The Western Shoshone and the Nevada Test Site

Figure 1 Craters from nuclear tests at the Nevada Test site. Photo courtesy from National Nuclear Security Administration Nevada Site Office.

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Introduction

Truman shocked the American public with his September 23, 1949 announcement: the Soviet Union successfully detonated an atomic bomb. A combination of secrecy, misunderstanding, strained relationships, irreconcilable ideological differences and no international regulation fired the gun that started the arms race. The arms race made the Cold War a war unlike any other, where both sides feared the potential disastrous results of direct confrontation. Instead, the United States and the Soviet Union took to proxy wars to fight their ideological battle. Nuclear weapons are central to understanding the Cold War in the United States, and no place felt the brunt of this responsibility more than the Nevada Test Site (NTS). Located a mere sixty-five miles from Las Vegas, the Nevada Test Site nuclear weapons scarred the landscape of the Great Basin and the Mojave deserts. Consisting of over 1,375 square miles, the Nevada Test Site tested nuclear weapons from 1951 to 1992.[1] Testing concentrated in several areas on the NTS: Frenchman Flat, Pahuta Mesa, Rainier Mesa, and Yucca Flat.[2] 928 nuclear tests were conducted over the lifespan of the NTS; 100 of those tests were aboveground from 1951 to 1962.[3] Nearly 90% of all United States nuclear tests took place at the NTS. Suffice to say, that state of Nevada lived up to its motto: "All for country." While the location has been renamed throughout the years (Nevada Proving Grounds, Nevada Test Site, and Nevada National

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[1] Terrence R. Fehner and F. G. Gosling, Department of Energy, *Origins of the Nevada Test Site,* DOE/MA-0519, December 2000, 9.

[2] Department of Energy, *United States Nuclear Tests July 1945 through September 1992*, DOE/NV-209 REV 15, December 2000, xviii.

[3] Ibid. This number may be misleading though, as sometimes multiple detonations occurred during nuclear tests. In the April 1989 volume 45, no. 3 *Bulletin of Atomic Scientists*, "Nevada's Dirty Little Secret," Riley R. Geary discussed that over 114 underground tests have been measured by the seismic equipment at Caltech. Also many witnesses have heard the unannounced tests over their radios. The amount of these "known but unacknowledged US tests represented at least 20 percent of the total U.S. testing program since 1963." According to this article, 114 underground tests are not in the DOE record.

Security Site), for consistency I will only refer to it as the Nevada Test Site.

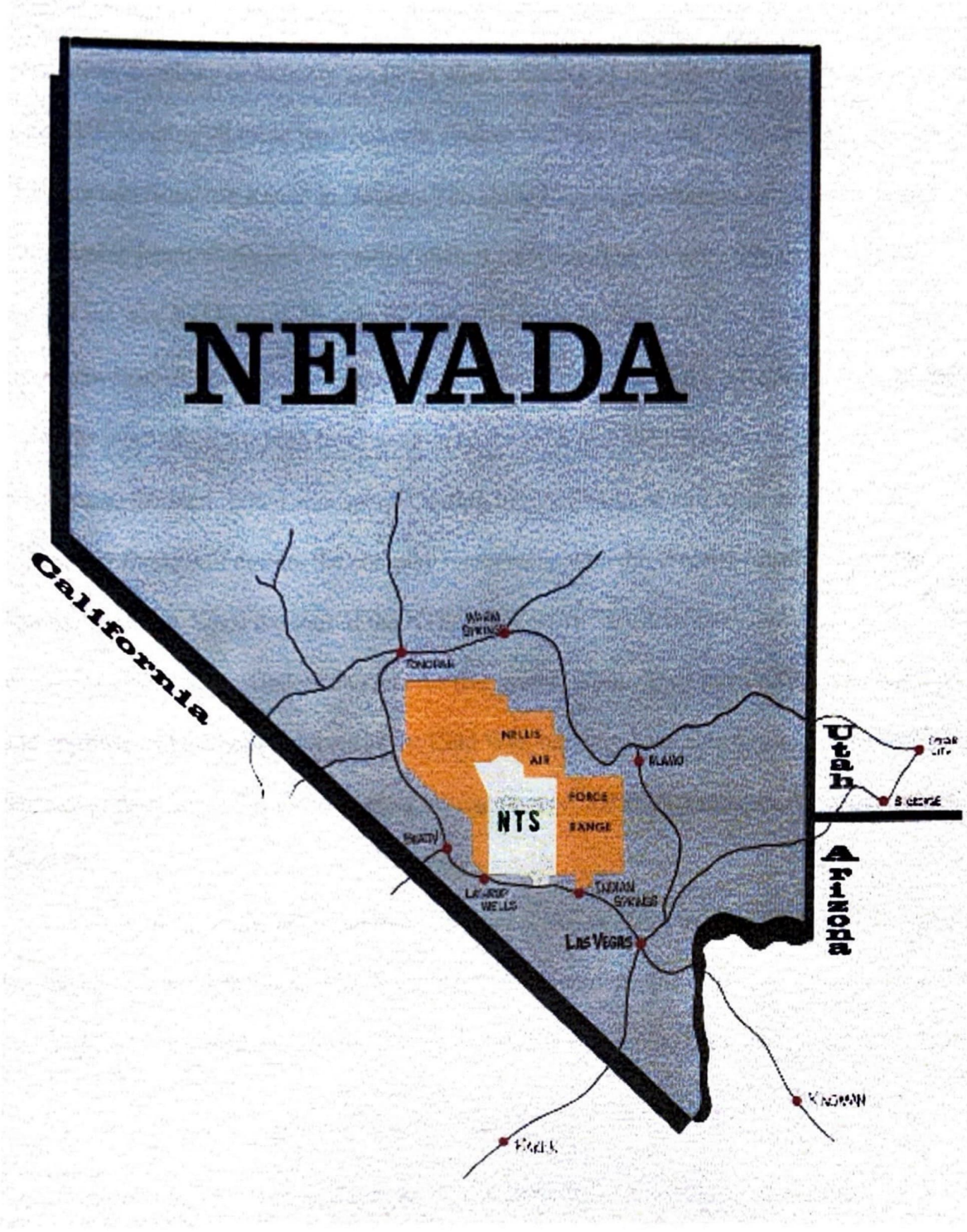

Figure 2: Map of the Nevada and the Nevada Test Site. Terrence R. Fehner and F. G. Gosling Department of Energy. Origins of the Nevada Test Site. DOE/MA-0519. (December 2000), 7.

Responsible for finding a continental test site, Project Nutmeg concluded that a continental test site "[needs] proper meteorological conditions, will result in no harm to population, economy or industry . . . [and] where absence of fall-out on populated areas can be assured."[4] Meeting all these requirements, Project Nutmeg approved of the Nellis Air Force Gunnery and Bombing Range in Nevada. The United States government saw the site as an inhospitable location, perfect for testing nuclear weapons. The Western Shoshone, Native Americans who had lived in Nevada for centuries, thought differently. In the 1940s, the United States government forcibly evacuated Shoshone families living on the intended NTS location.[5] Since the evacuation, the high level security of the NTS restricted Western Shoshone from returning to the land. When atmospheric testing began, Shoshone still lived nearby.

My thesis will discuss the complex relationship with the Western Shoshone and the Nevada Test Site. Since the start of the NTS, the Western Shoshone have transformed themselves from Downwinders into an effective protest group. They have suffered physically and spiritually at the consequences of the Cold War, but have been able to prevent further damage to their land. Even after nuclear testing stopped, the Western Shoshone fought against the NTS.

Western Shoshone called themselves *Newe Sogobia*. *Newe* translates into people while *Sogobia* means Mother Earth.[6] The Western Shoshone were people of Mother Earth. The land that they lived on stretched from the eastern half of Nevada, up to Idaho, and southwest to Death

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[4] Caroll L. Tyler to Dr. Lestor Hachta, August 20, 1953, in *United States Atomic Energy* Commission (Albuquerque,. New Mexico),1.

[5] John Wells, interviewed by author, Las Vegas, NV, December 16, 2010. Interestingly, while I could not find any written documents on the existence of a Western Shoshone community living on the Nevada Test Site, the Atomic Testing Museum and numerous interviews further validated this statement.

[6] Corbin Harney, *The Way It Is: One Water . . . One Air . . . One Mother Earth,* (Nevada: Blue Dolphin Publishing, 1995), 198.

Valley in California.[7] They maintained a symbiotic and spiritual relationship with nature. White fur trappers in the 1820s were the first Americans on their land, soon followed by migrants moving west and miners looking for gold. When the Civil War broke out, the United States government signed the Treaty of Ruby Valley in 1863 to protect transportation routes to California.

Figure 3 The Western Shoshone lands outlined in the Treaty of Ruby Valley 1863. Image courtesy of http://www.h-o-m-e.org/Shoshone/.

[7] Ibid.

The treaty does not cede land. Instead it is a "Treaty of Peace and Friendship."[8] Signed to end the Shoshone hostilities towards "emigrant trains, the mail and telegraph lines, and upon the citizens of the United States," the treaty permitted mines, military outposts, railroads, telegraph lines, and the protection of American citizens.[9] There was no transfer of lands from the Western Shoshone to the United States. The United States promised to compensate the Shoshone for any damage caused to land by the Americans. The Western Shoshone conflict with the Nevada Test Site was part of a larger struggle for land rights promised in the Treaty of Ruby Valley.[10]

Because the time span of this essay covers over six decades, the government agency in charge of the NTS also changed titles. The Atomic Energy Act of 1946 established the United States Atomic Energy Commission (AEC), and it transferred nuclear power and weapons control from the military (Manhattan Project) to the civilian sector.[11] The Energy Reorganization Act of 1974 abolished the AEC and split its responsibilities into the Energy Reorganization Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC). ERDA developed nuclear weapons, while the NRC oversaw safety matters. ERDA had a short life, and in 1977 it became the United States Department of Energy (DOE).

At first, US nuclear testing did not concentrate at NTS. The Pacific Proving Grounds shared the burden of nuclear testing. But the cost and inconvenience of maintaining a test site so far from the US took its toll. The AEC, in 1957, emphasized the importance of the NTS, since "the weapons laboratories' backyard workshop in Nevada has permitted tests to be set up quickly and be conducted more frequently than . . . possible in the Pacific. It has resulted in major

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[8] "Treaty of Ruby Valley: United States Treaty with the Western Shoshoni, 1863," October 1, 1863, *U.S. Statues at large.*

[9] Ibid.

[10] The United States government argued that the Western Shoshone lost their land through gradual encroachment of settlers. In 2004, the controversial Western Shoshone Reclamation Bill passed, and gave Western Shoshone individuals $20,000 each. Traditional Western Shoshone claimed that the Bill disregarded that many Western Shoshone did not want to accept money for land they never sold.

[11] *Atomic Energy Act of 1946*, Public Law 585, 79th Congress., 2nd sess. (August 1, 1946), 2.

savings in time . . . utilization of scientific and technical manpower, and in money."[12] When the United States signed the Partial Atmospheric Test Ban Treaty in 1963, American testing ceased in the Pacific.

Atmospheric tests, also known as above-ground tests, produced massive floating clouds of radioactive fallout, which silently fell on unsuspecting nearby populations. Besides atmospheric tests, the United States conducted underground and underwater tests. Usually, underground testing did not cause the same danger as atmospheric testing, and underwater testing was impossible to conduct in the dry Nevada environment. Medical horror stories plagued populations exposed to fallout.

Fallout clouds, filled with ionizing radiation, hovered over communities. Ionizing radiation occurs naturally, but nuclear tests greatly increase the amount of it in the environment. Radiation itself is a general term, describing "any process that transmits energy through space or material away from a source."[13] Ionizing radiation is a more powerful source of energy, and when it comes into contact with an atom it can remove electrons. If ionizing radiation comes into contact with the humans, it "can disrupt the atoms and molecules in the body," destroying the basic building blocks of cells that construct the human body.[14] Molecules, united by chemical bonds, can be altered, since "a typical ionization releases six to seven times the energy needed to break the chemical bond between two carbon atoms."[15] Eventually, this ionizing radiation can damage or kill cells. If cells are damaged, they can mutate, become malignant, and turn

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[12] Atomic Energy Commission: Nevada Test Organization, *Background Information on Nevada Nuclear Tests (July 15, 1957),* Las Vegas, Nevada: Office of Test Information, 24.
[13] Department of Energy: Advisory Committee on Human Radiation Experiments, "What is Ionizing Radiation?" Department of Energy,http://www.hss.energy.gov/HealthSafety/ohre/roadmap/achre/intro_9_1.html (accessed March 2, 2011).
[14] Ibid.
[15] Department of Energy: Advisory Committee on Human Radiation Experiments, "How Does Radiation Affect Humans?" Department of Energy, http://www.hss.energy.gov/HealthSafety/ohre/roadmap/achre /intro_9_5.html (accessed March 2, 2011).

cancerous. Reproductive germ cells disrupted by ionizing radiation can result in damaged DNA which can produce genetic defects.[16] Radiation poisoning, also known as radiation sickness, occurs when humans are exposed to too much ionizing radiation. Because the fallout clouds did not fall uniformly, members of the same community received different doses. Resulting health effects depended on the amount of exposure, ranging from an upset stomach to rare cancers.

Nuclear explosions also created radionuclides, also known as radioisotopes. Radionuclides are unstable isotopes that emit ionizing radiation. Some radionuclides produced by nuclear testing are americium-241, cesium-137, iodine-131, plutonium, strontium-90, tritium, and technetium-99.[17] These radionuclides do not occur naturally. Like ionizing radiation, the health problems caused by radionuclides depend on dose. If ingested, some radionuclides harm specific areas of the body; strontium-90 damages bones, while iodine-131 targets the thyroid.

Since the discovery of X-rays, scientists grasped the danger of high levels of radiation. The safety regulations that scientists followed since the late 1800s carried on to the Manhattan Project. By the time the war was over, the AEC accepted that high levels of radiation caused cancer. Controversy remained over the health effects that low doses of radiation could cause. In 1953, "there was no easy way to determine the health hazard of . . . fallout."[18] During atmospheric testing, the AEC established a maximum weekly exposure for the citizens, based off the standards of the National Committee on Radiation Protection and the International Commission on Radiological Protection.[19]

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[16] Ibid.
[17] Environmental Protection Agency, "Commonly Encountered Radionuclides," Environmental Protection Agency, http://www.epa.gov/rpdweb00/radionuclides/index.html (accessed March 3, 2011).
[18] Richard G. Hewlett and Jack M. Holl, *Atoms for Peace and War 1953 – 1961: Eisenhower and the Atomic Energy Commission* (Berkeley: University of California Press, 1989) 153.
[19] Ibid., 152.

Safety at the NTS also included off-site safety. The AEC acknowledged the danger of fallout and "an advisory panel was set up to advise the test manager and test direct on all matters of public safety. Such a group considered and approved every shot first at the Nevada Proving Ground. Each panel is made up of specialists in the fields of atomic medicine, radiation health protection, blast, and meteorology."[20] During the 1955 Operation Teapot test series, off-site radiological safety activities included monitoring populated areas and non-populated areas, distributing and studying film badges, focusing on fallout near schools, and testing the concentration of radioactivity in water and milk.[21] Despite these safety features, Americans living near and working at the NTS started to show signs of radiation poisoning. Exposed Americans argued the AEC did not tell them about the true danger of ionizing radiation.

The discussion of Downwinders and other Americans unknowingly exposed to ionizing radiation by the NTS peaked in the 1980s. Scientific studies and lawsuits sided with the victims. Those included in the discussion of exposed Americans were the rural Latter Day Saints living in Utah; sheepherders, who lost both their flocks and their health; atomic veterans who conducted maneuvers underneath the mushroom clouds; and test site workers who worked daily in the contamination. The Western Shoshone, despite their multifaceted relationship with the NTS, is missing from the dialogue.

