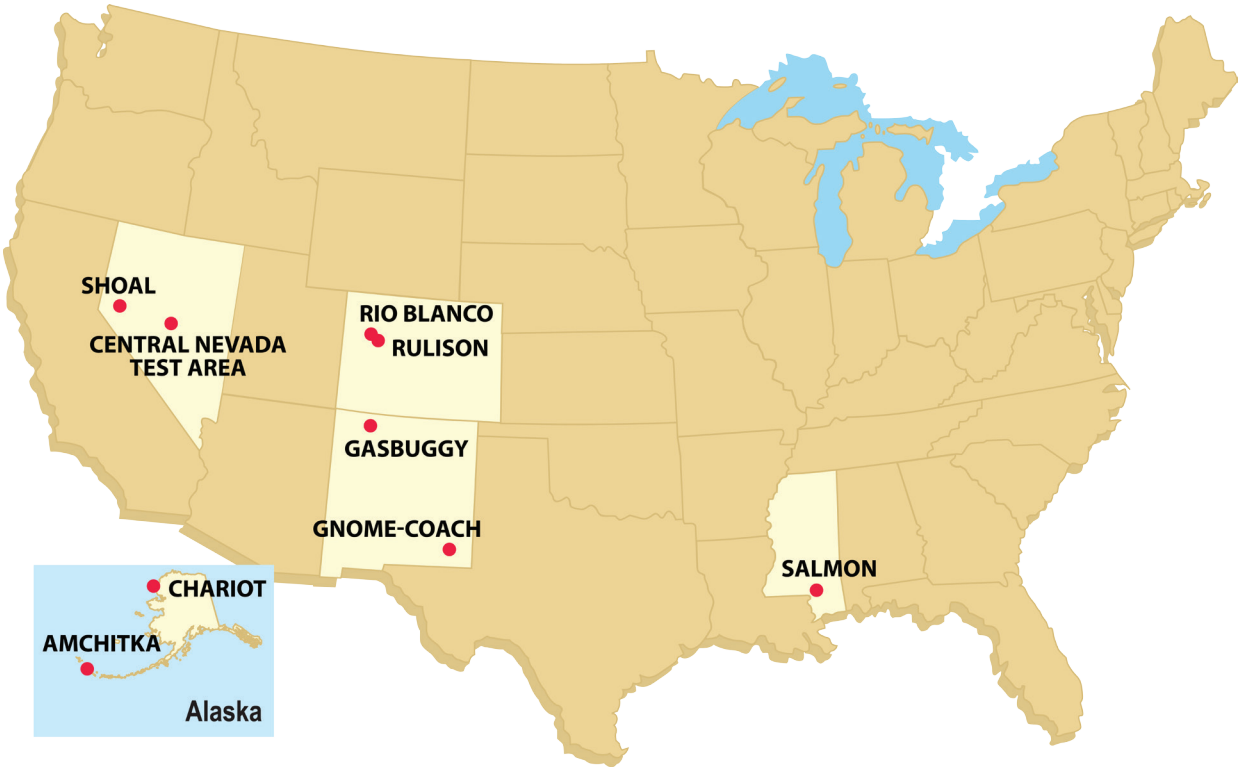
This fact sheet provides information about the Nevada Offsites.
These sites are managed by the U.S. Department of Energy Office of Legacy Management.

Introduction

Nevada Offsites refers to sites where underground nuclear tests and experiments were performed outside of the primary testing location formerly known as the Nevada Test Site (now the Nevada National Security Site). The nine sites included under this designation have different and sometimes unique regulatory oversight frameworks. Underground nuclear testing and associated activities were conducted by the U.S. Atomic Energy Commission (AEC), a predecessor of the U.S. Department of Energy (DOE), at sites in five states for various purposes as authorized by the Atomic Energy Act. Tests were conducted for peaceful applications of nuclear energy (e.g., stimulating natural gas production) under "Project Plowshare," consistent with the treaty on the nonproliferation of nuclear weapons. Tests were also conducted under the "Vela Uniform" which was a defense-related program to improve the ability of the U.S. to detect, identify, and locate underground nuclear explosions.

Weapons-related testing was conducted jointly with the U.S. Department of Defense while peaceful applications were conducted with industry partnerships. Underground detonations were conducted at all Nevada Offsites except one—the Chariot site—which was used only for environmental experiments. After studies were completed at these sites, surface facilities were decommissioned in accordance with standards for radiation protection that were in place at the time. Operations at all of the Nevada Offsites had ceased by the late 1970s.

