

# The Devil's Bargain: The Effects of Nuclear Revolution on New Mexican Culture of Work

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***Abstract:** In the winter of 1942-1943, the Manhattan Project arrived in New Mexico and joined the “Land of Enchantment” and nuclear science in an indelible bond. In the postwar decades, what was at first a hurriedly-built scientific community in the Jemez Mountains grew not only to become the Los Alamos National Laboratories, but also acted as a catalyst for an influx of scientific colonization, as the laboratories produced extensions and partner institutions along the Rio Grande River. This development flooded the region with employment opportunities that were new and radically different from the types of occupations previously known to the residents of New Mexico. This essay examines one of the Manhattan Project’s local legacies by showing how the creation of New Mexico’s nuclear complex affected employment patterns and cultures of work in the region. After centuries of dependence on the land, New Mexicans switched to a dependence on nuclear jobs. For many, this shift seemed like a bonanza; however, as the history of the last seventy years has shown, the new economy has come to be regarded as a “Devil’s bargain” as the change has not always meant improvements in the lives and environments of the indigenous inhabitants.*

***Keywords:** Manhattan Project, atomic bomb, nuclear industry, New Mexico, Los Alamos*

In the winter of 1942-43, science and technology invaded the southwestern state of New Mexico. Originally taking the form of the Manhattan Project—the United States’ military top-secret nuclear program—the scientific

revolution forged an indissoluble bond between the so-called “Land of Enchantment” and nuclear science. The introduction of the nuclear industry revolutionized the old work patterns of the region. The changes were, in fact, phenomenal. Their effects on the agro-pastoral cultures of New Mexico are comparable even with those changes caused by the Industrial Revolution in the American East, and yet, as great as these changes were, they did not change the basic problems of survival that have always plagued the indigenous population of the region. New Mexico’s diverse cultural groups faced—and still face—the same struggles for survival as their ancestors did. Long before the region was incorporated into the United States, Native American tribes had competed for the limited resources of water, game, wood, and grazing lands, and this situation continued after statehood was achieved in 1912. One would think that the arrival of the nuclear industry and its technological advances would have meant an increase in basic resources and an improvement of the living standards of local inhabitants; however, according to William DeBuys, “This competition [for survival] is virtually as intense today as it was two thousand years ago, particularly if one adds ‘employment’ to the list of resources at stake” (DeBuys 8). Employment was a relatively new resource for New Mexicans at the turn of the twentieth century, but World War Two increased its value and accelerated the spread of novel life-styles when it brought the Manhattan Project to an isolated New Mexican *mesa*.

On July 16, 1945, the world’s first atomic bomb exploded in the New Mexican desert at a site christened Trinity by the father of the atomic bomb, J. Robert Oppenheimer. The explosion marked the climax of the Manhattan Project, the huge two-billion dollar enterprise funded by the United States in collaboration with the United Kingdom and Canada. The Project had its origins in 1939 when Albert Einstein sent a letter to President Roosevelt in which Einstein warned the American president of the Germans’ progress in the race to create an atomic bomb. This letter gave the impetus to covertly develop atomic research in the United States. The secret project was spread over several states, but its final phase of development occurred on the Pajarito Plateau in northern New Mexico. The fate of this region was sealed on November 16, 1943, when Oppenheimer made the suggestion to his military counterpart, General Leslie Groves, that Ashley Pond’s Los Alamos Ranch School would be a suitable location for the establishment of a secret laboratory to work on the design and construction of the bomb. New Mexico had thus acquired a new identity as the cradle of the nuclear age.

Through the years that followed, the hurriedly built scientific community in the Jemez Mountains not only grew to become the Los Alamos National Laboratories (LANL); it also came to have a momentous impact on the surrounding region. The laboratories acted as catalysts for an influx of scientific colonization, as they produced extensions and partner institutions along the Rio Grande River. This development flooded the region with employment opportunities that were new and radically different from the types of occupations previously known to the residents of New Mexico. Until the 1940s, the majority of the state's population still relied on subsistence agriculture. Also, the population was comprised of very disparate cultures of work: cultures of work that depended on their ethnic affiliations.