In chapter one, I describe the experience of the well-documented exposed Americans. In chapter two, I will argue that the Western Shoshone are Downwinders. Many Western Shoshone lived near the NTS, practicing their traditional hunting and gathering. When the fallout clouds drifted over their homes, Western Shoshone suffered from radiation poisoning. Chapter two will

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[20] Howard L. Andrews, "Radioactive Fallout From Bomb Clouds." *Science,* 122, no. 3167. (September 9, 1955): 453.

[21] Atomic Energy Commission, *Report of Off-Site Radiological Safety Activities: Operation Teapot Nevada Test Site Spring 1955,* prepared by J.B. Sanders, O.R. Placak and M.W. Carter, Santa Fe Operations Office: The Test Division, 1955, 19.

discuss how nuclear testing harmed more than the bodies of the Western Shoshone. It also damaged their spiritual connection to the land. The ionizing radiation destroyed much of the environment that the Shoshone had viewed as sacred for centuries. Spiritually the Western Shoshone suffered, but through the spiritual leadership of Corbin Harney, the Shoshone became more than victims. Along with the Johnnie Bobb, the Sekhmet Temple and Peace Camp, the spiritual suffering turned into spiritual healing.

The fourth chapter details the Western Shoshone transformation from victims to active protesters. The Shoshone worked with the Nevada Desert Experience (NDE) and American Peace Test (APT) to stage some of the largest peace and anti-nuclear protests against the NTS. The greatest accomplishment of these protests was the cancellation of the 2007 Divine Strake Test. Fearing that the conventional aboveground explosion would send past ionizing radiation into the atmosphere, the Western Shoshone and other groups were effective at getting the DOE to indefinitely cancel the test. Chapter five explains Yucca Mountain, which sits on the border of the NTS. The proposed Yucca Mountain Waste Repository Site would house the nation's nuclear waste. Western Shoshone opposed Yucca Mountain from its proposal, and feared the future consequences of such a site. The prophetic myth of Yucca Mountain, and the reality of nuclear waste, prompted the Shoshone to turn to the United Nations. The Obama Administration cut Yucca Mountain funding and ended the program. My final chapter will explain why the Shoshone are not considered Downwinders, how the NTS has treated their spiritual needs, and how the Atomic Testing Museum has furthered an incorrect analysis of the Western Shoshone relationship with the NTS.

The Western Shoshone story intertwined with the NTS for more than five decades, but they are missing from the history of continental testing. The NTS is one of the most bombed

places on earth, and the Western Shoshone experienced the testing first hand. The study of the dynamic relationship strengthens our knowledge about the unintended consequences that the Cold War and nuclear weapons had on American citizens.

Chapter 1: Americans and Radiation Poisoning

While physicists had unlocked mysteries of the universe by learning how to split and fuse atoms, they had still not determined how to deal with simpler things, such as wind. Wind became a major obstacle in conducting nuclear testing at the Nevada Test Site. The direction of the wind determined whether a test shot occurred or would be postponed. During atmospheric testing in the 1950s, the wind could potentially blow a fallout cloud towards a city. Otto Frisch, who would later work on the Manhattan Project, wrote, in 1939, that because of "the spread of radioactive substances with the wind, the bomb could probably not be used without killing large numbers of civilians."[22] Relative distance from the Nevada Test Site protected communities in Nevada and Utah from the shockwave and blast of nuclear weapons, but this buffer did not protect residents from ionizing radiation blown by the wind.

The Atomic Energy Commission pronounced four wind directions that were safe: "one, spanning fifty-five degrees, is to the north. Another covering only twenty-five degrees, is to the southwest. The third, covering only fourteen degrees, is to the southeast. The fourth, covering twenty-four degrees, extends east-northwest."[23] These parameters meant the AEC often rescheduled test shots three, four, perhaps five times. The AEC decided the populations in Las Vegas and California needed to be protected from the fallout clouds, "so it all went to the

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[22] Robert Jay Lifton and Greg Mitchell, *Hiroshima in America: Fifty Years of Denial* (New York: G.P Putnam's Sons, 1995), 42 – 43.
[23] Gladwin Hill, "Why Atom Blast is Often Delayed," *New York Times,* May 5, 1955.

Downwinders in Utah."[24] The prevailing notion of fallout is that all Downwinders were in Utah, and they were the only community exposed to ionizing radiation.

Ionizing radiation claimed other victims; Americans who have been largely left out of the history of continental testing. While historians told the stories of other Americans exposed to ionizing radiation, such as the Atomic Veterans and Nevada Test Site workers, a major community has largely been ignored: the Western Shoshone Nation. To understand the experience of the Shoshone, we must first look at the well documented victims in Utah and Nevada.

Rural Latter Day Saints comprised the majority of the Downwinders in Utah. These Mormons held a strong faith in both the Church of Latter Day Saints and the United States government. Darlene Phillips "was raised in a Mormon family, raised always to be patriotic, always to be obedient, and never to question at all."[25] This passivity and unwillingness to question in Mormon culture proved deadly when coupled with the AEC's failure to warn the public on the dangers of fallout. During the mid-twentieth century, the Church of Latter Day Saints transformed in American society. The Church grew "from about 1.1 million to more than 13.5 million. In 1950, there were 180 organized stakes (the basic unit of Church organization . . .), about 47 percent of them in Utah. In 2008, there were 2,849 organized stakes, 49 percent of them outside the United States."[26] As a minority group, Mormons lived on the edge of American society still haunted by their past reputation as polygamists. Only when their numbers increased, did their status and political power also grow.

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[24] Anne Welsh, interviewed by Suzanne Becker, June 23, 2004, Nevada Test Site Oral History Project, University of Nevada, Las Vegas.
[25] Carole Gallagher, *American Ground Zero: The Secret Nuclear War* (Cambridge: MIT Press, 1993) 301.
[26] *Mormonism: A Historical Encyclopedia,* ed. W. Paul Reeve and Ardis E. Parshall (Santa Barbara, CA: ABC-CLIO, 2010), xxiv.

These Mormons "don't drink . . . don't smoke . . . go about their business . . . don't make waves . . . just do their thing . . . they're not going to protest."[27] Knowing that these communities adhered to this strict Mormon culture, the AEC doubted they would cause trouble. The patriotic Mormons viewed their proximity to these highly important national security related weapons tests as an honor. During the McCarthyism of the Cold War, if an American did not openly support the United States and the ever expanding nuclear arsenal, that person was branded a communist. When Darlene Phillips asked her bishop if she should demonstrate against the tests, her bishop said she should not, because the protesters were communists. Phillips' pastor also reminded her that the first law of God was obedience, and she needed to be loyal to her country.[28] Surrounded in a culture of obedience and patriotism, Mormons living near the Nevada Test Site never believed their government would put them in harm's way. But danger floated right over the horizon.

On May 19, 1953 an exceptionally radiated fallout cloud drifted over St. George, Utah. St. George, a small rural Mormon town on the edge of the southwestern edge of the Utah border, was directly east from the NTS. Shot Harry, part of the Upshot-Knothole test series, produced this 'dirty' cloud. Locals renamed it "Dirty Harry." The popularity of Shot Harry made St. George the most notable downwind city.[29] Radiation poisoning plagued St. George residents. Almost ten years later, "the AEC's Fallout Studies Branch produced a report indicating that after the "Harry" test in 1953, children living in St. George, Utah might have received doses to the thyroid of radioiodine as high as 120 to 440 rad. The AEC tried to suppress the report, but it was

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[27] Gallagher, 127.
[28] Ibid., 303.
[29] Coincidently, when the fallout cloud drifted over St. George, Howard Hughes filmed *The Conqueror*. The film starred John Wayne, who would later die from cancer. Of the 220 workers on the film, about 90 died from cancer.

eventually released."[30] The well-known incident at St. George forever connected Mormons and fallout.

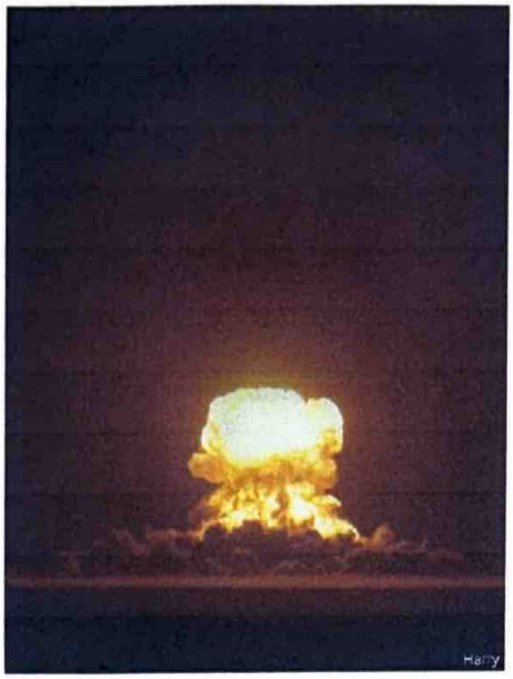

Figure 4 32kt, Nevada Test Site, 19.May.1953 Photo courtesy http://www.cddc.vt.edu/host/atomic/testpix/index.html

Other Americans exposed by NTS activities include the Atomic Veterans. Atomic Veterans were members of the military who participated in exercises under the glow of the mushroom cloud. The United States government wanted to "determine the effects of radiation and blast on military equipment, and to give combat troops experience in maneuvers with nuclear weapons."[31] Named Camp Desert Rock, soldiers crouched in trenches in the early morning and watched the explosions. Later, these soldiers would march around the blackened desert towards ground zero.[32] Reason "Fred" Warehime participated in atomic maneuvers in 1953. His unit was "only 300 yards from ground zero . . . then we got a sunburn, and the guys all

[30] Pat Ortmeyer and Arjun Makhijani, "Worse Than We Knew," *The Bulletin of Atomic Scientists* (November/December 1997), 49.
[31] Hewlett and Holl, 150.
[32] Gallagher, 100.

started throwing up in the truck going back."[33] Sometimes the only decontamination available after exposure to high levels of ionizing radiation was "whisk brooms to get the dust off," accompanied with a long shower.[34] Many soldiers became sterile, lost their teeth and hair, and developed cancer.

Even individuals working at the NTS were not always privy to the dangers of fallout. These were "normal, patriotic, and hardworking people . . . who needed these jobs to keep their families going."[35] NTS workers, such as Keith Prescott, did not think their jobs put them at risk. When an atmospheric test occurred, Prescott recalled"[the NTS] would give us a pair of dark glasses to wear and we'd sit there and watch it go off."[36] Workers never realized that the radioactive dust on their clothing went back to their homes, further exposing their families. Underground testing also put NTS workers in danger. When the 1970 underground test Baneberry vented through the ground and released a fallout cloud, the medical team at NTS reassured test site worker Walter Adkins that "there wasn't a thing wrong with me, and I was strong!"[37] His cancer proved otherwise. These workers were in a tight spot, they were not allowed to complain about their illnesses because if they did so, they would lose their jobs.[38] The threat of unemployment kept many workers from questioning the consequences of the nuclear testing.

Because this was still the dawn of television, "informationally the AEC was the sole source, both *vis a vis* the reporters there and *vis a vis* the American people as a whole."[39] The AEC repeatedly reassured the American public that "fallout radiation actually absorbed by

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[33] Ibid., 74.
[34] Ibid., 70.
[35] Ibid., 25.
[36] Gallagher, 9.
[37] Ibid., 17.
[38] Ibid.,. 9.
[39] Philip L. Fradkin , *Fallout: An American Nuclear Tragedy* (Tucson: University of Arizona Press, 1989) 19.

residents of the United States from all nuclear explosions to date [as of 1955]... adds up to about the same exposure as one chest X-ray."[40] Explaining ionizing radiation in the terms of a simple X-ray demystified the invisible and deadly power of ionizing radiation. To offset the public from worrying about testing, the AEC argued that natural radiation exposed Americans daily in the form of "cosmic rays, radium and other radioactive elements in the soil, water, and air."[41] The AEC downplayed the dangers of fallout by making exposure to ionizing radiation normal, as safe as a day out in the sun.

Despite emphasizing natural and low risk ionizing radiation, the AEC also stated the precautions that Americans had to take when exposed. Usually a bath or a shower would be sufficient. The exposed individual just needed to use soap and water, along with "corn meal added . . . [which] would help scrub off particles sticking to the skin."[42] Despite being physically exposed, fallout still was not dangerous; it could be cleaned with a little soap and hot water. The AEC also instructed that exposed clothing be buried or burned, and cars that had driven through fallout clouds to be washed down. There seemed to be a quick fix for fallout after members of the public had been exposed. Despite what the AEC told the American public, testing in Pacific Proving Ground years earlier disproved the effectiveness of soap and water. Dr. David Bradley, a physician who worked with the 1946 Operation Crossroads test series at the Pacific Proving Ground, documented the attempts to decontaminate ships from ionizing radiation. Bradley noted that "salt, water, lye, foamite, soap, spread with liberal amounts of Navy profanity, have no value in cleaning these ships of their coast of radioactivity."[43] Overall, "the AEC was well aware of the danger of radiation to human health by the late 1940s. Elaborate safety precautions were

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[40] Robert T. Hartmann, "Fallout Could Kill Everyone Inside Area of 7000 Square Miles," *Los Angeles Times*, February 16, 1955.
[41] Ibid.
[42] Experts Explode Fall-Out Myths," *The New York Times,* April 17, 1955.
[43] David Bradley, *No Place to Hide,* (New England: University Press of New England, 1946), 131.

instituted in the national laboratories that were not available or made known to the downwind population."[44] The AEC did not grant access to Downwinders about the "substantial body of knowledge [that] had been built up and reviewed . . . on the properties of ionizing radiation."[45] Because Downwinders were not scientists, they could not dispute what the AEC told them.

A portion of the Downwinders from Nevada and Utah worked as sheepherders, a livelihood that did not grant access into understanding physics and radiation. The sheep tended to be the first victims from fallout. These sheep, along with other grazing animals "ingest materials over a relatively large area" that allows "significantly larger amounts of radioactive iodine [to] reach the thyroid."[46] Dr. Gordon Dunning, a health physicist with the Division of Biology and Medicine in the AEC, said in 1955 that "data indicated that the highest measured radiation dose to the thyroids of animals has been below the level that might produce harmful effects."[47] According to Dunning, the nuclear tests had no negative effect on the livestock of Utah and Nevada. The ranchers needed only to point to the "two-headed lambs . . . [and] piles of dead lambs that were born dead" to disprove Dr. Dunning's assessment.[48] Nightmarish defects in lambs became common, as one rancher recalled "a third of our lambs had defects. They were the most horrible-looking things. Some of them would have just half a face and some no ears, and some had only two or three legs, or no tails. And no eyes, some of them."[49] All of these sheep had been exposed to fallout, whether it came from the grass they grazed or by radioactive particles falling down from an atmospheric test. The AEC claimed that these sheep ate poisonous plants or were victims of malnutrition. According to the AEC, fallout was never to blame.

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[44] Philip L. Fradkin , *Fallout: An American Nuclear Tragedy*, 183 – 184.
[45] Edward Pochin, *Nuclear Radiation: Risk and Benefits*, ed. Sir Alec Merrison (New York: Oxford University Press, 1983), 15.
[46] Gordon M. Dunning, "Effects of Nuclear Weapons Testing," *The Scientific Monthly* 81, no. 6 (December 1955) 266.
[47] Ibid., 267.
[48] Gallagher, 125.
[49] Ibid., 139.