With the creation of DOE's Environmental Management program in 1989, DOE was required to evaluate and mitigate the risks and hazards posed by the legacy of nuclear weapons production and testing. This prompted a re-evaluation of sites that were not remediated through formal federal regulatory programs, including the Nevada Offsites. Because these sites do not fall under any specific regulatory program, site environmental activities are being conducted consistent with the regulatory requirements of the environmental agencies for the states in which they reside. There are no plans to remediate subsurface contamination associated with the underground detonations at these sites; institutional controls are used to prevent improper access to these sites as appropriate.



Nevada Offsites Locations

Nevada Offsites Description

The Nevada Offsites include the following:

- The **Amchitka** site on Amchitka Island, Alaska, at the western end of the Aleutian Island chain. Three underground nuclear tests were conducted here, including the largest underground test in U.S. history.
- **Central Nevada Test Area** in south central Nevada. Three underground nuclear tests were conducted at this site to evaluate the suitability of the site for conducting higher-yield underground tests.
- The **Chariot** site in northwest Alaska. The intent at this site was to study the use of nuclear explosions for excavating a harbor. No nuclear test was conducted due to technical and stakeholder issues. Several bioenvironmental tests were carried out and a 5-day radioactive tracer test was conducted jointly by the AEC and the U.S. Geological Survey (USGS). The radioactive material was collected and later removed from the site. The State of Alaska provided a clean closure for removal of the tracer material.
- The **Gasbuggy** site in Rio Arriba County, New Mexico. A nuclear device was detonated underground at this site in an attempt to stimulate production of natural gas from deeply buried, low-permeability formations.
- The **Gnome-Coach** site in Eddy County, New Mexico. A nuclear device was detonated in an underground salt formation at this site to make seismic measurements and collect other data for the peaceful application of nuclear energy. Separate from the underground nuclear test, the AEC and the USGS jointly conducted a groundwater tracer test using four dissolved radionuclides.
- The **Rio Blanco** site in northwestern Colorado. Three underground nuclear devices were detonated simultaneously at this site to study the potential for recovering natural gas from low permeability geologic formations.
- The **Rulison** site near Parachute and Rifle, Colorado. An underground nuclear test was conducted here in an attempt to release commercially marketable quantities of natural gas from low permeability geologic formations.
- The **Salmon** site in Lamar County, Mississippi. Underground tests were conducted at this site to study seismic signals from detonations in a salt medium (the Tatum Salt Dome).
- The **Shoal** site in Churchill County, Nevada. This test was conducted in a seismically active region to improve the U.S.'s ability to detect, identify, and locate underground nuclear detonations.

The DOE Office of Legacy Management (LM) assumed responsibility for these sites on October 1, 2006, which consists primarily of long-term surveillance and maintenance. Long-term monitoring activities include groundwater sampling and analysis, ensuring that use restrictions remain in force, and maintaining site integrity to protect public health and the environment.

Regulatory Oversight

The Mississippi Department of Environmental Quality and the Mississippi Department of Health under the Voluntary Evaluation Program are the regulatory consultants for the Salmon site. The Alaska Department of Environmental Conservation under the Alaska Contaminated Sites Voluntary Cleanup Program is the regulatory consultant for the Amchitka site. The regulatory oversight process in Colorado involves collaboration with two branches of state government: the Colorado Department of Public Health and Environment and the Colorado Oil and Gas Conservation Commission. The two New Mexico sites are overseen by the New Mexico Environment Department under the New Mexico Voluntary Remediation Program. The two Nevada sites are under the regulatory authority of a Federal Facility Agreement and Consent Order administered by the Nevada Department of Environmental Protection.

Legacy Management Activities

Surface remediation has been completed for all of the Nevada Offsites where underground testing took place. Some form of institutional control is in place at all of these sites, though some are being further evaluated to determine if additional controls are needed. Some of the sites have proceeded to a stage of long-term surveillance and maintenance (LTS&M). Data are being collected at other sites to provide "proof-of-concept" information to assist in the development of the LTS&M plans. Documents describing DOE's position on resource usage outside the institutional controls, or path forward, have been provided to regulators and stakeholders at other sites.

Typical components of the LTS&M plans include:

- An understanding and documentation of the site conceptual model
- Empirical evidence that the site conceptual model is accurate
- Development of groundwater or natural gas monitoring to ensure safety
- A path forward document that details DOE's recommendations for resource usage and testing outside of the institutional control boundary
- Review and revision, as warranted, of the institutional controls at each site

At the Chariot site, LM is responsible for long-term management. LM responsibilities include managing site records and responding to stakeholder inquiries. No environmental monitoring is required at the site.

Contacts

Information about LM is available at http://energy.gov/lm.

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