However, these disparate cultures and the views of work they fostered underwent a rapid series of socio-economic, demographic and environmental metamorphoses: metamorphoses that began in the 1940s but are still occurring today. One of the keys to understanding these developments involves understanding the rapidity of change. Naturally, these metamorphoses involved the way that the Manhattan Project and the subsequent development of the Los Alamos Laboratories (LANL) became interlaced into the constitution of New Mexican cultures and work life. However, understanding the effect of this interlacement requires an analysis of how the nuclear boom radically accelerated a process that had already begun in the region. As I will discuss in this essay, before the 1940s New Mexico had already begun to move from a subsistence economy to one based on wage work; however, the nuclear boom effected a rapid shift between these two economies. After centuries of dependence on the land, New Mexicans switched to a dependence on nuclear jobs. For many, this shift seemed like a bonanza; however, as the history of the last seventy years has shown, the new economy has come to be regarded as a "Devil's bargain" with nuclearism,<sup>1</sup> in that the new work has not always meant improvements in the lives and environments of the indigenous inhabitants. The purpose of this essay, then, is to examine the double-edged quality of the nuclear boom. I will explore how the creation of the LANL and its affiliates has affected employment patterns and cultures of work in the region by speeding up the shift from an agro-pastoral system of subsistence to a new economy based on cash and wage work.

1 Nuclearism is a term that is generally defined as a faith in nuclear weapons as the means for maintaining national security.

This analysis will first focus on an examination of the “seeds” of the boom. These seeds grew, aiding the development of a new economy and signaling that New Mexico was ideally prepared for change. The essay then centers on the regional metamorphosis, showing how the rise of the nuclear economy bestowed new opportunities on the state. In this way, the essay underscores how the benefits acquired through new sources of employment affected the local populations. Lastly, the essay examines the socio-economic, cultural and environmental downsides of the change. Relating statements from local workers, the essay addresses how these workers have become disillusioned with the new economy and with the nuclear industry in general, especially after these workers have become aware of the health and environmental risks they have run—risks that were often kept from them in the name of national security and secrecy.

When New Mexico acquired statehood in 1912, the effects of its sixty-four years as a territory were most apparent. The social strata between Anglo-colonists, Hispanics and Native Americans remained well defined. Furthermore, the state was economically dependent upon the American East. This dependence especially took the form of a neocolonial relation in which New Mexico figured as a producer of raw materials whose only markets were in the industrialized eastern states. Powerful business concerns in the East, which bought and transformed these materials, also controlled the markets. This situation cast the fledgling state in very much the same subservient role it had its long territorial period. The pivotal factor leading to statehood was the growing influx of Anglo-American settlers, which was facilitated by the arrival of the railroad in the 1880s. Nonetheless, the “Americanization” of New Mexico was a rather slow process: it was hindered by the region’s history of successive conquests and settlements, and by the hardships of life in the desert.

In order to understand the changes experienced by indigenous residents of New Mexico after World War Two, it is important to comprehend who these people were and also the pre-eminent significance of the land and land ownership in their cultures. The population of pre-war New Mexico was an admixture of three major groups: Native Americans (Pueblo, Apache and Navajo Indians), Hispanics and Anglo settlers. When the U.S. was on the brink of war, New Mexico remained largely a backwater, plagued by droughts and impoverished by the economic depression, while its small communities clung to self-sufficiency despite the increasing need for supplementing wages. Most New Mexicans regarded the land as a source of

life; therefore, their definition of work was to work the land in order to survive, and most occupations sought to exploit the desert's limited resources. This reliance on land transpired in some of its representations among New Mexico's diverse cultures. In the Pueblo Indian culture, for example, the land had—and still has—a spiritual and sacred quality as exemplified by the belief that the Pueblo people were born out of the earth. Land also played a central role in Hispanic culture, which underscored its protective and motherly characteristics as the source of their traditional pastoralism. While the Anglo population mostly consisted of city-dwellers, health-seekers, artists or businessmen, a few homesteaders and ranchers also relied on land ownership, valuing primarily the land's productive potential.