The loss of sheep financially devastated these herders. Between May and June 1953 "of 14,000 sheep on the range east of the Nevada Test Site, roughly 4,500 died."[50] The ranchers took legal action. In 1956, in *Bulloch vs. The United States,* the ranchers sued the United States government, asking for compensation for their dead sheep. The ranchers lost; Judge A. Sherman Christensen's opinion concluded "the evidence indicates . . . that the maximum radioactive doses . . . was substantially less than would have caused damage . . . that the symptoms . . . of the sheep were not effects of radiation."[51] In 1982, Judge Christensen vacated his original ruling, stating that evidence presented by the United States government was fraudulent.[52] A year later, the United States Court of Appeals for the Tenth Circuit in Denver reversed Christensen's order in 1983.[53] Ranchers suffered financially from losing sheep, but these sheep were more than just a loss of income. The sheep's death foreshadowed what would later happen to humans.

The unsuspecting population had no idea of the dangers of living near the Nevada Test Site. Dr. Ralph Lapp, one of the rare scientists who spoke out against testing during the 1950s, wrote that "education about the biological effects of nuclear radiation is an absolute prerequisite for the survival of mankind."[54] Lapp concluded that the "long range effects of radioactive fallout [have] . . . implications for the human race."[55] He was right. Ionizing radiation caused devastating effects to the fetuses of pregnant women. Horror stories about women having five and six miscarriages were frequent in the communities near the Nevada Test Site. When Trudie Ballard was pregnant, she knew something felt wrong. When she bent over, something solid fell inside of her uterus. The doctor gave her a sonogram, and told her "she had gotten pregnant but it

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[50] Ibid., xvii.
[51] Bulloch v. United States, 145 F Supp. 848 (D.C. Utah. 1956).
[52] Bulloch v. United States, 95. F.R.D. 123 (D.C. Utah, 1982).
[53] Gallagher, xviii.
[54] "Atom Writer warns on Fallout Effect," *The New York Times*, June 21, 1956.
[55] Ibid.

never developed into a fetus, the cells went crazy. He said it was just like a bunch of grapes of different sizes, larger ones and small ones."[56] Some women did give birth, their newborns died soon after or had permanent defects. While these deformities did not always occur, the number of defects in children increased rapidly once testing began nearby. Martha Bordoli Laird gave birth to "a little boy, and from the hips down the legs were all shriveled up and black. It lived for a couple of hours."[57] Miscarriages were all too frequent among pregnant Downwinders. Some children with birth defects lived a difficult life. The rural communities viewed birth defects as shameful and "something to hide and to keep away from people."[58] While birth defects occur without exposure, the frequency of these birth defects dramatically increased in the mid-1950s.

Children, with weaker immune systems than adults, also became vulnerable. Rare diseases suddenly began appearing in Nevada and Utah. In 1953, *The Bulletin of Atomic Scientists* condensed the AEC's Thirteenth Semiannual Report entitled *Assuring Public Safety in Continental Weapons Tests.* According to the AEC, evidence from the "20 explosions of atomic bombs at the Nevada Proving Ground . . . [shows there is] no immediate nor long-range hazard to human health."[59] In the years following 1953, children began to show effects of exposure. While sheep and livestock had burns, "at school, children broke out with rashes from the radiation."[60] The AEC only warned citizens to stay inside when fallout clouds hovered over their homes. After the clouds disappeared, people went outside. As a child, Diane Nelson and her siblings "would play like that was our snow. Then we would go out and write our names in it. It would be thick enough . . . It would burn your fingers, it would irritate you, and you would have

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[56] Gallagher, 143.
[57] Ibid., 117.
[58] Ibid., 162.
[59] Anthony Turkevich, "Assuring Public Safety in Continental Weapons Tests: AEC Thirteenth Semiannual Report." *Bulletin of Atomic Scientists* 9, no. 3. (April 1953): 89.
[60] Gallagher, 117.

to wash your hands."[61] Claudia Boshell Peterson remembers that "when I was in sixth grade one of the little boys that was a year behind us died of leukemia . . . One of my friends had his leg amputated from cancer . . . And then my sister . . . had melanoma."[62] Cancer was rampant in these communities, and children were not spared. Glenna Orton had never heard of a leukemia death, until "seven young people [died] of leukemia in two years around 1957."[63]

Ionizing radiation did not discriminate. Unborn children, military personnel, the young, Nevada Test Site workers, Mormons, and sheep were all vulnerable. The 100 atmospheric tests conducted in Nevada during the fifties repeatedly exposed these communities. Phillip L. Fradkin summed it up best: "[T]he public information program was 'woefully deficient' in three ways: offsite residents were not told of cancer risks, they were not instructed in simple precautionary measures that could have protected them, and the warning to go indoors' failed to provide enough information soon enough to be useful and effective."[64] Not until 1984 did the case of Downwinders reach the courts.

In *Irene Allen vs. United States,* the Downwinders sought justice. Local residents brought a Federal Tort Claims Act lawsuit against the federal government, "contending that radioactive fallout from open-air atomic testing conducted over many years had infected plaintiffs, and that defendant had negligently failed to monitor that fallout and warn plaintiff's community about that fallout."[65] The twenty-four plaintiffs "with cancer were chosen as test cases, among them four children who had died and 19 adults, five of them still alive."[66] Ten of the defendants received compensation because the government put them at risk. This decision was reversed in

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[61] Ibid., 157.
[62] Ibid., 125.
[63] Ibid., 179
[64] Philip L. Fradkin , *Fallout: An American Nuclear Tragedy*, 230.
[65] Irene Allen v. United States, 588 F. Supp. 247. (D.C. Utah, 1984).
[66] Gallagher, xviii.

1987, when a panel of judges ruled that the Federal Tort Claims Act protected atmospheric tests.[67] Not until1990 the Radiation Exposure Compensation Act (RECA) passed Congress did victims receive compensation.

RECA paid $50,000 to individuals living downwind of the Nevada Test Site and $75,000 to Nevada Test Site workers. Payment would be awarded if "the claimant contracted one of the follow specific diseases: leukemia. . ., multiple myeloma, lymphomas . . . and primary cancer of the thyroid, male or female breast, esophagus, stomach, pharynx, small intestine, pancreas, bile ducts, gall bladder, salivary gland, urinary bladder, brain, colon, ovary, or liver . . . or lung."[68] As of March 2011, RECA approved 15,025 Downwinder cases, totaling $751,220,000 in payment; 1,545 Nevada Test Site workers received $110,778,304.[69] Atomic Veterans have not had the same luck. In 1979, Orville E. Kelly founded the National Association of Atomic Veterans (NAAV). The NAAV represented WWII soldiers exposed at Hiroshima and Nagasaki, and soldiers who participated in testing at the Pacific Proving Ground.[70] Congress has proposed Atomic Veteran Relief Acts in 2005, 2007, and 2009, but all have failed. Instead, the United States Department of Veteran Affairs approved benefits on a case by case basis.

A variety of Americans suffered from continental testing, and all of them had one thing in common: a proximity to the Nevada Test Site. It is perplexing that the discussion of Americans exposed from NTS nuclear testing excludes the Western Shoshone. The next chapter will discuss why the Western Shoshone are Downwinders.

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[67] Ibid., xciii.
[68] Radiation Exposure Compensation Act, "About The Program," http://www.justice.gov/civil/torts/const/reca/about.htm, (accessed March 12, 2011).
[69] Department of Energy, "Radiation Exposure Compensation System Claims to Date Summary of Claims Received by 03/17/2011, All Claims," http://www.justice.gov/civil/omp/omi/Tre_SysClaimsToDateSum.pdf (accessed March 12, 2011).
[70] "Veterans Exposed to A-Radiation Organize to Gain Compensation." *New York Times,* August 12, 1979.

Chapter 2: The Western Shoshone Downwinders

Elder Western Shoshone remembered atmospheric tests in great detail. In two 2007 Department of Energy funded studies, Dr. Bonnie Eberhardt-Bobb tested topsoil for radionuclides and conducted interviews with the Western Shoshone elders who lived during atmospheric testing. Dr. Eberhardt-Bobb, a former member of the American Peace Test, learned about Shoshone people when protesting the Nevada Test Site in the 1980s. Her close relationship with the Western Shoshone allowed her access to personal stories rarely shared with outsiders. *A Soil Contamination Survey of Timbisha Shoshone Tribal Lands within Close Proximity of the Nevada Test Site* studied the Timbisha Shoshone living in Death Valley, while her other report, *Radionuclide and Radioactivity Monitoring on Yomba Shoshone Tribal Land Agricultural and Ranching Settlements, and Traditional Use Areas in Nevada* centered around the Yomba Shoshone tribe located east of Reno. Dr. Eberhardt-Bobb's two projects were unique; they were the only scientific studies dealing with exposure of the Western Shoshone from the Nevada Test Site. Dr. Eberhardt-Bobb wanted to get a cross section of the Shoshone population, so she examined two relatively distant locations on traditional Shoshone land.[71] I will be drawing heavily from Dr. Eberhardt- Bobb's work for this section.

Many Western Shoshone witnessed atmospheric testing. One elder remembered that the "walls of the adobe houses all cracked. [He] saw the light then there was a faint rumbling, then the dust was in the air." [72] Another recalled the power of the bomb effect, and told how "[his family was] scared, [the] houses quivered!"[73] Those who felt the explosion of atomic bombs were also in range of dangerous fallout clouds. One man recalled that his "step-dad . . . [said]

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[71] Dr. Bonnie Eberhardt-Bobb, interviewed by author, Cactus Springs, NV, December 14, 2010.
[72] Dr. Bonnie Eberhardt-Bobb, *A Soil Contamination Survey of Timbisha Shoshone Tribal lands within close Proximity to the Nevada Test Site.* Tupippuh Project , Death Valley CA. pg. 20.
[73] Ibid., 21.

'Hey look at that cloud!' There was a big old cloud like this over Panamint Range [near the Mojave Desert]."[74] An elder evoked how "[the explosions] were colorful, outstanding, really sharp, [and] they lit up the whole sky, then just faded away."[75] This testimony shows the close proximity of the Western Shoshone to the Nevada Test Site. While the bombs created awe inspiring explosions, the spectacle also brought danger.

The warning system was not uniform. Some Western Shoshone recalled that the AEC informed them about upcoming tests; others merely found out after the fact. Bennie Reilly Sr. was seven when testing began. He would wake up at four in the morning to watch the blast. He did not recall "if [the A.E.C] gave . . . any warnings, but [he does] remember they just made announcements."[76] Another Shoshone saw A.E.C. officials near her home in Yomba, who "didn't come to tell . . . or warn . . . about the tests. [The community] did see people in new cars who would come around, but they didn't talk to anyone and [the community] thought they were there because of the test, but . . . [wasn't] sure."[77] Other Shoshone only heard about the tests after they occurred. One woman did not know why the cloud traveling toward Nevada and Utah made her children cry, until she went to work and found out about the test over the radio.[78] Lastly, another Shoshone and "[his family] knew it was the army testing their bombs" but "didn't know what [the explosion] was."[79] Like other Downwinders, the Western Shoshone did not understand the true danger of radiation.

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[74] Ibid.
[75] Ibid., 21.
[76] Interview with Bennie Reilley, Sr., interviewed by Renee Corona Kolvet, May 10, 2004. Nevada Test Site Oral History Project, University of Nevada, Las Vegas.
[77] Dr. Bonnie Eberhardt-Bobb, *Radionuclide and Radioactivity Monitory on Yomba Shoshone Tribal Land, Agricultural and Ranching Settlements, and Traditional Use Areas in Nevada.* Yomba Shoshone Tribe, Austin, Nevada. pg. 22.
[78] This individual did not know that the United States was testing nuclear bombs, at first he merely assumed that the explosions were from conventional weapons. Bobb, *Timbisha Shoshone,* pg. 21.
[79] Ibid.

During atmospheric testing, many Shoshone slept outside under the trees and witnessed the tests.[80] Because of this sleeping pattern, Shoshone unknowingly exposed themselves to fallout. This exposure, resulting from simply being outside, mirrors the experience of other Downwinders. Also, like the other Downwinders, many Shoshone assumed that "after [the fallout cloud] died away" there was no danger.[81] When the cloud disappeared, one Western Shoshone family "went in and forgot about the cloud. We didn't know. It was a funny looking cloud. They were cooking and we went in and maybe it's good we did. Most times we stayed out."[82] Many went outside after the cloud had cleared away, but ionized radiation particles still blanketed the ground. Uranium miners came to the area outside of Tonopah and filed claims because their Geiger counters yielded high readings. When the miners dug, they found no uranium, the Geiger counters went off the charts because of all the radiation covering the ground.[83] Fallout dust with ionizing radiation fell onto Western Shoshone communities.

Many Shoshone spent much time in the wilderness when they obtained food in their traditional way, through hunting and gathering. According to a 1999 study, they upheld their traditional foods, since "approximately 64.7% of Western Shoshone fish for trout, 49% hunt jackrabbit, 47.1% hunt deer, and 47.1% hunt cottontail. Other native wild foods include sagehen, squirrel, antelope, groundhog, chuckawalla, chukar, crawdads, carp, whitefish, coot and chub."[84] Western Shoshone also gathered native foods, such as "pine nuts (84.3%), Indian tea (64.7%), wild onions (49%), choke cherries (43.1%), willows (43.1%) and sage brush (39.2)."[85] It is important to note that the native foods change with the environment, so the Shoshone diet may

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[80] Ibid., 20.
[81] Ibid., 21.
[82] Ibid.
[83] Ibid., 22.
[84] Ibid., 6.
[85] Ibid.

have deviated from this list. Because Shoshone people roamed the land searching for native food near the NTS, they unknowingly further exposed themselves.

Dr. Eberhardt-Bobb's research also tested topsoil from specific areas that elders described. She chose radionuclides with relatively long half life, since many short-lived radionuclides could not be detected over fifty years later. She tested for plutonium, tritium, strontium, cesium and americium. In the study of the land near the Timbisha Shoshone Tribe, there was a positive detection of these radionuclides, but all were below the minimum detectable activity (MDA).[86] The Yomba study yielded much different results. A majority of the samples tested positive for strontium, but, once again, these were the MDA.[87] Plutonium and tritium tested positive, but these again were only MDA.[88] A minority of the samples of plutonium, americium and cesium were above MDA.[89] While most of the tests proved that the radionuclides existed, they were at acceptable amounts. Both studies proved that these radionuclides existed in these two distant locations of land used by the Western Shoshone. Because both locations had radionuclide activity, we can conclude that fallout drifted over much of the territory. While these tested radionuclides were an acceptable limit, there is no way of knowing the levels of radionuclides with shorter lives. The studies were unable to study radionuclides with shorter lives since the radionuclides have disappeared with time.

Nuclear testing had a drastic effect on the health of native animals. One elder remembered killing some deer. When he cut the meat, he found foul-smelling black balls about as big as a dime.[90] Another Shoshone elder told the story that "in 1976 three men hunting deer, went to the area around Marysville, behind the houses, shot a deer. When they gutted him, he

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[86] Eberhardt-Bobb, *Timbisha Shoshone,* 30.
[87] Eberhardt-Bobb, *Yomba Shoshone,* 22.
[88] Ibid.
[89] Ibid., 23.
[90] Eberhardt-Bobb, *Timbisha,* 23.

didn't look right. Inside he was black, there were big black bubbles. His muscles were ugly with it. He was so bad [the three men] didn't know how he survived. About four were found like that around that time."[91] More than a decade had passed, but animals still suffered from radiation. A woman recalled that she "saw lots of disease in the rabbits."[92] While discarding the animals with obvious ailments, Western Shoshone still unknowingly consumed animals with the invisible marks of radiation.

