

## Oppenheimer's Office

Located half a block from the historic Santa Fe Plaza, at 109 E Palace Street, was the site of Robert Oppenheimer's office. In 1943, Oppenheimer established a five-room office at this location and hired a woman named Dorothy McKibbin to be his assistant. Dorothy handled correspondence for Los Alamos residents, and processed new scientists along with day laborers who were working for Oppenheimer under the code name, The Manhattan Project.

The storefront location was a disguise, marked with a sign that read, "US ENG-RS," which was a contraction for the word "Engineers". The historical entrance to Oppenheimer's office was through the courtyard, which also served as a place of pick-up for men traveling from Santa Fe to the headquarters of the Manhattan Project in Los Alamos, formerly a boy's ranch.

Isolation and secrecy were key to the nuclear arms race as German advancements in technology put pressure on the U.S. government to develop atomic weaponry with great speed and expedience. The two main ingredients needed to create a weapon of mass destruction were plutonium and uranium.

Uranium was an accidental discovery, during a period when companies were mining vanadium in the Carrizo Mountains of New Mexico, circa 1918. Although the federal government would not mine uranium until WWII, its primary use would be military weapons. Jobs were scarce on Indian reservations and within New Mexico during the early 1900s. Navajo and Pueblo Indians, particularly men who had just come back from the armed services, found work at the mines but were never warned about the dangers to health from the toxic radioactive industry.

Uranium mining has left a legacy of contamination on the land, with piles of waste tailings and leach beds left on the surface that disperse tiny contaminants through the air. One tiny particle of radioactive dust has the potential to spawn cancer in the lungs. Groundwater contaminated with toxic metals from the mining and dumping of waste materials have caused significant illnesses and death in communities in the Southwest region.

The Navajo Nation is host to 520 abandoned uranium sites, and three uranium mill sites that are so toxic they're at a Superfund status. According to health studies on Navajo communities, from the 1940s to 1980s cancer rates doubled from exposure to uranium and its radioactive decaying uranium products. Exposure to radioactivity also caused high rates of birth defects as well kidney disease.

## The First Atomic Bomb testing

In the early 1940s, most of northern New Mexico was a rural agrarian society with ranching communities containing Hispanic and indigenous populations that lacked running water and relied on cisterns and holding ponds for their water supply. At 5:30 a.m. on the morning of July 16, 1945, scientists, led by J. Robert Oppenheimer, detonated a plutonium bomb at a test site located on the U.S. Air Force base at Alamogordo, New Mexico.

Residents of neighboring communities were never warned or evacuated prior to the bomb testing, nor were they informed of potential public health hazard associated from the atomic testing fallout. The population living within a 60-mile radius of the bomb detonation site is estimated to have been 40,000 to 50,000 people. Radioactive fallout from the explosion was detected as far away as Rochester, New

York. Many New Mexico residents living immediately downwind were sickened by the fallout that fell on crops, game and livestock animals, and sources of water.

In 1990, the U.S. Congress passed a Radiation Exposure Compensation Act (RECA), which provided more than two billion dollars to over 45,000 nuclear workers and “downwinders,” or people who have lived near nuclear test sites conducted since World War II and may have been exposed to deadly radioactive fallout. Senator Ben Ray Lujan, a Democrat from New Mexico, and other members of Congress have attempted to amend RECA before the Act expires on July 11, 2022, to include the Tularosa Downwinders and expand eligibility for people who worked in uranium mines and mills, or transported uranium ore, and for their families who were exposed to radioactive contamination.

Navajos (Diné) who lost family members to sickness and death from radioactive contamination began fighting new proposals for uranium development in the 1990s. On April 19, 2005 Navajo Tribal Chairman Joe Shirley signed the Dine Natural Resources Protection Act into law. This Act was a bold protective measure that banned all uranium mining and processing anywhere on the Navajo Reservation; the largest reservation in the United States with an area that spans parts of New Mexico, Arizona and Utah. This ban was thought to protect the arid Southwest’s most precious natural resource – water – from uranium mining contamination, however in 2010 two permits were given to the mining company, Hydro Resources, Inc., for In Situ leaching (ISL), in the Navajo communities of Crownpoint and Church Rock, New Mexico.