The cultural ecology of northern New Mexico reveals that Hispanic villagers and Pueblo Indians used the land for virtually every aspect of daily life. Houses were traditionally built using mud and river cobbles for the foundations, sun-dried adobe bricks, and beams and lintels from the surrounding forests. Fields were planted with fruits, vegetables, corn and other cereals. Staples included pinto beans and green *chiles*—New Mexican hot peppers. In addition, plants and fruits were also gathered for medicinal purposes. Hunting, fishing and grazing livestock on the communal lands provided meat. The use of varying farming techniques including dry, floodwater and irrigation farming were very demanding, both in manpower and time, thus regimenting the villages' life. Even after 1900, most kitchen staples were locally produced—except coffee and sugar—because villagers either grew or bartered for their foodstuffs, seldom needing any money in their transactions. Subsistence was an enduring necessity in rural New Mexico. Consequently, employment was not prized outside of the two main urban centers in Albuquerque and Santa Fe.

The land grant system inherited from the Spanish colonial period was a key institution pertaining to land ownership in New Mexico. Land grant claims became a long-term issue in the state after the ratification of the Treaty of Guadalupe Hidalgo in 1848. As the United States conquered the region, the application of a radically different system of exploitation and surveying of the land had catastrophic consequences on the populations of pre-Anglo-American New Mexico. Some of these consequences contributed directly to New Mexico's readiness, on the eve of World War Two, to welcome new forms of employment. Indeed, by 1940, land-exhaustion—resulting from overpopulation, overgrazing, erosion and overexploitation of resources—became a serious problem.

According to author and editor John R. Van Ness, the loss of the communal land grant system was responsible for this situation (Briggs and Ness 193). Before annexation, the social organization of villages centered on a cooperative exploitation of land and water. This organization involved individual and communal land use for subsistence purposes. It combined private and common land grants, and it made fences—even to separate individual plots of land—useless. In addition, the organization maintained a common irrigation system, known as *acequias* (Spanish for ditches). At the core of this organization was a culture of *verguenza*: a sense of self-efficacy and honesty that restrained people from seeking to advance themselves at the expense of others (DeBuys 195). As the U.S. imposed its legal definition of property, many natives of New Mexico lost portions or the entirety of their land to speculators, manipulators and opportunists. The first fences made their appearance, enabling a few individuals to monopolize scarce sources of water and fertile pastures. As a result of property ownership changes and the subsequent exhaustion of soils, the competition among workers of the land became fiercer.

After the land grant system collapsed and property rights were lost to immigrants, corporations or the federal government (principally through the national forest system), money became necessary. In the 1900s, cash was mostly used to pay property taxes levied by the county governments and to purchase a few manufactured luxury goods from the East; however, since many families no longer owned enough land to sustain themselves, part-time wage labor outside the villages became essential. Some employment was available in the mining industries—silver, coal, zinc, copper, potash, oil—but the largest employer was the railroad. The tourist industry was also developing thanks to New Mexico's climate, which was renowned for being therapeutic in the treatment of life-threatening diseases such as tuberculosis. Promises of a cure attracted throngs of "health-seekers" to sanatoriums in Santa Fe and Albuquerque, and this too provided employment in tourist-related industries.

In spite of the availability of these jobs, many New Mexicans struggled to find work and often had to go far away to obtain ways of bolstering their meager farming incomes. Breadwinners left their families to find work as copper miners in Colorado, as sheepherders in Montana, or as seasonal farm laborers in Arizona ("Impact of Alamos").<sup>2</sup> Moreover, the

2 This comes from many interviews including Bernadette V. Cordova interviewed in Espanola by Peggy Coyne on February 29, 1996, Box 1 CD 33-4; Hipolita & Delfido Fernandez interviewed by Troy Fernandez (their grandson) in Chimayo on February 27, 1994, Box 1 CD 36-37; Lebeo Martinez interviewed

Great Depression and severe drought pushed the rural population even further into poverty. All of these factors call attention to the fact that, even while the land was still central to the continuity of the traditional New Mexican economies and cultures, the seeds for an economic revolution had been sown. This meant that, even before the arrival of the nuclear industry, employment was seen as an increasingly vital resource, and this notion of employment would become pivotal for the successful establishment of the new industry.