If the shorter radionuclides existed in these areas where Shoshone hunted and gathered food, it is possible that the radiation entered into their diet. According to the 1955 *Science in Review* section of the *New York Times*, "it is accepted that the meat of animals that have been exposed to gamma rays, which always accompany the explosion of an atomic bomb, is not a fit food."[93] Citing fish exposed to fallout during testing at the Pacific Proving Grounds, the article states that food should have been discarded. In 1955, scientists R.H. Wasserman and B.F. Trum conducted a study of the effects of beagles ingesting radiated sheep and cows. The test was the first of its kind to study the possible toxicity of the ingested flesh of animals receiving lethal doses of gamma radiation.[94] The study concluded there was no effect on the dogs that ate irradiated animals; it concluded that humans could safety eat irradiated animals.

Two years after Wasserman and Trum's research, the A.E.C. created a report entitled *Some Effects of Ionizing Radiation on Human Beings.* The report emphasized that internal ingestion through food was greater than throat inhalation.[95] The research studied the urine of exposed humans from the Bikini Atoll, Rongelap, and chickens and pigs. In the end, the report

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[91] Eberhardt-Bobb, *Yomba Shoshone,* 21.
[92] Ibid.
[93] Irradiated Meat: Tested on Dogs, Cats and Chicks It is Found Harmless, *New York Times,* July 10, 1955.
[94] R.H. Wasserman and B.F. Trum, "Effect of Feeding Dogs the Flesh of Lethally Irradiated Cows and Sheep," *Science,* 121, no 3156 (June 24, 1955): 121.
[95] Atomic Energy Commission, *Some Effects of Ionizing Radiation on Human Beings: A report on the Marshallese and Americans accidentally exposed to radiation from Fallout and a Discussion of Radiation Injury in the Human Being,* ed. E. P. Cronkite, V.P. Bond. and C.L. Dunham, (July 1956), pg. 74.

concluded that urine test and tissue samples showed that "all these animals had significant internal contamination," but there were neither "significant gross changes nor pathological changes which could be definitely ascribed to radiation."[96] No animals exposed to internal radiation suffered health effects. Because the studied animals received higher doses of radiation, the report assumed no consequences on the native islanders. A.E.C. conducted this research over an eight-month period. While these scientists in the mid-1950s concluded that it was safe to eat irradiated food and animals, the public began to panic and question whether exposed food really was harmless.

In the late 1950s, strontium-90 and iodine-131 became buzzwords synonymous with the health consequences of nuclear testing. Strontium-90 does not occur in nature: it is created from a nuclear explosion. It has a half life of twenty eight years, giving strontium-90 the opportunity to cause damage for a long period of time.[97] Strontium-90 acts like calcium and quickly deposits itself in bones, causing cellular damages which can result in leukemia and bone cancer. Fallout clouds floating throughout the United States exposed cattle, who produced milk with high levels of strontium-90. Other radioactive isotopes started to make Americans question whether ingesting irradiated food was safe. Iodine-131, which is absorbed into the thyroid, has a half life of eight days.[98] Scientists, along with the AEC, reassured citizens that irradiated food could be washed free of danger, but wild animals do not wash food. When animals consumed plants covered in iodine-131, their thyroids centralized the radionuclide. The Western Shoshone loved to eat thyroids. Because the Western Shoshone are not considered Downwinders, they have never been studied for ingesting radiations. The Western Shoshone exposure from eating their native animals will never be truly known.

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[96] Ibid., pg. 91
[97] Strontium 90: Evidence of Threshold Found in Study of its effects, *New York Times,* September 28, 1958.
[98] Health Service Statement on Fall-out Level in U.S., *New York Times*, October 27, 1961.

Many Western Shoshone believed that there has been lasting damage on the plants and animals around the test site. When I visited the test site in December 2010, I noticed that there was a strange and unnatural silence near the Nevada Test Site. It was cold, windy, lonely, and seemingly devoid of all life. Test site worker, Ken Case, remarked that right after the test went off, "the area outside of that circle would be on fire. All the weeds and grass, and if there were trees, they were on fire. Rabbits would run across there and they would be on fire."[99] Many Shoshone contrast the abundance of native animals and plants in their childhood with the shortage created by the NTS. Jon Wells "uncle used to tell me that when they went hunting at the Test Site on Beatty, this would have been the 30s, . . . there was plenty of game out there. His description was it was hardly hunting, you would just go out, find the deer that you wanted and [kill it]."[100] One person spoke about the disappearance of birds and how "they went away after testing. There were bluejays in the mountain. Other little birds. Now they're coming back. Pinyon birds. Before . . . they were all over when we were kids, birds were all over, all kinds."[101] Another remarked, "it seems like all the animals went away."[102] One of these other animals, according to an elder, is the king snake "always on the road going toward water. [He has] never seen a king snake since this [testing] happened."[103] Other missed animals include: tarantulas, rabbits, magpies, and sagehen.

Several Western Shoshone remembered certain berries from their childhood that do not exist anymore. Along with these berries, "lots of plants have been lost." [104] These same elders believed that the Pinion pine trees, whose nuts were an essential part of the indigenous diet,

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[99] Gallagher, 5.
[100] John Wells, interviewed by author.
[101] Eberhardt-Bobb, *Timbisha Shoshone,* pg. 22.
[102] Eberhardt-Bobb. *Yomba Shoshone,* pg. 21.
[103] Eberhardt-Bobb, *Timbisha Shoshone,* pg. 23.
[104] Ibid., 22.

"stopped making pine nuts the way they used to."[105] The Western Shoshone observed the change in their environment. Is this change in due to testing or is some other factor to blame? One woman concluded that "[native foods and animals] were destroyed by their own environment."[106] She used a small winged insect "that deposits a glue-like substance . . . to mend things," but has not been able to find it since 1953," two years after testing began.[107] The Western Shoshone have intimate knowledge of the environment as they have spent centuries observing and passing down traditions interwoven with nature. One would assume, people so connected with their environment would notice changes in the animals and plants.

A 1971 study, entitled "Revegetation Problems Following Nuclear Testing Activities at the Nevada Test Site" confirmed the Western Shoshone testimonies.

> Natural vegetation in some area so the Nevada Test Site has been destroyed, either directly or indirectly, by nuclear testing activities. Certain areas involved with site installations, storage yards, and roadway networks have been denuded of original vegetation . . .Target and ground-zero sites of air-dropped and balloon or tower mounted nuclear devise have been denuded by blast and fire. In addition, the radiation from radioactive fallout debris has destroyed or damaged the natural in some areas near underground and surface excavation tests.[108]

The report concluded that it will take decades for the vegetation to return to its natural state.

The Western Shoshone suffered from many of the health problems of previously discussed Downwinders. One woman admits, "sometimes [I] wonder if I'm responsible for giving my daughter colon cancer. I was pregnant when the bombs were going off and I didn't know [the dangers of exposing a fetus to fallout]."[109] Like other Downwinders, children with weaker immune systems than adults especially suffered. William Rosse Sr. has a "granddaughter

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[105] Eberhardt-Bobb. *Yomba Shoshone,* 21.
[106] Eberhardt-Bobb, *Timbisha Shoshone,* 22.
[107] Ibid.
[108] E.M. Romney, A. Wallace, and J.D. Childress, *Revegetation Problems Following Nuclear testing Activities at the Nevada Test Site*, Laboratory of Nuclear Medicine and Radiation Biology University of California, Los Angles, 1.
[109] Eberhardt-Bobb. *Yomba Shoshone,* 21.

that was born totally blind. She didn't develop in her mother's womb."[110] His granddaughter also suffers from thyroid problems. Stories of cancer are also frequent among the Western Shoshone. A woman tells how she lost her first husband when he was twenty-one to cancer. Her husband would hunt near Yomba with his friends in the 1950s.[111] One Shoshone tells a story about "these men from Yomba. They'd be buckarooing and they went to [a] pool . . . They'd go there to soak in the water. The one guy, his hair started to fall out. He died shortly after from cancer."[112] Loss of hair was an all too common occurrence among victims of radiation poisoning. The native environment of the Shoshone had turned against them.

In 1957, the Office of Test Information for the Nevada Test Site complied the document *Background Information on Nevada Nuclear Test.* This summary of the test site explained that "outside of the Test Site region, the total dose since the beginning of nuclear testing generally has been a very small fraction of a roentgen – considerably less that the average exposure to natural 'background' radioactivity which persons have received over the same time period."[113] The Western Shoshone roamed the Nevada desert for centuries well adapted to their surroundings. There had to be another environmental factor causing indigenous people to suffer negative health effects from a place they have lived in for thousands of years. William Rosse Sr., discussed the longevity of the Western Shoshone before testing, remarked that they "used to live until they were over 100 years old and still walk around as good as a young kid 20 years old."[114] Nuclear testing drastically damaged the health of the Western Shoshone.

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[110] Carole Gallagher, *American Ground Zero: The Secret Nuclear War* (Cambridge: MIT Press, 1993) 226.
[111] Eberhardt-Bobb. *Yomba Shoshone,* pg. 21.
[112] Ibid.
[113] Atomic Energy Commission, *Background Information on Nevada Nuclear Tests*, by Office of Test Information, (July 15, 1957), pg. 49.
[114] Gallagher, 226.

Some Shoshone looked to the future and believed that some plants could return and repopulate.[115] One recalled the abundance of animals, mainly rabbits. While number of rabbits may have declined steeply, "now they seem to be coming back."[116] Some Western Shoshone hoped that nature could rebound from all the testing. In a 1998 study, funded by the Department of Energy, scientists Kurt R. Rautenstrauch and Thomas P. O'Farrell concluded that the desert tortoise that lived at the Nevada Test Site was relatively abundant.[117] Rautenstrauch and O'Farrell set out to determine if these generalizations about the rarity of the desert tortoise were true, and conducted surveys on the Nevada Test Site.[118] Their work mirrors the optimism of the Western Shoshone that environment can and will heal itself.

From viewing the test to roaming the radiated land, atmospheric testing exposed the Western Shoshone to ionizing radiation and radionuclides. The AEC did not warn the Shoshone of the new danger in their ancient homeland. The Shoshone relationship with the NTS did not end with atmospheric testing. The Western Shoshone continued to suffer, but this time, it was spiritual.

Chapter 3: Western Shoshone Spiritual Healing and Suffering

Corbin Harney and Spiritual Beliefs

There is more to the Western Shoshone relationship with the Nevada Test Site than radiation exposure. From the Western Shoshone perspective, the NTS violated the spiritual connection between Shoshone and their traditional land. The continuous bombing of land has

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[115] Dr. Bonnie Eberhardt Bobb, interviewed by author.
[116] Eberhardt-Bobb, *Timbisha Shoshone,* pg. 23.
[117] Kurt R. Rautenstrauch and Thomas P. O'Farrell, "Relative Abundance of Desert Tortoises on the Nevada Test Site," *Southwestern Association of Naturalists* 43, no. 3 (September 1998): 407.
[118] Ibid.

devastated the delicate balance between man and earth. In this sense, the Western Shoshone have suffered twice. Not only have their bodies been harmed by continental nuclear testing. Their spirits have too.

Any exploration of Western Shoshone spiritual beliefs and the Nevada Test Site must mention of Corbin Harney. Harney, a Western Shoshone spiritual leader, gained international recognition as a peace activist and lead the Shoshone fight against the NTS. Born in Idaho in the 1920s, he eventually moved to the Duck Valley reservation in Nevada. Harney battled with western influence for much his life, most notably by running away from Stewart Indian School set up in Carson, Nevada.[119] He resisted and hated the whites for most of his life. As a descendent of *newe pooha*, medicine people, Harney "began to realize . . . I was one of those guys, one of those people that can see a sickness in a human."[120] According to Western Shoshone beliefs, animal and plant spirits guided these healers in their work.[121] Harney spent his life learning and preserving the traditional ways of his people, praying to the natural spirits, and using his gifts to heal. Corbin Harney remained one of the last few Western Shoshone healers until his death in 2007. His life's work showed how Western Shoshone worked to heal the bombed land.

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[119] Corbin Harney, *The Nature* Way (Las Vegas: University of Nevada Press, 2009), 111.
[120] Ibid., 12.
[121] Ibid., 55.

Figure 5 Corbin Harney. Photo Courtesy from The Way It Is: One Water . . . One Air . . . One Mother Earth. Nevada: Blue Dolphin Publishing, 1995.

Harney taught respect of life and the interconnectedness between man and nature. Differentiating Western Shoshone beliefs from European Christianity and Judaism, Harney emphasized that "our god is what we survive on."[122] As indigenous people, the Western Shoshone survived on their land, a land that provided everything necessary for life. The Shoshone coexisted with earth, respecting its gifts and taking no more than needed. This relationship with nature contrasts from the European Judeo -Christian tradition. In Genesis, the Bible declared that "God said, 'Let us make in our image, after our likeness: and let have dominion over the fish of the sea, and over the fowl of the air, over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.'"[123] In the Judeo-Christian thought, man owns and controls a natural world dominion over which was granted by God. God provided nature for man to use and rule over. The Western Shoshone thought differently.

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[122] Corbin Harney, interviewed by Mary Palevsky, July 24 and 25, 2006, Nevada Test Site Oral History Project, University of Nevada, Las Vegas.
[123] 1 Genesis 1:26 (King James Version).

Western Shoshone believed Earth created all things, and the creator of all things should not be manipulated or abused. Growing up, Harney's grandmother told him that nature was his mother, and "don't destroy your Mother, because you've only got one Mother, we've all got that Mother."[124] Bombing land for the Western Shoshone is akin to bombing a holy site for another religion. "The Natives don't go to church: the whole Mother Earth in the open air is our church; we stay out in the open. In our own way, we go to church daily."[125] The Western Shoshone view the earth as a sacred means of communication with their creator.

But the earth is more than sacred for the Western Shoshone, it is alive. Using the spirit of water as his example, Harney explained that "you see, this water . . . it's got a life like we do, the same thing. . . Once we kill the life that's in it, it won't have a voice like we have any longer. It won't have the strength."[126] Harney emphasized following "the nature way," the traditional way of his people. Only if humans go back to a lifestyle that incorporated nature, instead of dominated it, could the earth be healed.

As a spiritual leader, Harney prayed for everything: the sun, rocks, flowers, pine trees, water, air, and animals. The prayers were humble, thanking the earth for what it provided and asking for no more than necessary. The prayer at sunrise best exemplified this unwavering gratitude:

> *I pray this morning, Sun, that as you come out,*
> *you will warm out bodies and cause all living things*
> *to grow on this Earth; for without you*
> *coming out every day, Sun, nothing will survive.*
>
> *I pray that you will keep us healthy, keep us pure.*
>
> *I pray that the air will remain pure and help our bodies*
> *keep in wellness.*

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[124] Harney, *The Nature Way*, 6.
[125] Ibid., xvii.
[126] Ibid., 31

Keep this great spirit among us.

I pray that all living things on this earth will continue to live,
and that all creatures that fly over the earth
will fly feeling good and continue living among us
and with us.

I ask you to come out clear, to warm this Mother Earth,
so that we can appreciate your light
and what it does for us.

All the plant life depends on you.
They feel healthier when you come up clear on top of them.
All the plant life here depends on you.
We are all welcoming you, coming over the horizon.[127]

Harney believed that whenever people take from nature, either from hunting animals, picking berries, or merely collecting wood, they need to explain to nature why it was being used. Humans need to "[make] sure you go out there and talk to [nature], and tell them why I need you." Corbin Harney knew how much his existence relied on the health of native plants and animals. Western Shoshone believed that they are the caretakers and protectors of their native lands. The restricted test site barred the Shoshone from healing their land.