According to the Natural Resources Defense Council (NRDC),

“The greatest threats to U.S. nuclear power plants are natural hazards (such as hurricanes, floods, and earthquakes), human error, mechanical failure, and design flaws can still trigger the release of radioactive contamination. “Leading science holds to the linear no-threshold (LNT) model for radiation protection, which assumes that even very small doses of radiation can still increase the risk for cancer,” says Bemnet Alemayehu, a staff scientist with NRDC’s Climate & Clean Energy Program.

The World Nuclear Industry Status Report estimates that the cost of generating nuclear energy in 2021 ranges between \$112 and \$189 per megawatt-hour (MWh), while solar power costs between \$36 and \$44 and onshore wind power comes in at \$29 to \$56. A major concern about peaceful nuclear power programs is the risk of nuclear proliferation—the spread of nuclear weapons and weapons-usable material, technology, and expertise. The same technology used to make nuclear fuel for power plants can also be used to produce explosive material for nuclear weapons.

The most pressing environmental risk associated with ISL mining, is the contamination of groundwater. ISL sends liquid underground to dissolve uranium directly from the underground ore. This solution is then pumped to the surface where the mineral can be recovered. Restoring natural groundwater conditions after completion of leaching operations is virtually impossible and has never been achieved.”

According to the human rights petition filed by the Eastern Navajo Dine' Against Uranium Mining, the U.S. government failed to protect the human rights of Indigenous communities when the Nuclear Regulatory Commission licensed Hydro Resources Inc. to build and operate in situ leach mines — in which chemicals are used to dissolve minerals out of the formation — near Crownpoint and Church Rock. Hydro Resources is now known as NuFuels, a subsidiary of the Canadian mining company Laramide Resources. The Navajo group is making several requests in its petition to the Inter-American Commission on Human Rights based in Washington, D.C., which asks the Nuclear Regulatory Commission to rescind or not renew the company's mining license, and that the federal government respect Navajo law and prioritize cultural views and practices. The group also is asking that a remediation plan be created and an environmental assessment be conducted of the effects of uranium mining and milling.

Mount Taylor can be seen from the top of the Cross of the Martyrs and the Santa Fe ski basin, and is considered a sacred site to the Navajo and is a pilgrimage place for as many as 30 American Indian tribes including the Apache, Arizona O'odam groups, Pai and Utes. The Pueblo of Acoma calls Mount Taylor, Kaweshtima, and believes that it is essential to maintaining Pueblo cultural heritage, a practice that provides resources needed to sustain surrounding communities. Concerned with the degradation of cultural property from mining and development, and the legacy of toxic mining activities within the Southwest region, the pueblos of Acoma, Laguna, Zuni and Hopi joined with the Navajo Nation to obtain an emergency declaration for Mount Taylor to be listed as a Traditional Cultural Property, in 2008.

This sacred mountain also has one of the richest known uranium reserves in the country. As a result, Mount Taylor is the site of several defunct uranium mines. The last operating mine in the region was the Mount Taylor Mine. This mine had been idle since the late 1990s until the state approved Rio Grande Resources' request to return the mine to "active" status, in 2017. Although the mine did not produce uranium ore, active mining would have been a cause for concern to Santa Fe residents as any waste tailings leach pings and mining dust on the surface would be picked up and blown toward the city by Westerly wind gusts. In December 2019, Rio Grande Resources announced the closure of the Mount Taylor Mine. Clean-up and closure plans will likely be completed by the end of 2022, with plans for long-term monitoring by New Mexico's regulatory agencies for at least 50 years.

Where does nuclear waste go?