What further readied the population for the change was the arrival of federal aid programs during the Depression. In the 1930s, the Roosevelt Administration took steps to bolster the New Mexican economy through its New Deal policies. One of the most noticeable manifestations of the New Deal was the Civilian Conservation Corps, whose camps sprung up across the state between 1933 and 1942. These camps brought money and jobs to the state, and thus “big government” figured as a viable source of economic stability and employment. This also helped smooth the path for the expansion of the nuclear industry after 1943, as the industry was also seen as means for achieving work in the form of federal jobs.

The scientific revolution in New Mexico began on the Pajarito Plateau in the Jemez Mountains, where Detroit businessman Ashley Pond had built his dream school: the Los Alamos Ranch School. Pond's students were eastern boys sent by their wealthy families to toughen up through the outdoor activities built into the curriculum and the rough conditions of high-altitude life. Pond integrated elements of the local lifestyle into his vision for the school, such as reliance on farming to provide most of the food. The lands that the school used for these purposes would become the nucleus of the Los Alamos site. Roughly 54,000 acres of land was needed to build the secret laboratory; most of it came from the national forest and the rest, about 8,900 acres, were private lands belonging to the school, Anchor Ranch and local Hispanic homesteaders. On February 7, 1943, The Manhattan Engineering District took official possession of the existing facilities in what Secretary of War Henry L. Stimson termed “the interests of the United States in the prosecution of the War” (“History of the Los Alamos Ranch School”) and scientists started flooding in.

The exceptional circumstances of war deprived many families of their livelihoods provided by the land, which they had to give up to the government for derisory compensation (Yardley A5). Trust in the American government and a patriotic urge to participate in the war effort eased the condemnation process and alleviated some of the local farmers' difficulty in accepting their sacrifice. Ultimately, though, they had no choice. Yet with the loss of land came the gain of employment opportunities right next door. Families no longer had to separate for months while some left to find work in the neighboring states, or faraway California and Wyoming. Most interviewees of that first generation agree that the lab offered them a way back home ("Impact of Los Alamos").<sup>3</sup> However, this local source of employment began a dependent relationship between nearby villagers and the future LANL and, by extension, the federal government. The project (through the Zia Company, the lab's principal subcontractor) hired extensively. Construction workers, janitors, cooks, clerks and maids were hired from the Española Valley and also from the nearby Indian pueblos of San Ildefonso, Cochiti, and Santa Clara. Old-timers recall how army trucks would pick up blue-collar workers on the plazas of Pueblo and Hispanic villages in the early morning and take them back after a ten-hour workday. Secrecy required that labor be found in the vicinity so as to avoid bringing in outsiders and risk security leaks; consequently, local residents were the beneficiaries of a privileged and exclusive source of employment, a situation that would not repeat itself in peacetime.

The arrival of the scientist pioneers—"the Hill dwellers," as Los Alamos' scientist-settlers residents were typically called—instigated an unusual contact between two antipodal cultures: on the one hand, Spanish-speaking and Indian rural workers and, on the other, highly educated Anglo-American and European scientists from the world's greatest universities. Interestingly, many Los Alamos scientist-settlers drew parallels between their experience in northern New Mexico and tales of life on the frontier. Scientist's wife Ruth Marshak wrote, "I felt akin to the pioneer women accompanying their husbands across the uncharted plains westward, alert to danger, resigned to the fact that they journeyed, for weal or for woe, into the Unknown" (Mar-

3 This statement is derived from several interviews including Jose Benito Montoya, interviewed in Pojoaque by Steve Fox on August 8, 1994, Box 1 CD 9-10; Delfido Fernandez interviewed by Troy Fernandez in Chimayo on February 27, 1994, Box 1 CD 36-37; and Senni A. Gallegos, interviewed by Carlos Vasquez on March 3, 1991 at LANL, Box 1, CD 45-46.



shak 2). The encounter between scientists and autochthonous indigenous inhabitants aroused a mutual curiosity that was favorable to exchanges.