Testing also caused the disappearance of plants and animals, which had spiritual consequences. The NTS "killed the medicine that we used to use for different kinds of sickness. When they died, we became lost. We all began to go to the pharmacist."[128] The explosion of nuclear weapons forced Western Shoshone to forgo their traditional medicine and spiritual practices.

Corbin Harney and Protest

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[127] Harney, *The Way It Is*, 48.
[128] Harney, *The Nature Way*, 102.

Corbin Harney did more than heal individuals and the land. He helped transform the Western Shoshone from being victims to activists, all while maintaining his spiritual ways. Through activism, the Western Shoshone transformed spiritual suffering to healing.

Harney was a spokesman for the plight of the Western Shoshone. He first became involved with the NTS when he argued for Shoshone land rights in Treaty of Ruby Valley. From 1950 to 1970, when protests against the NTS were still rare, Harney "traveled to different Shoshone reservations and powwows . . . talking about [land rights] . . . so the people would understand how important these treaties were."[129] He eventually started protesting the Nevada Test Site itself and participating in demonstrations.

Because of his charismatic personality, Harney traveled around the world to educate others about the Western Shoshone. He visited Kazakhstan, which had a frightening resemblance to Nevada. There, the Soviet Union conducted 456 nuclear tests at Semipalatinsk, between 1949 and 1989.[130] 116 of these tests were aboveground. The people near Semipalatinsk, unaware of the dangers of radiation, became exposed like the American Downwinders. In eastern Kazakhstan, "the area most exposed to radiation," there "remains a 20-30 percent higher [rate of cancer] than elsewhere in the country . . . [along with] a higher chance at mental deficiencies in children."[131] While Harney was there "in 1990, he formed the Nevada-Semipalatinsk Movement, an alliance between two indigenous groups, the Western Shoshone and the Kazakh, who have both been affected by nuclear testing on their ancestral lands."[132] Harney also journeyed to Puerto Rico, Taiwan, Hawaii, Germany, the United Nations home in Switzerland and to Japan.

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[129] Ibid., 21.
[130] Togzhan Kassenova, "The lasting toll of Semipalatinks nuclear testing," *The Bulletin of Atomic Scientists* (September 28, 2009), http://thebulletin.org/web-edition/features/the-lasting-toll-of-semipalatinsks-nuclear-testing (February 3, 2011).
[131] Ibid.
[132] Harney, *The Nature Way*, xv.

His travels brought the struggles of the Western Shoshone to a global stage, while connecting Downwinders, environmental groups, peace movements, and indigenous people.

After the American Peace Test, one of the leading Nevada Test Site protest groups, broke apart in the 1990s, Harney talked to "some of them people that I work with . . . I told them, by God, let's start this up by calling it an Indian name, Indian healing, like Shundahai Network."[133] Formed in 1994, the Shundahai Network is dedicated "to breaking the nuclear chain by building alliances with indigenous communities and environmental, peace and human rights movements."[134] The Shundahai Network organized bi-annual gatherings, held speaking tours throughout the United States and participated in nonviolent protests at the Nevada Test Site. The Shundahai Network exemplified the recognition by peace groups the necessity of including the Western Shoshone.

Harney's hatred for white people evaporated as he understood that race was not a deciding factor in who became a Downwinder. According to Harney, all humans needed to live on an earth safe from ionizing radiation. Other Shoshone also made it their mission to heal the land, such as Johnnie Bobb.

Mothers Day Walk: Johnnie Bobb

Since 2000, spiritual elder Johnnie Bobb has led the annual Newene Sogobi Mava'a Mia: Western Shoshone Walk on the Sacred Land.[135] The walk took place every May, around Mothers Day, to celebrate Mother Earth. He established the walk because "that's our sacred land . . . and

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[133] Corbin Harney, interviewed by Mary Palevsky.
[134] Shundahai Health Network. http://www.shundahai.org/HGW/ (accessed January15 – February 10, 2011)
[135]Newe Sogobia – Western Shoshone Homeland. "Western Shoshone – Most Radiated Nation on Earth," Western Shoshone Nation, *http://www.h-o-m-e.org/Shoshone/* (accessed February 15 2011).

it's sad, and it feels sad to us, and it looks sad to that area. I always tell my people about that place, let's do something."[136] The walk encompassed the western and eastern boundaries of the Test Site and took five days to complete. During the walk around the land, Bobb conducted "prayer ceremonies and vigils, visits communities, and blesses waters, hot springs, all living beings and the land along the way."[137] Anyone could participate, Western Shoshone or not. The walk healed the land, reminding it of humans' respect and care.

The Mother's Day walk in April 2010 included *hibakusha* from Japan.[138] The two groups, both profoundly changed by nuclear bombs, met each other and shared their stories. The grand finale of the walk took place at the entrance to the Nevada Test Site, where participants had the option of crossing the line into the boundary of the test site and being arrested.[139] The two groups then participated in Shoshone spiritual ceremonies.

The Sekhmet Temple

Like Corbin Harney's prayers and Johnnie Bobb's walk, the Sekhmet Temple was built to heal the land. Shortly after Texas philanthropist Genevieve Vaughan began protesting the test site in 1986, she learned about the Western Shoshone.[140] Sharing the same Shoshone belief that the land needed to be nursed back to health, she purchased twenty acres of land about forty-five miles from the Test Site, in Cactus Springs, Nevada.[141] Vaughan wanted to repair "the Earth at the Test Site [which] is wounded underground. You can feel it in your body as you stand at the

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[136] Dr. Bonnie Eberhardt Bobb, interviewed by author, Peace Camp, NV, December 14, 2010.
[137] Newe Sogobia, *http://www.h-o-m-e.org/Shoshone/.*
[138] A *hibakusha* is an individual who survived the atomic bombings in Hiroshima (August 6, 1945) and Nagasaki (August 9, 1945).
[139] Bobb, interviewed by author.
[140] Ken Butigan, *Pilgrimage Through a Burning World.* (New York: New York Press, 1999), 1.
[141] Genevieve Vaughan, "Herstory of the Temple: My Journey with Sekhmet Goddess of Power and Change," Sekhmet Temple in Nevada, http://www.sekhmettemple.com/Herstorypage.html (accessed February 3, 2011)

gate of the test site."[142] In 1992, Vaughan deeded the land back to the Shoshone. The temple became a meeting point and home for protesters

Like the Taj Mahal, the temple's ceiling was a dome with interlocking steel hoops. Inside the temple, statues commemorated powerful religious women: the goddess Sekhmet, Holy Virgin Mary, and Madre del Mundo.[143] Around the temple, visitors left gifts, as simple as flowers, stones, playing cards, notes, and pennies. The temple did not stand out among the backdrop of the desert. Instead, it coexisted with the vast expansion of the landscape. Vaughan actively incorporated the Shoshone into the Goddess Temple. When I stayed at the temple site, I noticed the bent willow skeleton of a Shoshone sweat lodge. Corbin Harney had also held sacred fire circles on the land.[144] The temple illustrates how non-Shoshone shared the same belief in healing the land. The Peace Camp shared this same objective.

[142] Ibid.
[143] Vaughan chose the Egyptian Goddess Sekhmet because she believed the Goddess best exemplified the power of women. Sekhmet is "sensitive, amorous, playful, sensuous, and beautiful. She is also strong, a no-nonsense goddess. She is creator and destroyer, the mother of all and the gardener weeding the garden." The other holy female figures also share this feminine strength with Sekhmet and appeal to other religions and spiritual beliefs. The widely popular Virgin Mary comes from the Christian religions, while La Madre del Mundo represents the beliefs of the Western Shoshone. Protesters placed the statue of La Madre del Mundo, which Vaughan commissioned in the 1980s, outside the gates of the NTS. The Department of Energy confiscated the statue for 'trespassing.'
[144] Ibid.

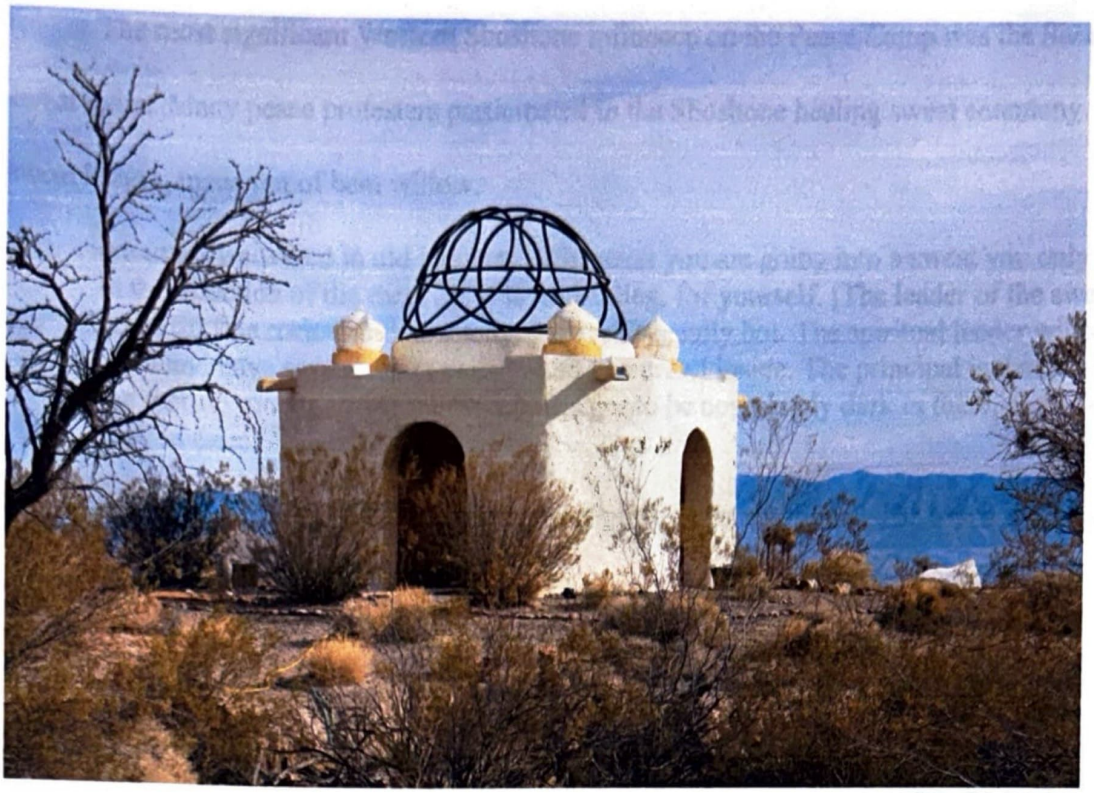

Figure 6 The Sekhmet Temple. Photo by Allison Gaudinier, December 2010.

The Peace Camp

The Peace Camp sat on top of a slight hill, staring down the test site across Highway 95. The contrast between the serene Peace Camp and the Nevada Test Site was startling. Just over the mountains, out of site, thousands of nuclear bombs have been tested, either in the atmosphere or in the earth. Meanwhile, directly across the freeway lived the anti-nuclear movement's gathering place. When I visited the Peace Camp, the leftover frame of a sofa sat in the sand, placed there so people could "just to sit and look at the stars."[145] The Peace Camp is a place for reflection. But it is also a place for action. It has seen much traffic over the past 50 years and was the organizing place for countless protests that at times have lasted weeks.

[145] Eberhardt-Bobb, interviewed by author.

The most significant Western Shoshone influence on the Peace Camp was the Shoshone sweat lodge. Many peace protesters participated in the Shoshone healing sweat ceremony. The sweat lodges, made out of bent willow,

> are usually covered in old blankets. Whenever you are going into a sweat you only walk in the direction of the earth . . . it is for healing, for yourself. [The leader of the sweat] waits till [the rocks inside the lodge] are really really hot. The spiritual leader will stand there and have sage to bless you . . . and you crawl inside. The principal is that it's like the uterus, you are inside the womb. It's got to be completely dark in there, and you just pray in there.[146]

For many, the experience of the sweat lodge was profoundly emotional. The sweat lodge and the sweat ceremony represent the fusion between the peace activists at the Peace Camp and the Western Shoshone. Protest movements that stayed at the Peace Camp recognized it as Western Shoshone land.

When I visited the Peace camp in December, someone tampered with it. There were beer bottles and paper thrown in the fire, broken glass everywhere, and the remnants of gun shells. The sacredness of the Peace Camp had been violated. Dr. Eberhardt-Bobb explained that when something like this happens, a "spiritual person has to come and put it all back together."[147] Not everyone agrees with the protesters, and because the Peace Camp is quite well known, it is an easy target for opponents.

In 2002, archeologists Colleen Beck, Harold Drollinger and John Schofield from the Desert Research Institute recorded the protesters' rock art and graffiti. The archeologists confirmed the importance of the Peace Camp, since "it's the other side of the picture of the testing program."[148] The team found over ninety instances of graffiti and art, including "rocks found . . . to shape peace symbols, doves, stars and walkways to tent sites, activists painted

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[146] Ibid.
[147] Ibid.
[148] Keith Rogers, "Pleading for Peace," *Las Vegas Review – Journal* (March 24, 2002).

graffiti and pictographs inside culvert tunnels."[149] Clearly, the Peace Camp was a home for the anti-nuclear protests.

By being the home to opponents of the NTS, the Peace Camp has also healed the land. Like Corbin Harney's life work, Johnnie Bobb's walk, and the Sekhmet Temple, the Peace Camp helped the Shoshone, and others, battle the spiritual suffering nuclear testing caused.

Figure 7 The Peace Camp with the skeleton of a Western Shoshone sweat lodge. Photo by Allison Gaudinier, December 2010.

Chapter 4: Protest

The Nevada Desert Experience and American Peace Test

Because of the secretive nature of nuclear testing, especially of the dangerous radiation effects, protesting started slowly. The Society of Friends led the first protest against the NTS.

[149] Ibid.

These Quakers, nicknamed the Atom-lopers by the media, "arrived at the entrance to the Mercury test site early in the morning of August 6, 1957. They called themselves the Non-Violent Action Against Nuclear Weapons (NVA). The NVA posted signs and banners in the desert ground and began a twenty-four-hour 'Prayer and Conscience Vigil.'"[150] The NVA used the media to their advantage. The initial protest signified the growing global unease concerning fallout. The NVA attempted to stop a nuclear test by protest, but the group failed to reach its goal. In the end, the test went off as scheduled, and the protesters witnessed the atmospheric test early in the morning.[151]

That same year, SANE, the National Committee for a Sane Nuclear Policy, began. As a leading voice in the anti-nuclear movement, SANE caught the public's attention. Celebrities, like Dr. Spock, warned the American public about the dangers of nuclear weapons. SANE created momentum for the Partial Atmospheric Test Ban Treaty of 1963. The United Kingdom, Soviet Union and United States signed the treaty, which "undertakes to prohibit, to prevent, and to not carry out any nuclear weapon test explosion . . . in the atmosphere . . . including outer space; or under water."[152] Forcing nuclear testing underground was a huge accomplishment of the anti-nuclear movement, but it was not a victory. Nuclear weapons and nuclear testing still actively grew in the coming years.

