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“Rationalizing the Home Front: The Cold War, The Nevada Test Site, and Radiation Exposure”

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Abstract

Beginning in 1953, radiation exposure and its effects became a hotly contested issue between the government, members of communities surrounding the Nevada Test Site (NTS), and researchers within the national scientific community. The Atomic Energy Commission (AEC), concerned about maintaining a continental testing facility and aware that atomic testing would impact communities surrounding the NTS, sent representatives to areas potentially affected by fallout to instruct and reassure the affected public. How government officials perceived neighboring communities and how these communities perceived these representatives of the government often determined public responses to the atomic testing program. The story of radiation monitors and the communities they served is indicative of the ways in which Americans viewed the concepts of safety and risk during the Cold War.

1. Introduction

On May 19, 1953 the Atomic Energy Commission’s atomic test designated Harry detonated before dawn on the Nevada Proving Ground, producing a cloud of radioactive material which began to disburse over the region’s major highways and small towns east of the test site’s boundary. Several hundred vehicles were stopped on highways 91 and 93 and motorists were warned to roll up their windows and keep their air intakes sealed. Men in white coats with Geiger counters told the public that there was “no danger” but to stay inside their vehicle until they were out of the path of the radioactive cloud. Many of these vehicles were sent for decontamination in St. George or Las Vegas to free car washes funded by the AEC. In addition, the agency’s meteorologists had noted just after dawn that the radioactive cloud was headed into some thunderheads over St. George and issued a warning to residents to stay indoors from nine in the morning until noon to avoid any potential fallout. An AEC spokesperson issued a statement to the media in which he insisted that despite these precautionary measures, “radiation had not reached a hazardous level” in any of these areas. [1]

In the days and months that followed “Dirty Harry,” as the test was later named [Figure 1], it became increasingly apparent to the small population that surrounded the test site that there was more to the impact of radioactive fallout than previously considered. Vehicles were washed and so were clothes, but the hundreds of cattle and horses that were blinded or suffered strange burns and the thousands of sheep that died drew national attention to the idea of radiation exposure and damage through fallout. Coupled with the deaths of over a dozen children, who lived in communities surrounding the test site of leukemia between 1956 and 1961, and the strange burns and other injuries adults in the same area suffered, in hindsight to many community members these damages occurring at the same time as atmospheric testing seemed suspiciously connected.

2. Delineating Safety during the Cold War

From 1951 to 1992, the AEC, and its later incarnation the Department of Energy (DOE), conducted this country’s atomic testing program. Situated in southern Nevada, approximately seventy miles north of Las Vegas, what became known as the Nevada Test Site hosted roughly half of all of the nation’s atmospheric tests and nearly all of its underground tests. This stark and
beautiful landscape essentially functioned as a scientific proving ground and an outdoor laboratory, yet unlike indoor testing facilities, the effects of atomic tests were not confined to the boundaries of the test site. Communities surrounding the NTS, though told testing was “safe,” were negatively affected by the products of the testing program, especially atmospheric disbursement of radioactive fallout. [2]

The AEC, concerned about maintaining a continental testing facility and aware that atomic testing would impact communities such as St. George in Utah and Caliente, Hiko, and Ely in Nevada, sent representatives to areas potentially affected by fallout to educate and inform the public. These radiation monitors were the public liaisons between the atomic testing program and the offsite communities. What they said in their official capacity as testing representatives with reference to the issue of “safety” was often interpreted by offsite communities to mean “no impact,” although what the term as used by these officials indicated was “no permanent damage.” The two impacts this miscommunication had on community members’ perception of atomic testing and the government were: (1) how different individuals in the offsite communities around the NTS understood the term “safety” often determined their responses to fallout exposure and to the expert officials sent to disseminate safety information and (2) the informal relationship built between some monitors and the offsite communities they served had great bearing on the AEC’s success in eventually communicating the “safety” of atomic testing.