However, differences in status also fueled stereotypical representations. Scientists were invited to ceremonies, dances and fiestas; they purchased pottery, rugs and jewelry, thus participating in the amplification of the tourist trade. The local cultures mostly provided entertainment and exoticism to the unaccustomedly isolated Anglos. In "Going Native", Charlie Masters recalls a theater scene at the British Mission party in which Otto Frisch played the part of an Indian maid wrapped in a rug. He portrayed the maid as an indolent slow-working employee who cleaned dishes with the window curtains and drank alcohol as her reward (Masters 122). This is an example of the simplistic images that some Los Alamos dwellers fostered of their Indian help, giving a glimpse of the basis on which work relations were to evolve with the arrival of generations of Ph.D.s and technicians.

Meanwhile, the massive hiring also affected the cultural balance within the ancestral Pueblos, especially in terms of gender relations. The mass employment of maids disrupted the traditional family roles as the women began to earn more than men and could no longer carry out their traditionally assigned tasks. Today, Pueblo members still express their regret that the lure of lab employment depleted their communities of needed leaders and active participants in the communal works.

Already by 1944, Manhattan Project officials targeted other places in New Mexico to carry on their atomic enterprise. More remote, extensive and emptier tracts of lands were needed to test "the Gadget", the nickname given to the plutonium bomb. One of the greatest examples of this was the appropriation of the Trinity site on the Alamogordo bombing range in the *Jornada del Muerto* desert. Again, the government seized land from local ranchers, most of whom had settled in the region between the 1880s and the 1940s. These recent immigrants sold off their cattle and moved out of their houses for the duration, and their properties were never returned to them. The area is now the White Sands Missile Range. In March 1945, Project Alberta was initiated to assure the bomb was a practical airborne military weapon; Alberta drew the attention of Los Alamos leaders to the necessity of finding more locations. In late July 1945, the Z Division was created and moved to the military-owned Oxnard Field in Albuquerque, near Kirtland Air Base; today this locale is the site of Sandia National Laboratories (SNL), which is the second largest employer in the state after schools (Alexander 3). The Manhattan Project's various offspring are scattered across

New Mexico. These include the three test sites: Trinity (1945), Gnome (1961), and Gasbuggy (1967). They also include three Air Force bases built during World War Two. There are nuclear reactors, nuclear weapon storage sites, and waste disposal sites at the laboratories and at the Waste Isolation Pilot Plan (1979-1999). In addition, the state also hosts other military reservations and research facilities.

This propagation of science-related installations fuelled a huge economic boom resulting in more employment, higher incomes and massive demographic growth. For example, Albuquerque's 1940 population of about 70,000 grew to over 200,000 by 1960 (Karafantis 118). In turn, jobs, money and people fuelled the creation and prosperity of other businesses and institutions of higher education that also serviced the nuclear economy. The uranium industry in the Grants region can be added to the list. In 1950, a Navajo Indian named Paddy Martinez found a piece of limestone containing the mineral on the lands of the Santa Fe Railroad. After this discovery, Grants became the uranium capital of the world and a magnet for prospectors and mining companies who naturally employed locals—mostly Navajo Indians—to mine the radioactive ore and turn it into yellowcake. The arrival of uranium mining figured the nuclear economy as a cradle-to-grave industry, which dealt with nuclear raw materials, nuclear storage and nuclear waste.

However, the successes of the boom entailed something of a Faustian bargain. The mining industry alone had tragic consequences for the miners' health and for the environment. In fact, in themselves, these consequences reveal some of fundamental repercussions of nuclear employment in New Mexico: how what seemed at first like a godsend in the form of work close to home and higher wages came to shroud, in fact, a dark and harmful future for New Mexicans.