While the Partial Atmospheric Test Ban abated the American public's fear toward nuclear weapons, the anti-nuclear movement continued to push forward. Scientists, environmentalists, feminists, mothers, and celebrities formed different groups with the same goal: abolish nuclear weapons. The movement reached a feverish pitch with President Reagan's

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[150] Marian Mollin, *Radical Pacifism In Modern America: Egalitarianism and Protest.* (Pennsylvania: University of Pennsylvania Press, 2006), 78.
[151] Ibid, 79
[152] "Treaty Banning Nuclear Weapon Tests in the Atmosphere, Outer Space and Under Water," August 5, 1963, *United States Treaties and the Other International Agreements*

first term. His administration's plan to greatly expand the nuclear arsenal furthered dissent. Reagan aimed at winning the race once and for all. The anti-nuclear movement could only see all losers in such a contest.

As a result, the Nevada Desert Experience (NDE) and the American Peace Test (APT) sprang to life in the 1980s. These two groups staged record breaking protests that both recognized and accepted the Western Shoshone. The NDE started out as strictly a Catholic peace group, but expanded to include people of all faiths. The NDE, influenced by the Franciscan tradition of peace, began its first gathering in 1982.The gathering took place during Lent, and participators initially called themselves the Lenten Desert Experience.

By participating in Nevada Test Site protests, members of the NDE learned the Shoshone view of the earth. The Nevada Desert Experience proved to be aptly named, because for many it was a life changing experience. The NDE profoundly moved Jerome Zawada, a Catholic priest. Zawada remembered "the beauty, the intensity of . . . the presence of God in the actions of people, and the vastness of the terrain. And the sky and the mountains, the colors and everything just was so much in focus, it was just highlighted for me. So I regarded this as Heaven."[153] Zawada also learned about the Shoshone, and "I fell in love with [the Western Shoshone], too."[154] Anne Symens-Bucher, who participated in twenty five years of NDE events, shared the same experience. Symens-Bucher described the effect of the desert, as "a complete physical experience, a whole-body experience, to go out there for me. And it never fails to not be that way for me, no matter how many times I've been there."[155] We must keep in mind that members of

[153] Interview with Jerome Zawada interviewed by Suzanne Becker, August 9, 2006. Nevada Test Site Oral History Project, University of Nevada, Las Vegas.
[154] Ibid.
[155] Interview with Anne Symens-Bucher interviewed by Suzanne Becker, August 6, 2005. Nevada Test Site Oral History Project, University of Nevada, Las Vegas.

the NDE were spiritual people, and their established feelings they brought to the desert shaped their experience.

The fifth *Desert Voices*, the newsletter of the NDE, made its first mentioned the Western Shoshone in spring of 1989. In a section describing the 'Mercury Chapel Rededicated,' *Desert Voices* told how

> eleven people made a religious pilgrimage onto the Nevada Test Site on the night of Good Friday. They proceeded with the permission of the Shoshone people, to the former Chapel in Mercury.[156] They found the door open . . . with singing, scripture readings and prayer, they transformed the building, now an administrative office . . . back into a place of worship. After several hours, they were arrested.[157]

The protesters did not bring any Shoshone people with them to the Test Site, but they recognized the land as Shoshone. It took over twenty years for the NDE to expand its ranks to outside religion, but this was a start.

In 2006, the NDE board welcomed new members and opened up its ranks outside of the Catholic faith. Two of the new members, Bonnie and Johnnie Bobb, represented the voice of the Western Shoshone.[158] Finally, a protest group included the Western Shoshone in the planning and decision making process. Before 2006, groups protesting the Nevada Test Site planned an event and then ask the Western Shoshone if they wanted to participate. Now, the Shoshone involvement was more than an afterthought.

Other people of faith also participated. In the 2006 event, *Speaking from the Heart: Testimony and Healing in the Desert*, "this Catholic mass welcomed the Shoshone spiritual leader [Corbin Harney], a Jewish man wearing a tallit and reading from the Torah, a Mennonite, and Episcopal priest, a Jesuit priest, a Zen priest, a Methodist minister, an elderly nun in

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[156] Mercury was the town on the NTS where workers lived. Besides having a chapel, the town also had a school, swimming pool, and bowling alley. Now deserted, the town once boasted a population of 10,000 people.
[157] "Mercury Chapel Rededicated," *Desert Voice* no. 5 (Spring 1989), 4.
[158] "NDE Board Welcomes New Members, New Visions," *Desert Voices: The Newsletter of Nevada Desert Experience* 19, no. 2 (June 2006):2.

microfleece pants and sneakers, a former Marine officer, [and] a hibakusha."[159] Like the Nevada-Semipalastink movement, the NDE joined together with groups with similar goals to strengthen their cause.

The American Peace Test branched off from the National Nuclear Weapons Freeze campaign. Randall Forsberg founded the Freeze movement after writing a position paper entitled "Call to Halt the Nuclear Arms Race." The message was simple: "improve national and international security by stopping the superpowers' [the United States and the Soviet Union] buildup of nuclear weapons."[160] Her paper sent shock waves throughout the peace movement. Frustration with the Freeze campaign, participants formed the American Peace Test. The APT confronted the NTS head on. Adopting from Mahatma Gandhi the philosophy of civil disobedience and nonviolence, the APT, sometimes working alongside the NDE, staged some of the largest protests at the NTS. Almost from its inception, the APT had a Western Shoshone on its board. The American Peace Test was organized by localities. Bill Rosse, a representative for Nevada, also sat on the Western Shoshone National Council.[161] As time progressed, more Western Shoshone, such as Corbin Harney, Ian Zabarte, and Ramond Yowell, worked with the APT.

Frequent protests were a constant thorn in the side of the NTS. Some small protests did not involve arrests, such as the 1987 protest, when "approximately 100 persons will conduct a meeting which will include a music concert on the south side of Highway 95 overpass. They have no plans to go to the cattle guard or to conduct civil disobedience."[162] Protests occurred

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[159] Chelsea Collonge, "A New Page in Our Commitment to Dialogue in the Nuclear Age," *Desert Voices: The Newsletter of Nevada Desert Experience* 19, no. 2 (June 2006):3.
[160] Elaine Woo. "Obituaries; Randall Forsberg, 64; founder of nuclear freeze movement in '80s." Los Angeles Times, November 1, 2007, http://www.proquest.com/ (accessed February 25, 2011).
[161] The Western Shoshone National Council is the government of the Western Shoshone Nation.
[162] Atomic Energy Commission, *Schedule of Known Upcoming NTS Demonstrations* (September 1, 1987).

sometimes within weeks of each other, and by the end of the 1980s, the size of protests grew. In a 1988 protest, "American Peace Test is sponsoring a 'Mothers and Others' demonstration . . . the organization expects 1,200 to 1,500 protesters with 300 to 400 arrests."[163] Celebrities such as Carl Sagan, Daniel Ellsberg, Robert Blake, Martin Sheen and Kirs Kristofferson participated in these protests.[164] The largest demonstration occurred in March of 1988. According to a DOE report, the "APT plans on a major demonstration with the intent of occupation of the NTS. They are hoping for as many as 10,000 people to attend."[165] The APT, working with the NDE, fell short of this estimate, but still managed to organize 8,000 people. The "Reclaim the Test Site" event resulted in over 2,000 arrests.[166] Media rarely made its way to the NTS to cover the protests. Only when celebrities attended, did the media drive out to the desert.

Nye County police arrested protesters for crossing the cattle guard or stopping the traffic on Highway 95. Crossing the cattle guard, a thick white line painted on the entrance to the NTS, constituted trespassing. Police cars took protesters to nearby prisons.[167] To get the trespassing charges dropped, the Western Shoshone started issuing permits. Because the Western Shoshone hold steadfast to the Ruby Valley Treaty, they believed that protesters were not trespassing. The NTS staff and Nye County police were the trespassers.[168] These permits worked, and "charges of trespass have been consistently dropped."[169] The Western Shoshone believed that United States government did not want to challenge the permits because the matter would bring the Treaty of Ruby Valley into court. After the Cold War ended, and nuclear testing at the site stopped,

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[163] Atomic Energy Commission, *Upcoming Events* (May 5, 1988).
[164] "Biggest Demonstration yet at Test Site," *The Mohave Daily Miner,* February 6, 1987
[165] *Schedule of Known Upcoming NTS Demonstrations*
[166] Dr. Bonnie Eberhardt Bobb, interviewed by author.
[167] Ibid.
[168] Interview with Bennie Reilly Sr.
[169] Harney, *The Way It Is*, 207.

protests dwindled in numbers. Despite the drop in popularity, the greatest accomplishment by the Western Shoshone protesters would occur in 2007.

Figure 8 No Trespassing Sign. Photo by Allison Gaudinier, December 2010.

Divine Strake

Scheduled to begin in 2006, Divine Strake "would detonate 700-tons . . . of heavy ammonium nitrate fuel oil emulsion . . . a basting agent, emplaced in a charge hole about 32 feet . . . in diameter and 36 feet . . . located" on the Nevada Test Site.[170] The test would have been a large scale, open air explosive detonation. It was not a nuclear test. The intention was to test the damage caused by conventional weapons to underground military compounds. Like atmospheric tests, Divine Strake would only take place if winds blew in certain directions. The DOE had numerous safety regulations, taking into account the damages caused to the environment and nearby people. According to the DOE, Divine Strake posed no significant radiological danger, because

[170] Department of Energy, *Large-Scale, Open-Air Explosive Detonation DIVINE STRAKE at the Nevada Test Site Pre-Approval Draft,* DOE/EA-1550, Las Vegas, Nevada: Office of Test Information, November 2005, 19.

> the site of the proposed DIVINE STRAKE detonation . . . has never been used for any type of nuclear testing activity. Based upon this process of knowledge, the aerial radiation surveys performed in the past, the current radiological control status of the area under the existing radiation protection program, and the knowledge of the area from the NTS Environment Restoration (ER) program, radiation contamination does not exist at [the proposed location].[171]

Opponents saw it differently. Algirdas M. Leskys, a data analyst working for the Department of Air Quality and Environmental Management in Clark Country, argued that radiation did pose a threat.[172] Leskys bluntly stated that the "information [provided by the DOE on radiation] is incomplete" and "doesn't make any sense."[173] Leskys continued that Divine Strake would "establish a precedent for future large-scale above-ground test at the Nevada Test Site."[174] The scheduled tests brought together the Shundahai Network, the Western Shoshone Defense Project, Citizen Alert, Nevada Desert Experience, Utah Downwinders, and others in opposition.[175] Protest groups feared that lingering fallout would be swept up into the atmosphere and endanger nearby populations.

In 2006, the Western Shoshone Winnemucca Indian Colony sued the United States over Divine Strake. Because the DOE decided in 2007 to indefinitely postpone the test, the case was dismissed. Robert Hager, the attorney for the plaintiffs, worried that the DOE would avoid another lawsuit by sizing down future tests. In the plaintiff response filed January 29, 2007, Hager worried about future smaller tests and "the effect of the re-suspension of radioactive contaminated soil and its downwind dispersion are still and always . . . an issue because of the

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[171] Ibid., 81.
[172] Clark County is the neighbor to Nye County, where the NTS is located.
[173] Algirdas M. Leskys to Divine Strake EA Comments, mail, January 2, 2007. *Public Comment on the National Nuclear Security Administration (NNSA) Proposed Divine Strake Experiment and Draft "Large-Scale, Open-Air Explosive Detonation Divine Strake at the Nevada Test Site Revised Environmental Assessment.*" Las Vegas, Nevada.
[174] Ibid.
[175] Will Parish, "The people versus Infernal Strake," *Desert Voices: The Newsletter of Nevada Desert Experience* 19, no. 2 (June 2006):1.

nature and character of the soils at the NTS."[176] In the end, a virtual Divine Strake took place in a computer simulation. Despite the victory, a mountain at the NTS started to cause controversy and worry.

Chapter 5: The Yucca Mountain Waste Repository Site

Nuclear weapons and nuclear power plants create nuclear waste. Dangerous radionuclides make up the nuclear byproducts. Some have relatively short half-lives, such as xenon – 133 (8 days) and braium-140 (13 days), while others like plutonium-240 (6,500 years), plutonium-239 (24,000 years) and iodine-129 (17,000,000 years) do not.[177] Over the years, when the nuclear arsenal grew, so did the nuclear waste.

The AEC Oak Ridge National Laboratory released the *Status Report on the Disposal of Nuclear Waste* in 1957. The report anticipated a the future when

> we are presented with the problem of controlling the dangerous products of fission for periods of time measured in terms of many hundreds of years, periods long than the effective tenure of any political state in history. We must not only devise ways of protecting ourselves in the present and for our lifetime but, in addition, we must establish the basic technical, social, and administrative control of vast quantities of artificial radioactivity that we must remain effective for at least ten to twenty lifetimes.[178]

From the beginning, the AEC understood the importance of effectively dealing with waste products from nuclear bombs, nuclear reactors, and nuclear power. Because some radionuclides have half-lives for thousands, sometimes millions, of years, the United States set out to find a place to dump this toxic garbage.

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[177] K. R. Road, "Radioactive waste: The problem and its management," *Current Science* 81, no 12 (December 2001), 1536.
[178] Atomic Energy Commission, Oak Ridge National Laboratory. *Status Report on the Disposal of Radioactive Wastes*. Oak Ridge, Tennessee: Oak Ridge National Laboratory, June 25, 1957, 11.

In 1978, the DOE began studying Yucca Mountain, along with dozens of other sites, to determine whether if it was an appropriate and safe site to store nuclear waste. The Nuclear Waste Policy Act of 1982 (NWPA) further pushed the creation of a nuclear dumping ground at Yucca Mountain. NWPA set a schedule for the "sitting, construction, and operation of repositories that will provide a reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level radioactive waste."[179] The Act also discussed any "affected Indian tribe," referring to any tribe "within whose reservation boundaries . . . a repository for high-level radioactive waste" or a tribe,

> whose federally defined possessory or usage rights to other lands . . . out of congressionally ratified treaties may be substantially and adversely affected by the locating of such a facility: *Provided.* That the Secretary of the Interior finds, upon the petition of the appropriate governmental officials of the tribe, that such effects are both substantially and adverse to the tribe.[180]

The Act also allowed the selected state and the Indian tribes affected by the waste repository to challenge the proposal.

Amended in 1987, the Nuclear Waste Policy Act made Yucca Mountain the only site in consideration. Critics argued that the choice of Yucca was purely political. Since Nevada lacked political clout, "in the Congressional votes on the legislation only the senators and representatives from Nevada dissented."[181] Other Congressmen avoided a nuclear waste repository in their state like the plague. The other two locations considered before the vote, Texas and Washington, conveniently were well represented: "in the House . . . the Speaker

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[179] Nuclear Waste Policy Act of 1982. 96 *Statutes at large* 2201, 42 *US Code* 10101, 11.
[180] Ibid., 42.
[181] G.F. White, M.S. Bronzini, E.W. Colglazier, B. Dohrenwent, K. Erickson, "Socioeconomic Studies of High-Level Nuclear Waste Disposal," *Proceedings of the National Academy of Sciences of the United States of America*, 91, no. 23 (November 8, 1994), 10786.

happened to come from Texas and the Majority Leader from Washington."[182] Yucca Mountain's fate appeared grim.

Figure 9 Aerial view of north end of the Yucca Mountain crest in February 1993. Photo courtesy of http://www.energy.gov/environment/8948.htm.

Nevadans nicknamed the legislation the "Screw Nevada" Bill and rallied behind the phrase "not in my backyard." In *Nevada v. Watkins*, the state sued the Department of Energy over the safety of Yucca Mountain, but the Ninth Circuit Court of Appeals dismissed the case in 1991. Meanwhile President Clinton vetoed the Yucca Mountain opening date of 1993. The Senate failed by one vote to override him.[183] Under President Bush's Administration, with the new threat of global terrorism, Yucca Mountain became a national security issue. Ari Fleischer,

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[182] Gilas Alston, "Nuclear Waste Seeks Good Home," *The World Today,* 53, no. 8/9 (August –September, 1997), 236.
[183] Lisa Mascaro, "New Light on Yucca," *Las Vegas Sun,* August 15, 2007.

