



# Nye County, Nevada

## Bearing The Nation's Nuclear Waste Burden

Nye County Department of Natural Resources and Federal Facilities  
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## The Nye County Nuclear Burden

### Nye County White Papers

*Nye County is home to the Nevada Test Site, where over 900 nuclear tests have been conducted, and where two low-level nuclear waste disposal facilities are currently in operation.*

*Nye County is being considered by Congress as the site for storage and disposal facilities for all of the nation's high-level nuclear waste and spent nuclear fuel.*

*The Nye County white papers are intended to inform interested parties about Nye County and the issues associated with these current and prospective facilities. For more information contact:*

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Nye County's share of the nation's nuclear burden is historically high. This burden could be substantially increased by U.S. Department of Energy (DOE) low-level waste decisions and by high-level waste storage and disposal legislation now being considered by Congress.

### Atmospheric Testing

Between 1951 and 1958, a total of 100 atmospheric tests were conducted at the Nevada Test Site (NTS) releasing tens of millions of curies<sup>1</sup> of radioactivity, some of which has recently been detected 1,000 feet below Yucca Mountain, the proposed site for high-level nuclear waste disposal.

### Underground Testing

Between 1951 and 1992, a total of 829 underground tests were conducted in Nye County (828 at NTS and 1 at the Central Nevada Test Area). These tests had a total explosive force 1,000 times that of the bombs dropped on Hiroshima and Nagasaki, and released hundred's of millions of curies of radioactivity.

Much of this radioactivity is still in the ground and susceptible to transport by groundwater. Although area groundwater flow paths are not well understood, it is generally agreed that they flow from NTS toward the Nye County towns of Amargosa Valley and Beatty, and then

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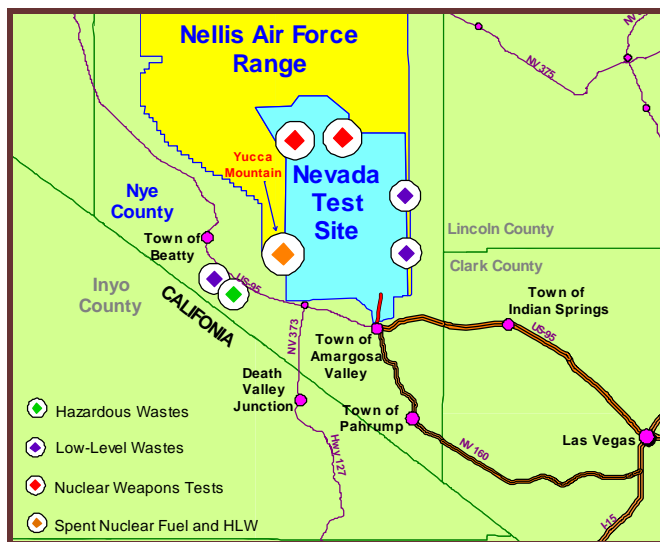
### Nye County Nuclear/Hazardous Material Burden:

#### Current:

- nuclear weapons testing contamination on portions of the Nevada Test Site
- two DOE low-level radioactive waste disposal sites on the Nevada Test Site
- a "mixed" waste disposal unit, a closed hazardous waste disposal unit, and an explosive ordinance disposal unit on the Nevada Test Site
- hazardous materials contamination on the Nellis Air Force Range and the Tonopah Test Range
- one inactive commercial low-level radioactive waste disposal site and one active commercial hazardous waste disposal site near the Town of Beatty

#### Prospective:

- the proposed Yucca Mountain repository for high-level nuclear waste and spent nuclear fuel
- a proposed interim storage facility for spent commercial reactor fuel
- contamination from ongoing sub-critical nuclear weapons testing on the Nevada Test Site
- contamination from full-scale nuclear weapons testing on the Nevada Test Site, should testing resume



*Nye County Radiological & Hazardous Materials Sites*

<sup>1</sup> a curie is a measure of the rate at which nuclear materials emit radiation.

(Continued from Page 1)

toward California.

### DOE Low-Level Radioactive Waste Disposal

Since 1961, DOE has used two areas of the Nevada Test Site for disposal of low-level radioactive wastes from 13 DOE facilities across the country. Through 1998, over 19 million cubic feet of material with a

begin in four years (2003) and implies a transportation route that would use 199 miles of rural 2-lane roads in Nye County that run directly through four communities. In several of these communities, the potential for radiation exposure is increased by the proximity of homes, schools and businesses to the narrow roadway, and by the slow movement of vehicles through the towns.

### Nuclear Contamination in Nye County

**Current:**

- Thousands of acres on the Nevada Test Site are contaminated from nuclear weapons testing.
- Radionuclides from nuclear testing are migrating toward the boundaries of the Nevada Test Site through groundwater systems that flow toward the towns of Beatty and Amargosa Valley.
- Radioactivity from the US Ecology commercial low-level waste disposal facility has been detected offsite.

**Prospective:**

- Waste packages which would be placed in the Yucca Mountain repository, if approved by Congress, would eventually deteriorate and release Radionuclides into the underlying groundwater systems which flow toward the Town of Amargosa Valley. DOE estimates that contamination would only occur after thousands of years and that contamination would be below acceptable levels.

### DOE High-Level Nuclear Waste Disposal

Yucca Mountain in Nye County is also the intended disposal site for highly-radioactive wastes from the nation's defense complex. The radioactive content of DOE-owned spent nuclear fuel was estimated at 836 million curies in December 1994, and that of other high-level wastes was estimated at 959 million curies.

radioactive content of 9.8 million curies has been buried at NTS. Over the next 20 years, the volume of low-level radioactive wastes buried at NTS could more than double. Pending DOE approval, five to ten additional sites could transfer low-level waste to Nye County.

### Commercial Low-Level Radioactive Waste Disposal

From 1962 through 1992, about five million cubic feet of commercial low-level radioactive wastes were buried at the U.S. Ecology site a few miles south of the Nye County town of Beatty. The radioactive content of these wastes is estimated at 641,000 curies. Elevated levels of certain types of radioactivity have been detected beyond the boundaries of the site, where it could move in groundwater systems towards the Nye County Town of Amargosa Valley. The U.S. Ecology site is still used for disposal of hazardous wastes.

### Commercial Spent Reactor Fuel Disposal

Yucca Mountain has been designated by Congress as the nation's only site to be studied for disposal of commercial spent nuclear reactor fuel.. The 30,000 metric tons of commercial spent fuel discharged from commercial reactors through 1994 contained 27 billion curies of radioactivity. A fully loaded repository would hold up to 86,000 metric tons of spent fuel. Proposed legislation in Congress would establish a centralized interim storage facility with a capacity of 40,000 metric tons at the Nevada Test Site. The legislation requires shipments to

### Nye County Nuclear Numbers

**Current:**

- 100...above-ground nuclear tests conducted in Nye County
- 829 ...underground nuclear tests conducted in Nye County.
- 56...curies of radioactivity remaining from above-ground testing in Nye County.
- 641,000...curies of radioactivity in materials buried at the US Ecology Beatty site, calculated at the time of burial.
- 9,800,000...curies of radioactivity in materials buried at low-level disposal sites on the Nevada Test Site in Nye County.
- > 300,000,000...curies of radioactivity remaining from underground testing in Nye County.

**Prospective:**

- 1,700,000,000... curies of radioactivity in DOE spent fuel and high-level nuclear defense waste proposed for burial at Yucca Mountain, as of 1994.
- 26,600,000,000...curies of radioactivity in 30,000 metric tons of spent nuclear fuel accumulated through 1994. A fully loaded Yucca Mountain would hold as much as 86,000 metric tons.