As nuclear scientists hurried to create the first atomic bomb, nuclear research, weapons development, and testing created waste sites, filled containers, and saturated the vegetation and soils where wastewater was dumped. In the early 1990s, the Department of Energy (DOE) identified over 2,100 unlined dump sites containing harmful toxins at Los Alamos National Laboratory (LANL). As stormwater traverses over contaminated areas and waste piles, radioactive materials, industrial chemicals such as 1,4-dioxane, benzo-a-pyrene, and perchlorate, heavy metals, and PCBs are carried downstream and contaminated water penetrated into the aquifer below which is drinking water shared by tribal communities, Santa Fe, Espanola Valley, Albuquerque, Los Alamos, and other surrounding communities.

Santa Fe and Albuquerque municipalities divert Río Grande water and draw from wells downstream of LANL's discharges, for domestic purposes. New Mexicans should be concerned that many of the surface waters (rivers and streams) that flow through LANL are not meeting water quality standards. In 2021, requests were made by LANL to increase the allowable level of radioactive particles in the waterways.

The mission of Communities for Clean Water, a local advocacy group, is to ensure that community waters impacted by Los Alamos National Laboratory (LANL) are kept safe for drinking, agriculture, sacred ceremonies, and a sustainable future. This coalition is composed of many organizations including [Concerned Citizens for Nuclear Safety](#) (CCNS), [Amigos Bravos](#), [Honor Our Pueblo Existence](#) (HOPE), the [New Mexico Acequia Association](#), [Partnership for Earth Spirituality](#), and [Tewa Women United](#).

New Mexico officials and members of Congress have called for the federal government to address alleged problems with the U.S. Department of Energy's environmental cleanup operations at the Waste Isolation Pilot Plant. In 2021, DOE's Carlsbad Field Office approved 2,237 drums of low-level transuranic (TRU) waste from around the country to be disposed of at WIPP via burial in a salt deposit about 2,000 feet underground.

The DOE intends to increase production of plutonium pits at LANL in order to manufacture nuclear weapons, and plans to redefine high-level waste by radiation level, as opposed to the current method that considers where the waste was generated. In 2021, DOE also proposed a plan to send 34 tons of plutonium from the DOE's Savannah River Site in South Carolina and the Pantex Plant in northern Texas to LANL, for process and preparation in a "dilute and dispose" program, which would dilute high-level plutonium to lower its radioactivity so it could meet WIPP requirements. DOE is legally bound by settlement agreements with some states to prioritize their waste shipments rather than New Mexico's 60-year legacy of waste, which has yet to be cleaned-up.

#### Future of Uranium Energy

On January 3, 2022 shares of uranium stocks such as Energy Fuels were up 10.3%, **Ur-Energy** gained 9.8%, **Uranium Energy** surged 12.5%, and **Uranium Royalty** was up 12.6%. The sudden gains in stocks are thought to be a direct response to the European Commission's proposal to include both natural gas and nuclear power under its "taxonomy of environmentally sustainable economic activities," which would legally classify nuclear power as "green energy" and substantiate uranium suppliers as green energy stocks. According to French European Affairs Minister Clément Beaune, in order for Europe to reach carbon neutrality by 2050, it must employ the use of nuclear power. Should New Mexico determine nuclear energy as "clean" or "green energy" uranium mining, processing, shipments and waste will likely begin again.

There is no permanent repository for hazardous radioactive waste in the nation, and the federal government has asked New Mexico to be host to an interim storage facility, Holtec, for 40 years with plans for another 40-year permit renewal already declared. In February 2022, the New Mexico House Energy, Environment and Natural Resources Committee voted 5-4 to advance a bill that would ban the storage or disposal of spent nuclear fuel in the state — and would essentially kill Holtec's plans to build a repository for this high-level radioactive waste in the Carlsbad area.

There are 137 unreclaimed uranium mines that continue to expose rural and Indigenous communities to toxic and radioactive pollution. Uranium Mine Cleanup & Reclamation (Senate Bill SB-89) would start to

address this problem by creating a strategic cleanup plan and establishing an evolving fund for resource reclamation work. NM will train NM workforce to do the cleanup as part of economic development, as soon as \$16 billion dollars is obtained from the federal government.

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