Press Secretary in 2002, explained that "nuclear materials are stored in 131 above-ground facilities in 39 states . . . One central site provides more protection for this material than do the existing 131 sites."[184] That same year, Congress enacted Public Law 107-200, which approved opening Yucca Mountain.[185]

Throughout the political wrestling, opponents argued that Yucca Mountain threatened the health of American citizens. Yucca Mountain sits on the northwestern border of the NTS, and "is located in a region known for its tectonic activity – both seismicity and volcanism."[186] A 1992 earthquake in Joshua Tree National Park, California broke the windows in the Yucca Mountain field building, located only six miles from Yucca Mountain. Despite the earthquake, the "Energy Department had expressed confidence that no earthquake would occur in the area for at least 10,000 years."[187] Many questioned this unwavering confidence. No nuclear country attempted such a feat to bury its nuclear waste, and none of the nearby citizens, Shoshone or not, wanted the United States to be the first. Critics argued that Yucca Mountain did not meet the requirements for a nuclear waste site. A report by the International Atomic Energy Agency, entitled *Scientific and Technical Basis of the Geological Disposal of Radioactive Wastes*, summed up the requirements for deep disposal of nuclear waste: there must be long term geological stability; a low groundwater content and flow; stable geochemical or hydro chemical conditions at depth; and there must be good engineering properties.[188]

Studies of Yucca Mountain questioned if the site could live up to these standards. In June 1997, "scientists working at the level where the water would be stored found rainwater which

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[184] George W. Bush Administration, Statement by the Press Secretary: Yucca Mountain, February 15, 2002.
[185] Joint Resolution, Public Law 107-200, 107th Congress (July 23, 2002).
[186] Allison Macfarlane, "Underlying Yucca Mountain: The interplay of Geology and Policy in Nuclear Waste Disposal," *Social Studies of Science* 33, no. 5 (October 2003), 788.
[187] "In Brief," *The Bulletin of Atomic Scientists*, 48, no. 8 (August 1992), 4.
[188] International Atomic Energy Agency, Technical Reports Series no. 413. *Scientific and Technical Basis for the Geological Disposal of Radioactive Wastes*. Vienna: 2003, 6.

had fallen only forty years ago. Their predictions had indicated that any water at that level would be several thousands of years old."[189] Over time, the radioactive waste could enter the water table used by nearby communities. The Yucca Mountain Legacy Project studied the potential for groundwater contamination. The project had clear ties to the Western Shoshone, since one of its authors, Jennifer Olaranna Viereck "[supported] Western Shoshone concerns about sovereignty, resource preservation, treaty rights and impacts on health and habit."[190]

The Legacy Project reported on the health effects Yucca Mountain could cause to the Western Shoshone. The Environmental Protection Agency (EPA) based standards for Yucca Mountain on consumption of two liters per day. The Legacy Project pointed out that people who live in the Death Valley region consume more water, "result[ing] in significantly more potential exposure to containments. The standard also assumed exposure limited to a thirty year period. Tribal families whose lands lie within reservation boundaries are bound to a specific location, not just for their lifetime, but for consecutive generations."[191] Even worse, if Yucca Mountain failed "there will be no warning container failure until radionuclides are detected 18 kilometers offsite, at the point of compliance with the Environmental Protection Agency's . . . exposure standards."[192] Evidence piled up against Yucca Mountain long-term safety.

In 2005, members of the Western Shoshone Timbisha and Te-Moak bands sued the Department of Energy. The plaintiffs argued that the terms of the Treaty of Ruby Valley did not allow the United States government to deposit nuclear waste on their land. U.S. District Court

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[189] Gilas Alston, "Nuclear Waste Seeks Good Home," 237.
[190] Jennifer Viereck, John Hadder, George Rice, *The Yucca Mountain Legacy Project: Phase I: Groundwater Contaminant Baseline Data for the Yucca Mountain Region.* May 2006, 4.
[191] Ibid., 28.
[192] Ibid., 25.

Judge Phillip Pro dismissed the case, concluding that the Western Shoshone could not prove there was any "irreversible or irrevocable harm" of the proposed Yucca Mountain.[193]

In 2007, the United Nations Committee on the Elimination of Racial Discrimination (CERD) issued a report to the United States about its treatment of the Western Shoshone Nation. The CERD report said the "United States . . . fails to consider any of the Committee's recommendations to 'freeze', 'desist' and 'stop' further harmful activities."[194] One harmful activity was "continuation with plans to store nuclear waste on Western Shoshone ancestral lands."[195] The CERD decision gave the Western Shoshone a moral victory, but it made no impact on United States' Yucca Mountain proposal.

Like the NTS, Yucca Mountain threatened more than the health of the Shoshone. A 1990 study showed that "Western Shoshone people currently use 62% of the 35 plants that they identified" at Yucca Mountain.[196] Many of these plans had medicinal and spiritual value. Spiritually, the entire concept of burying waste contrasted with Shoshone belief in Mother Earth. Dr. Eberhardt-Bobb discussed with a Shoshone elder her recent tour of Yucca Mountain. The elder scolded her against going into the underground tunnel, repeating "you shouldn't go in there, don't go in there, you're not supposed to go underground, it's not our way."[197] Going underground was sacrilegious, putting nuclear waste there was even worse. Meanwhile, Western Shoshone used Yucca Mountain during their annual Spring Gathering. They celebrated near the mountain, camped, prayed, and enjoyed the land. As of 2011, the Shoshone staff pole still stood

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[193] Ken Ritter, "Tribe fights Yucca in court: Judge hears Western Shoshone lawsuit, makes no ruling," *Las Vegas Review*-Journal (April 25, 2005).
[194] UN Committee on the Elimination of Racial Discrimination, *In Response to United States Periodic Report Annex II Early Warning and Urgent Action Procedure Decision 1(68) (Western Shoshone)*, December 2007, 1.
[195] Ibid., 2.
[196] Richard W. Stoffle, David B. Halmo, Michael J. Evans, John E. Olmsted, "Calculating the Cultural Significance of American Indian Plants: Paiute and Shoshone Ethnobotany at Yucca Mountain, Nevada," *American Anthropologist.*, 92, no. 2 (June 1990), 425.
[197] Dr. Bonnie Eberhardt Bobb, interviewed by author.

at the top of the mountain. It was placed there by Johnnie Bobb "to make the air feel better, to make the water cleaner" and to send "prayers . . . to the air."[198] The gathering at Yucca Mountain ended when three of the participants learned they had thyroid cancer.[199] Yucca Mountain made its way into Shoshone spiritual ceremonies and history.

In Shoshone myth, the mountain had always been a powerful and threatening figure. Because of its curved shape and seismic activity, the mountain shared the characteristics of moving snake. According to Corbin Harney,

> Yucca Mountain . . . lies asleep like a snake. When you walk on top of the mountain, it feels like you are walking on dried snakeskin. Someday, when we wake that snake up, a few of us will have to sit down and talk to that snake. It will get mad and rip open. When it awakens, we will all go to sleep. With his tail, that snake will move the mountain, rip it open, and the poison will come out on the surface.[200]

In 2010, the fate of Yucca changed. President Obama, who promised in his campaign to shut down Yucca Mountain forever, stayed true to his word. Obama's proposed budget cut funding to the project. Obama and his Energy Secretary Steven Chu "have been emphatic that nuclear waste storage at Yucca Mountain is not an option, period."[201] It looks, as of now, that the snake will remain asleep.

Chapter 6: Leaving out the Western Shoshone

Why history forgot the Western Shoshone

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[198] Ibid.
[199] Ibid.
[200] The Way it is, pg. 154
[201] Keith Johnson, "Nuclear Waste: Yucca Mountain's Scrapped, So Now What?" Wall Street Journal Blog, entry posted on February 26, 2009, http://blogs.wsj.com/environmentalcapital/2009/02/26/nuclear-waste-yucca-mountains-scrapped-so-what-now/ (accessed March 2, 2011).

The Downwinder story took time to unfold. Americans exposed to ionizing radiation had to fight against the AEC's reports that fallout did not cause health problems. Utah residents Eugene and Zenna Mae Bridges lost their son in 1956 to lymphosarcoma, a cancer of the immune fighting lymphatic cells.[202] They did not connect nuclear testing with their son's premature death until 1977, when "the office of Dr. Joseph Lyon at the University of Utah called to get approval to use Lon [their son] in a study they were doing on the relationship of the nuclear fallout from Nevada and leukemia in children in the state of Utah."[203] Other Downwinders waited years until they learned why they and their loved ones had such a high rate of cancer. In many cases, those exposed died before Congress investigated the matter.

The 96th Congress's Subcommittee on Oversight and Investigation conducted research in 1980, and then held four days focusing on the human consequences of the continental testing. The House published the report *The Forgotten Guinea Pigs*. The research concluded that "the government was aware of the health hazards posed to the people living downwind for the test site, the government failed to provide adequate protection."[204] The investigation focused on atmospheric testing. Two panels of citizens gave personal accounts for the investigation. The majority hailed from St. George, Utah. A few came from Nevada, but none were Shoshone. [205] Ironically, the results of the investigation seemed all but lost, since that same decade the NTS would reach its pinnacle in activity.

The Western Shoshone need to be more clearly emphasized as a notable group of Americans exposed to fallout in the United States. Throughout my research, I saw a tendency to

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[202] Interview with Zenna Mae and Eugene Bridges, interviewed by Mary Palevsky, November 19, 2004. Nevada Test Site Oral History Project, University of Nevada, Las Vegas.
[203] Ibid.
[204] House of Representatives, *Forgotten Guinea Pigs: Report on Health Effects of Low-Level Radiation Sustained as a Result of the Nuclear Weapons Testing Program Conducted by the United States Government*, 96th Cong., 2nd sess., 1980, 3.
[205] Ibid., 21.

emphasis some groups and to all but ignore others. The most-well known and discussed Downwinders are the rural sheepherder and obedient Latter Day Saints in Utah. The Atomic Veterans are more frequently discussed, while many historians mention the workers at the Nevada Test Site in passing. Lastly, rarely mentioned, if at all, are the Western Shoshone. In Carole Gallagher's magnificent photo-journalism book, *American Ground Zero*, interviews with exposed Americans are split into three sections. One section is devoted to the Nevada Test Site workers, another to the Atomic Veterans, and the last to the Downwinders. While Gallagher put the Western Shoshone in the Downwinder section, there is only one interview. Even if this is lacking, it is more discussion than others devote. Most histories of the Nevada Test Site or American fallout victims do not mention the Western Shoshone. Only after I read interviews conducted by UNLV's Nevada Test Site Oral History Project did I stumble upon the Western Shoshone.

The Western Shoshone are Downwinders. They lived downwind from the Nevada Test Site and suffered from the nuclear testing. While the AEC claimed to know where the fallout went, Dr. Eberhardt-Bobb's studies showed that the deadly clouds drifted all over Nevada. There are clear parallels in Shoshone and Downwinder stories. The Western Shoshone have been connected involuntarily to the NTS since its establishment, but have been absent in its history. The 1984 court case *Irene Allen vs. United States* did not include the Western Shoshone. Dr. Eberhardt-Bobb only knows of one Shoshone family that applied for RECA funds.[206] Eberhardt-Bobb explained that the forms were too confusing, especially since English was not the first language for many elder Shoshone. Other roadblocks existed for the Western Shoshone that stopped them from being viewed as Downwinders, and protesting the NTS.

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[206] Dr. Bonnie Eberhardt-Bobb, interviewed by author, Las Vegas, NV, December 14, 2010.

The Western Shoshone's lack of political power, money and organization also contributed to their absence from the record. In 1985 only 2,500 Western Shoshone existed in the United States.[207] The small population was loosely organized and individuals identified themselves with their local tribal bands, not as a member of the Western Shoshone Nation. Not until 1984 did the Western Shoshone bands form the Western Shoshone National Council (WSNC), the Western Shoshone government.[208] By 1989, the WSNC incorporated eighteen Western Shoshone groups. Despite the Western Shoshone organization, feelings towards modernity split the nation into traditionalists and modern youth. Traditionalists argued for the Ruby Valley Treaty, while modern Western Shoshone worked nine-to-five jobs and did not concern themselves with old treaties. The lack of unity explains why Shoshone did not protest the NTS until the late 1980s. Many factors caused the Western Shoshone to not be viewed as Downwinders. Nonetheless, the NTS is also to blame in its apathetic treatment of the Shoshone and their spiritual beliefs.

Apathy towards the Western Shoshone

Despite knowing that the Western Shoshone used the NTS, the federal agencies in charge of the NTS did not recognize the importance of land to the Shoshone. From "1965 – 1969 . . . cultural items were recovered from several sites within the Nevada Test Site . . . by Frederick Worman . . . anthropologist and biologist with the Los Alamos National Laboratory and William

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[207] Richard O. Clemmer, "The Pinon-Pine – Old Ally or New Pest? Western Shoshone Indians vs. the Bureau of Land Management in Nevada," *Environmental Review* 9, no. 2 (September 1985): 132. This number may be slightly low because according to blood quantum laws, to qualify as an American Indian a person must be at least a quarter American Indian. The Western Shoshone did not recognize these laws, and claimed that people with any amount ancestry of Western Shoshone belong to the nation.

[208] Elmer R. Ruseo, "Historic Change in Western Shoshone Country: the Establishment of the Western Shoshone National Council and Traditionalist Land Claims," *American Indian Quarterly* 16, no. 3. (Summer, 1992): 346.

McKinnis, an engineer with the Lawrence Livermore National Laboratory."[209] Many of these objects had cultural and spiritual meaning, and were not meant to be handled. In the general history of the test site, the DOE did not draw importance to the Western Shoshone. The Department of Energy's "Origins of the Nevada Test Site" history recognized that Western Shoshone "established winter camps at various springs across the site."[210] But there is no further mention of the Western Shoshone. After the establishment of the test site, they disappeared from the DOE record.

NTS was aware of the Western Shoshone's relationship with the land. The American Indian Religious Freedom Act, enacted in 1978, proclaimed that "it shall be the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religious of the American Indian . . . including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites."[211] Twelve years later Congress passed the Native American Graves Protection and Repatriation Act (NAGPA). NAGPA protected Native American rights of burial sites, cultural items, and sacred objects found on federal lands or under the control of federal agencies.[212] Countless protests held by the Shoshone since the 1980s, informed the NTS of the Western Shoshone's position and spiritual beliefs. In 2000, the NAGPRA informed the Nevada Test Site that the artifacts collected by Worman and McKinnis

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[209] National NAGPRA, "National Park Service: Notice of Intent to Repatriate Cultural Items from the Nevada Tst Site, NV in the Possession of the Nevada Operations Office, U.S. Department of Energy, Las Vegas, NV," http://www.nps.gov/nagpra/fed_notices/nagpradir/nir0151.html (accessed March 14, 2011).
[210] Fehner and Gosling, 6.
[211] *American Indians Religious Freedom Act Portion as Amended,* Public Law 95-341, 42 U.S.C. 1996, (August 11,1978),1.
[212] *Native American Graves Protection and Repatriation Act as Amended,* Public Law 101-601; 25 U.S.C. 3001 (November 16, 1990).

met "the definition of 'sacred object' and 'unassociated funerary object.'"[213] The NTS was not blind to the Western Shoshone presence on the land, just apathetic.