Perhaps this is best seen when we consider the issue of poverty. Poverty in New Mexico had been a concern since statehood, and the state has consistently been among the nation's five poorest. In 1976, New Mexico ranked forty-ninth in per-capita income (Stergioulas 16-17). In 2008, even though statistics indicated an incredible rise in wealth and living standards, New Mexico still ranked fifth in the number of persons below the poverty level ("The 2012 Statistical Abstract"). So who were the true beneficiaries of the scientific revolution?

On August 6, 1945, the secret city of Los Alamos was put under the spotlight when President Truman announced the bombing of Hiroshima. The

following year was crucial in the history of the laboratories, as there was no assurance of their continuance. The exodus of wartime-scientists from Los Alamos amplified this impression. But the metamorphosis continued, and this continuance was precipitated in part by how local politicians capitalized on the Cold War. An increased concern about the Soviet nuclear capability prompted the federal government to invest in the nuclear industry, and this was an investment politicians hoped—and still hope—to capitalize on in terms of nuclear employment. From the late 1940s until today, many New Mexican politicians have supported the industry, even in the face controversy. One recent example is congressman Dennis Chavez, who used all his influence to attract federal investments to the state. Another example is Waste Isolation Pilot Plan, which opened in 1999. Here again, local boosters of the industry in Carlsbad worked to promote the opening of the Pilot Plan, which they hoped would provide an eight hundred—job project close for their community.

The developments at Carlsbad are not isolated. With each new scientific conquest, new branches of the industry sprung up, and with each new facility, newcomers immigrated en masse to Los Alamos, Albuquerque, Alamogordo, Grants, and Carlsbad. Attracted by the lucrative and prestigious positions offered by research centers and military installations, out-of-state Ph.D.-holders colonized entire neighborhoods such as the “heights” in Albuquerque. This torrent of immigrants—a logical outcome of the new economic situation—drastically underscored existing inequalities between ethnic groups and created new divisions as well. In 1986, almost 70% of the population of Los Alamos County was from out of state, compared to 0.66% in the close county of San Miguel; likewise, 3.5% of the Los Alamos population was under the poverty level, compared to nearly 27% in San Miguel, with a median family income three times inferior (Dietz 50). According to the 1988 State Policy Data Book, New Mexico ranked second in doctoral scientists/engineers per 10,000 in the nation, but twenty-ninth in the number of high school graduates, and thirty-eighth in average annual income (Dietz 41). These figures suggest that the benefits of the nuclear industry were not distributed equally and that Los Alamos stood out as an island of privilege disconnected from the work-related anxieties of the surrounding communities.

The reliance on wage work after the war built up harsh competition among jobseekers; in most cases, New Mexican workers and graduates of local tertiary institutions were unable to compete with outsiders. The

University of New Mexico's *Impact Los Alamos* Oral History Projects document several examples where young Anglos just out of school became employed as laboratory staff members on the spot, while Valley workers had to wait for years for those jobs. Such a constellation did not mean that only Anglos could get jobs. Rather, as these interviews suggest, a glass ceiling came to exist, which prevented local non-Anglo residents from easily obtaining high-level positions. Such instances of preferential treatment reveal forms of ethnic, geographical and educational discrimination, and these forms have been witnessed by multiple generations of nuclear industry workers ("Impact of Los Alamos").<sup>4</sup> The information gathered for this article relates statements gathered from workers between the 1950 and the 1990s, but there is little to suggest that these forms of distinction have ceased in the 21st century.

The fact that workers in the region around the laboratories were employed at the labs and in other high-technology industries began to generate jealousies and rivalries in the poorer parts of the state. An additional factor for this tendency was the envy aroused by the adjacency to a culture of material abundance. These sentiments caused a change in the state's demographics, and they undermined the role of agriculture in the economy. In this context of rapid industrialization and modernization of their environment, agricultural workers started to desert the rough and demanding labor on farms for easier and more reliable work in the cities. Thus, agricultural activities that had been the pillars of the economy before the Second World War declined, and this precipitated a demographic shift from a rural agrarian culture to an urban one:

For the first time in 1950, half of all New Mexicans lived in cities [...]. Four thousand farms went out of production in the decade, and only nine of New Mexico's thirty-two counties benefited from the job growth and population increases. In the sixteen declining counties, federal spending was modest to nonexistent, and welfare and social security payments grew significantly as a result: 240 percent and 2,600 percent, respectively (Welsh 74).

4 Such examples are provided in the following interviews (among others): Genaro Martinez, interviewed in Chimayo by Peter Malgren on November 16, 1995, Box 1, CD 60-61; Ruben Montoya interviewed by Carlos Vasquez in Santa Fe on August 9, 1994, Box 1, CD 11-13, Francisco Leroy Pacheco interviewed by Carlos Vasquez in Albuquerque on December 3, 1993, Box 1 CD 20-24; Jim Trout interviewed by Linda Campell on April 17, 1995, Box 1 CD 34-35; and Paul Fresquez interviewed by Kenneth Salazar on March 6, 1995, Box 1 CD 38-41.

Interviews with former lab workers from the Española Valley show that opinions differ greatly between those who have known the hardships of agricultural life and were glad to leave the backbreaking days behind, and those who advocate a return to the roots. But more recent contributions to the general memory of New Mexico's nuclear history underscore the bitterness in that same dilemma. The New Mexican journalist, writer, and activist Juan Estevan Arellano, who is a native of northern New Mexico, wrote of the situation around Los Alamos and put the predicament in this compelling way: "*El que pierde su tierra pierde su memoria* (he that loses his land loses his memory), and no amount of money or technological advances will help [the Hispanic population of northern New Mexico] recover that loss. For some, Los Alamos has been seen as the Promised Land. For others, it has become an enigma, a virus destroying all the data on the hard disk with no way of retrieving it or saving it" (Arellano 32).

During the Cold War, for those who managed to get jobs at one of the nuclear facilities, it meant entering a new culture and a new philosophy of nuclearism. Some workers found working in the nuclear industry morally challenging because they considered the escalation of nuclear arsenals inherently wrong, or they became concerned about the environmental impact once the dangers of radioactivity were revealed. Others fully embraced nuclearism and felt pride in their contribution to American military and technological supremacy. This was often expressed in the recurring opinion regarding the development of weapons of mass destruction: "better us than someone else." However, a majority of low-skilled employees at the labs did not have access to information about the dangers of nuclear technology, and, even if they did, the threat of unemployment often took on such proportions that many of these workers resorted to willful ignorance, turning a blind eye to the environmental and health risks of their jobs.

In the 1970s and 1980s, when the nuclear-warfare anxiety of the Cold War transformed into environmental and health concerns (especially after the Three Mile Island accident), new controversies broke out in New Mexico. No longer protected by automatic government classification of their work, government owned and private contractor weapons' labs began to come under attack from local activists, who accused them of having dumped chemicals and radioactive fluids in canyons and burying waste on the plateau. For example, Acid Canyon was used as an original long-term dumping area for liquid waste. In 1967, this dump site required an extensive clean-up, which took two years to remove about 600 dump truck

loads of dirt and debris. In 1980, environmental reporter Phil Niklaus and writer Dede Feldman published a series of articles on the environmental impact of Los Alamos Scientific Laboratory with Southwest Research and Information Center, a leading proponent of the rise of anti-nuclear activism in Santa Fe. They noted “Solid waste materials, ranging in size from test tubes and rubber gloves to massive ‘glove-boxes’ and other laboratory equipment rendered useless by radioactive contamination, continue to be placed in huge trenches and shafts cut in the volcanic tuff at Los Alamos” (Niklaus and Feldman 11). As anthropologist Joseph Masco relates, this willingness to provide the public with information on the effects of the nuclear industry introduced a new era of controversies and debate over the future of New Mexico’s “plutonium economy” (Masco 99). Another example of such controversies returns us to the Waste Isolation Pilot Plan at Carlsbad, for while the plan was hailed by its enthusiastic promoters for the jobs it provided, it also divided the community during a twenty-year-long conflict played out between anti-nuclear activists, concerned citizens and the plan’s promoters.