Apathy towards the Western Shoshone meant that the DOE did not respect spiritual beliefs. The NTS never considered how testing destroyed Shoshone holy land. Dr. Eberhardt-Bobb shared with me how Johnnie Bobb "has gone up [to the Nevada Test Site] and begged to go out there and pray, and [the security at the NTS] said 'well, make an appointment.'" To this day, the Department of Energy has not recognized the importance of land to the Western Shoshone. Numerous times during the interviews, the Bobb's alluded to a lack of respect shown by the Department of Energy towards for the Western Shoshone spiritual beliefs.

The NTS never viewed the Western Shoshone as important. After all, the small minority of American Indians could not compete with the behemoth industry of nuclear weapons. It would be up to museums and historians to include the Western Shoshone.

The Atomic Testing Museum

The Atomic Testing Museum, just off the Las Vegas Strip, opened in 2005. The museum explored nuclear testing conducted by the United States, focusing on the NTS. While it did include the Western Shoshone in its exhibits, it propagated the same view as NTS. The museum introduced its visitors with a map of the Nevada, showing the "Traditional Native American Land Use and Area" of the Western Shoshone and the Southern Paiute. The timeline, beginning in 1849, showed the bias of museum. The 1849 date signified the introduction of pioneer and explorers; any events before the arrival of non-Native Americans did not warrant mentioning. The timeline mentioned the Treaty of Ruby Valley, but did not present the actual treaty. Instead,

[213] National NAGPRA, "National Park Service."

the museum provided the link to the Western Shoshone website. Considering how much reading the entire museum required, it was odd not to include a four page document for display.

The Atomic Testing Museum also disregarded Western Shoshone beliefs and actions. The brief description of the relationship between the Shoshone and the land did not convey the spiritual connection. One placard stated that "Indian people have opposed the use and destruction of the land and its resources and efforts that have prevented them access to their homeland."[214] According to this description, the Indian people wanted access to the land for its resources, nothing else. The museum did not mention spiritual beliefs. There was no discussion of Western Shoshone and radiation. Visitors could not view the Western Shoshone as Downwinders by the information given at the museum. The museum only briefly discussed Yucca Mountain, and contemptuously treated the anti-nuclear movement. Overall, the Atomic Testing Museum continued the tradition of downplaying the relationship between the Western Shoshone and the NTS.

The Western Shoshone relationship with the Nevada Test Site is complicated. The relationship mixes religious rights, protest movements, and Native American land issues with nuclear testing. But history is never simple, and there is no excuse for why the Western Shoshone have been forgotten. Critics may cite that the Western Shoshone mistrust outsiders, but this is merely a challenge to a historian, not the end all.

Conclusion

While nuclear testing stopped at the Nevada Test Site in 1992, the site is currently still in use. Starting in 1995, the Department of Energy began subcritical experiments to "study the

[214] The Atomic Testing Museum, 755 E. Flamingo Rd. Las Vegas, NV., visited by author December 2010.

impact that aging plutonium and new methods of producing replacement warhead components will have on the reliability of the nuclear stockpile."[215] Subcritical experiments went hand in hand with the Comprehensive Test Ban Treaty of 1996. The Comprehensive Test Ban Treaty required

> 1. Each State Party undertakes not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent such nuclear explosion at any place under its jurisdiction or control.
>
> 2. Each State party undertakes, furthermore, to refrain from causing, encouraging, or in any way participating in the carry out of nuclear weapons test explosion or any other nuclear explosion. [216]

The United States signed the treaty in 1996, but has not ratified it as of 2011. Currently, the Department of Energy "maintains the capability to resume testing should the necessity arise and continues to use the site for variety of national security and other needs"[217] The controversial Divine Strake and Yucca Mountain show that while the test site has stopped nuclear testing, its relationship with the Western Shoshone is far from over.

The Western Shoshone witnessed nuclear tests, physically and spiritually suffered and healed with the devastated landscape, and protested the NTS. The Nevada Test Site, a relic from the Cold War, shaped the lives of the Western Shoshone.

The introduction of nuclear weapons changed mankind forever. The ability to obliterate a city of tens of thousands within a second created fear beyond measure, an arms race of incalculable danger, and impacted the lives of Americans for generations to come. While some Americas only lived with the threat of a potential nuclear threat, other Americans experienced

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[215] Frank von Hipple and Suzanne Jones, "Take a Hard look at subcritical tests," *Bulletin of Atomic Scientist*" 52, no. 6 (November/December, 1996): 44.
[216] "Comprehensive Nuclear-Test-Ban Treaty," signed September 24, 1996, 4.
[217] Fehner and Gosling, 9.

one in their backyards. Overtime, historians recognized the unintended impacts of the Nevada Test Site, yet history forgot the Western Shoshone. The Shoshone minority status in American society does not mean their relationship with the NTS is insignificant. Instead, by studying this relationship, we shed light on the harmful effects caused to minority groups during the Cold War.

Bibliography

Alston, Gilas. "Nuclear Waste Seeks Good Home." *The World Today,* 53, no. 8/9 (August –September, 1997): 235-37.

Andrews, Howard L. "Radioactive Fallout From Bomb Clouds." *Science* 122, no. 3167. (September 9, 1955): 453 - 456

Atomic Energy Commission: Nevada Test Organization. *Background Information on Nevada Nuclear Tests (July 15, 1957),* Las Vegas, Nevada: Office of Test Information.

Atomic Energy Commission, Oak Ridge National Laboratory. *Status Report on the Disposal of Radioactive Wastes*. Oak Ridge, Tennessee: Oak Ridge National Laboratory, June 25, 1957.

Atomic Energy Commission. *Report of Off-Site Radiological Safety Activities: Operation Teapot Nevada Test Site Spring 195.* Prepared by J.B. Sanders, O.R. Placak and M.W. Carter. Santa Fe Operations Office: The Test Division, 1955.

Atomic Energy Commission. *Schedule of Known Upcoming NTS Demonstrations.* September 1, 1987.

Atomic Energy Commission. *Some Effects of Ionizing Radiation on Human Beings: A report on the Marshallese and Americans accidentally exposed to radiation from Fallout and a Discussion of Radiation Injury in the Human Being*. Ed. E. P. Cronkite, V.P. Bond. and C.L. Dunham,. July 1956.

Atomic Energy Commission. *Upcoming Events.* May 5, 1988.

Bradley, David. *No Place to Hide.* New England: University Press of New England, 1946.

Butigan, Ken. *Pilgrimage Through a Burning World.* New York: New York Press, 1999.

Clemmer, Richard O. "The Pinon-Pine – Old Ally or New Pest? Western Shoshone Indians vs. the Bureau of Land Management in Nevada." *Environmental Review* 9, no. 2 (September 1985): 131 – 149.

Collonge, Chelsea. "A New Page in Our Commitment to Dialogue in the Nuclear Age." *Desert Voices: The Newsletter of Nevada Desert Experience* 19, no. 2 (June 2006): 3.

United States. "Comprehensive Nuclear-Test-Ban Treaty," signed September 24, 1996.

Department of Energy: Advisory Committee on Human Radiation Experiments. "How Does Radiation Affect Humans?" Department of Energy. http://www.hss.energy.gov/HealthSafety /ohre/roadmap/achre/intro_9_5.html (accessed March 2, 2011).

Department of Energy: Advisory Committee on Human Radiation Experiments. "What is Ionizing Radiation?" Department of Energy. http://www.hss.energy.gov/Health Safety/ohre/roadmap/achre/intro_9_1.html (accessed March 2, 2011).

Department of Energy. "Radiation Exposure Compensation System Claims to Date Summary of Claims Received by 03/17/2011, All Claims." http://www.justice.gov/civil/omp/omi/Tre_SysClaimsToDateSum.pdf (accessed March 12, 2011).

Department of Energy. *United States Nuclear Tests July 1945 through September 1992.* DOE/NV-209 REV 15. (December 2000).

Dunning, Gordon M. "Effects of Nuclear Weapons Testing." *The Scientific Monthly* 81, no. 6 (December 1955): 265 – 70.

Eberhardt-Bobb, Dr. Bonnie. *A Soil Contamination Survey of Timbisha Shoshone Tribal lands within close Proximity to the Nevada Test Site.* Tupippuh Project , Death Valley CA.

Eberhardt-Bobb, Dr. Bonnie. *Radionuclide and Radioactivity Monitory on Yomba Shoshone Tribal Land, Agricultural and Ranching Settlements, and Traditional Use Areas in Nevada.* Yomba Shoshone Tribe, Austin, Nevada.

Fehner, Terrence R. and F. G. Gosling Department of Energy. *Origins of the Nevada Test Site*. DOE/MA-0519. (December 2000).

Fradkin, Philip L. *Fallout: An American Nuclear Tragedy.* Tucson: University of Arizona, 1989.

Gallagher, Carole. *American Ground Zero: The Secret Nuclear War.* Cambridge: MIT Press, 1993.

George W. Bush Administration. Statement by the Press Secretary: Yucca Mountain, February 15, 2002.

Harney, Corbin. *The Nature Way.* Las Vegas: University of Nevada Press, 2009.

Harney, Corbin. *The Way It Is: One Water . . . One Air . . . One Mother Earth.* Nevada: Blue Dolphin Publishing, 1995.

Hewlett, Richard G. and Jack M. Holl. *Atoms for Peace and War 1953 -1961: Eisenhower and the Atomic Energy Commission.* Berkeley: University of

California, 1989.

Hipple, Frank von, and Suzanne Jones. "Take a Hard look at subcritical tests." *Bulletin of Atomic Scientist*" 52, no. 6 (November/December, 1996): 44-47.

House of Representatives. *Forgotten Guinea Pigs: Report on Health Effects of Low-Level Radiation Sustained as a Result of the Nuclear Weapons Testing Program Conducted by the United States Government*, Washington, DC: Government Printing Office, 1980.

"In Brief." *The Bulletin of Atomic Scientists*, 48, no. 8 (August 1992):4.

International Atomic Energy Agency, Technical Reports Series no. 413. *Scientific and Technical Basis for the Geological Disposal of Radioactive Wastes*. Vienna: 2003.

Kassenova, Togzhan. "The Lasting Toll of Semipalatink's Nuclear Testing." *The Bulletin of Atomic Scientists* (September 28, 2009).http://thebulletin.org/web-edition/features/the-lasting-toll-of-semipalatinsks-nuclear-testing (February 3, 2011).

Lifton, Robert Jay and Greg Mitchell. *Hiroshima In America: Fifty Years of Denial.* New York: G.P. Putnam's Sons, 1995.

Leskys, Algirdas M. to Divine Strake EA Comments, mail, January 2, 2007. *Public Comment on the National Nuclear Security Administration (NNSA) Proposed Divine Strake Experiment and Draft "Large-Scale, Open-Air Explosive Detonation Divine Strake at the Nevada Test Site Revised Environmental Assessment*." Las Vegas, Nevada.

Macfarlane, Allison. "Underlying Yucca Mountain: The interplay of Geology and Policy in Nuclear Waste Disposal." *Social Studies of Science* 33, no. 5 (October 2003): 783-807.

"Mercury Chapel Rededicated." *Desert Voice* no. 5 (Spring 1989): 4.

Mollin, Marian. *Radical Pacifism In Modern America: Egalitarianism and Protest.* Pennsylvania: University of Pennsylvania Press, 2006.

Mormonism: A Historical Encyclopedia. Edited by W. Paul Reeve and Ardis E. Parshall. Santa Barbara, CA: ABC-CLIO, 2010.

National NAGPRA. "National Park Service: Notice of Intent to Repatriate Cultural Items from the Nevada Tst Site, NV in the Possession of the Nevada Operations Office, U.S. Department of Energy, Las Vegas, NV." http://www.nps.gov/nagpra/fed_notices/nagpradir/nir0151.html (accessed March 14, 2011).

"NDE Board Welcomes New Members, New Visions." *Desert Voices: The Newsletter of Nevada Desert Experience* 19, no. 2 (June 2006): 2.

Ortmeyer, Pat, and Arjun Makhijani. "Worse Than We Knew." *The Bulletin of Atomic Scientists* (November/December 1997): 46 -50.

Parish, Will. "The people versus Infernal Strake." *Desert Voices: The Newsletter of Nevada Desert Experience* 19, no. 2 (June 2006): 1.

Pochin, Edward. *Nuclear Radiation: Risk and Benefits*. Edited by Sir Alec Merrison. New York: Oxford University Press, 1983.

Rautenstrauch, Kurt R and Thomas P. O'Farrell. "Relative abundance of Desert Tortoises on the Nevada Test Site." *Southwestern Association of Naturalists* 43, no. 3 (September 1998): 407-411.

Radiation Exposure Compensation Act. "About The Program." http://www.justice.gov/civil/torts/const/reca/about.htm. (accessed March 12, 2011).

Road, K. R. "Radioactive waste: The problem and its management." *Current Science* 81, no 12 (December 2001): 1534 – 1546.

Rogers, Keith. "Pleading for Peace." *Las Vegas Review-Journal*. (March 24, 2002).

Romney, E.M., A. Wallace, and J.D. Childress. *Revegetation Problems Following Nuclear testing Activities at the Nevada Test Site*. Laboratory of Nuclear Medicine and Radiation Biology University of California, Los Angles: 1-8.

Ruseo, Elmer R. "Historic Change in Western Shoshone Country: the Establishment of the Western Shoshone National Council and Traditionalist Land Claims." *American Indian Quarterly* 16, no. 3. (Summer, 1992): 337-360.

"Socioeconomic Studies of High-Level Nuclear Waste Disposal." *Proceedings of the National Academy of Sciences of the United States of America*, 91, no. 23 (November 8, 1994): 10786-10789.

Stoffle, Richard W., David B. Halmo, Michael J. Evans, John E. Olmsted. "Calculating the Cultural Significance of American Indian Plants: Paiute and Shoshone Ethnobotany at Yucca Mountain, Nevada." *American Anthropologist.*, 92, no. 2 (June 1990): 416-32.

Turkevich, Anthony. "Assuring Public Safety in Continental Weapons Tests: AEC Thirteenth Semiannual Report." *Bulletin of Atomic Scientists* 9, no. 3. (April 1953): 86 – 89.

Tyler, Carroll L. to. Dr. Lester Hachta, August 20, 1953. In *United States Atomic Energy Commission.* Albuquerque, New Mexico.

UN Committee on the Elimination of Racial Discrimination. *In Response to United States Periodic Report Annex II Early Warning and Urgent Action Procedure Decision 1(68) (Western Shoshone).* December 2007.

U.S. Department of Energy. *Large-Scale, Open-Air Explosive Detonation DIVINE STRAKE at the Nevada Test Site Pre-Approval Draft,* DOE/EA-1550. Las Vegas, Nevada: Office of Test Information, November 2005.

U.S. Environmental Protection Agency. "Commonly Encountered Radionuclides." Environmental Protection Agency. http://www.epa.gov/rpdweb00/radionuclides/index.html (accessed March 3, 2011).

United States. "Treaty Banning Nuclear Weapon Tests in the Atmosphere, Outer Space and Under Water," August 5, 1963. *United States Treaties and the Other International Agreements.*

United States. "Treaty of Ruby Valley: United States Treaty with the Western Shoshoni, 1863." October 1, 1863. *U.S. Statues at Large.*

Viereck, Jennifer, John Hadder, George Rice, *The Yucca Mountain Legacy Project: Phase I: Groundwater Contaminant Baseline Data for the Yucca Mountain Region.* May 2006.

Wasserman, R.H and B.F. Trum. "Effect of Feeding Dogs the Flesh of Lethally Irradiated Cows and Sheep." *Science* 121, no 3156 (June 24, 1955): 894-896.

White G.F., M.S. Bronzini, E.W. Colglazier, B. Dohrenwent, K. Erickson.