In addition to the concerns about the pollution of the land, health and safety issues for workers have also become central concerns. This is especially the case for those workers who have been involved in nuclear clean-ups. Another major concern involves general working conditions. At the end of the 1990s, the first lawsuits for racial discrimination were filed against the LANL. While these lawsuits originated in a call for compensation for lands ceded to the federal government, they had the additional effect of revealing the poor working conditions. The Pajarito Plateau Homesteaders, who filed their lawsuit in 1997, claimed their right to fair compensation for the lands they or their families had ceded to the government at Los Alamos. Other testimonies surfaced during these legal developments, revealing some of the immediate harmful sides of the project. According to the class action lawsuit reported in the *Albuquerque Journal North* in 2001, Hispanics removed from their land were “subjected to slave-like labor conditions, detention under armed guards and involuntary medical experimentation.” Sylvia Gomez, an heir of one of the homesteaders, Jose Gomez, claimed he was required to clean areas around the project believed to be contaminated by radiation for a \$2 per day salary. He was regularly examined by doctors, and was forced to drink an unidentified substance every day before leaving work (Propp 1-2). Workers were offered more money if they accepted more hazardous tasks and very few turned these offers down.

The devil's bargain that employees of the nuclear economy entered into is best seen in the story of Paul Montoya, who was seven when U.S. marshals asked his family to pack their things and leave their ranch on the Pajarito Plateau. Montoya's testimony was published in a newspaper article in 2003: "It was a blessing to get out of the work – no more hauling, no more chasing cattle [...] We thought of it as a blessing until we realized there was no more going back." Montoya and his brother later got jobs at LANL. He considered the fact that he had a good job, and that compensated for things, but losing the land "always lived in his mind." But this would not be the only thing Montoya would have to live with: his new work hid another cost. When Montoya retired after thirty-one years as a fabrication technician handling nuclear materials, he was diagnosed with beryllium sensitivity, a condition associated with his work that had weakened his immune system (Rankin).

Clearly, the way in which the nuclear industry developed and integrated New Mexico's employment-eager populations generated the acceleration of economic disparities, new forms of racial and gender discrimination, and environmental degradation. Improvements in material gains and modernization of households became evident: people acquired their first televisions, their first cars and their kitchen appliances. Yet many never caught up with the national standards of income. Earlier seclusion obscured the fact that New Mexicans lagged behind other parts of the country in the race towards economic prosperity.

The politics of nuclear employment emphasize how the exceptional circumstances of war were indispensable for the federally sponsored development of New Mexico's nuclear economy. The federal funds that financed the nuclear engine were determined by the government's needs, and those needs were contingent on the circumstances created by the Second World War and the Cold War. The influx of money and the number of contracts fluctuated according to incidents and crises in global politics. Like the atomic bomb itself, these needs have lit up isolated New Mexico, and the state has actively sought to remain in the light of science ever since by pursuing investment, promoting its resources, and letting go of fragments of its identity and cultural heritage. However, this situation had also produced a climate of latent fear in New Mexico: fear of losing jobs, fear of health issues, fear of nuclear catastrophes, and fear of military or terrorist attacks. In the twenty-first century, New Mexico's dependence on federal monies is even more pronounced given the necessity to reconvert weaponry work

to peaceful applications of nuclear energy, and because of the successive waves of lay-offs at the National Laboratories. In October 2013, the two-week governmental shutdown exposed this fact glaringly when LANL and SNL were on the verge of closing their doors.

Historian Maria E. Montoya sees a form of continuity with New Mexico's colonial history in this dependence on federal funding: "During the nineteenth century, New Mexico maintained a colonial relationship with the rest of the United States because of its dependence on eastern and foreign investment. Still, New Mexico in many ways remained in that same colonial stance throughout the late twentieth century" (Montoya 342). From the reliance on land inherited from their forbearers, New Mexicans switched to a dependence on the American government. The ongoing process of colonization of the U.S. West has involved the quasi-eradication of sustainable ways of life and the spread of a cash economy—in this case, also a nuclear economy—in order to develop people's need for employment and consumption. The Anglo-American culture of work that was imported during New Mexico's Americanization can then be defined as an instrument of colonization.

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