In the early years of continental testing, 1951-1970, the AEC contracted with the Army and then the Public Health Service (PHS) to monitor offsite radiation—that which occurred beyond the boundaries of the Nellis Gunnery and Bombing Range—and inform the small rural communities surrounding the NTS of the proper precautions needed to avoid protracted and dangerous exposure to radioactive fallout. Although not mandated by the federal government, this early offsite monitoring program was part of the AEC’s efforts to ensure the safety of the public and secure the relatively new and somewhat controversial continental testing site in Nevada. Any community within a two hundred mile radius might be in the path of significant radioactive fallout, but the AEC’s investigative committee which set up the NTS had determined that the “size of the risk” of a continental test site was that a small population would receive some exposure. According to the prevailing scientific theory on radiation exposure, a zero level was not necessary to prevent harm to health. As long as the exposure was less than the theoretically determined safe level, there would be no permanent harm done. [3]

The collective goal of the AEC and PHS was to assure the “greatest health benefit of atomic energy and its by-products to the general public and at the same time the greatest protection to the public health.” Radiation monitoring was not only a priority for the nation’s safety, but a necessary tool in ensuring that Americans cooperate with the establishment and maintenance of a continental test site. Unfortunately, conditions in American society in the early 1950s were especially prohibitive to disclosing sensitive information to the public: the Soviet Union’s detonation of a hydrogen bomb in 1949, the trial and execution of Ethel and Julius Rosenberg for treason in 1951, and the general paranoia produced by the McCarthy hearings and the Korean War inhibited the necessary flow of information from scientific experts to the communities surrounding the test site. Rather than educate and inform the public about what was known of the hazards of fallout, radiation monitors sent into offsite communities were more often military personnel who instead instructed and reassured the public. After taking Geiger counter readings, they merely told people there was no danger and advised them on decontamination procedures. [4]

3. Differing Interpretations of Safety

When the AEC made its fourteenth annual report to Congress in 1953 about the year’s events, there was no general indication that the fallout had done any harm. What did not appear in the government’s report were accounts of thousands of sheep deaths in southwestern Utah. About five thousand sheep grazing on the Nevada-Utah border directly east of the test site suffered burns, blindness, and death—a 30% loss of lambs and a 20% loss of mature sheep—during the same period as the 1953 test series. The AEC had been asked to look into the sheep deaths, but their investigation culminated in a report in August of 1953 without making any correlation between fallout exposure and sheep injury. The two investigating veterinarians, Navy Major Robert Veenstra of the US Naval Radiological Defense Laboratory and the AEC’s investigator on the Trinity test from Los Alamos, Dr. Robert Tompsett, determined that there was no direct evidence that radiation precipitated the sheep losses. The causes of the reported burns and the sheep deaths were determined to be coincidental with the test series and the sheep were said to suffer from malnutrition as their grazing areas were particularly lean in the drought of that year. However, buried within the report was the opinion of the veterinarians Veenstra and Thompsett that there was a “surprisingly high concentration of radioactive elements which had become fixed in the thyroid tissue and bones” of the dead sheep. [5]

The impact the sheep deaths had on the AEC’s public relations with the communities surrounding the test site was profound. Although radiation monitors had been sent to towns such as St. George, Ely, Caliente, and Hiko, very
little thought had been given to reaching ranchers who lived and ran their livestock in the vast spaces in between. The AEC treated the sheep men during the investigation as uneducated non-experts which deeply undercut the trust this small group of people had with their government. The report depicted the sheep men as “mostly uneducated and untrained … not capable of detecting trouble until the actual deaths of the animals,” and that as a result, no “professional” treatment had been given to the affected animals before their deaths prohibiting an exhaustive investigation. [6]

Ranchers from Tonopah to Ely to St. George found it difficult to believe that the sheep died from malnutrition. They found it completely incongruent for the AEC to tell them the testing was safe and there was no reason for fallout when five thousand sheep carcasses exhibited symptoms none of them had ever seen before: mouths that bled and then scarred white, wool that pulled out and left bald patches, burns that never healed, eyes that went blind, and babies born with pot bellies and stubby legs. Their conversations with the investigative veterinarians left them with the impression that their sheep had indeed been exposed to significant amounts of radiation and that their hunch had been correct. In light of the 1954 Castle series held in the Pacific in which a Japanese fishing boat, the Fortunate Dragon [Fukuru Maru], was heavily irradiated causing the deaths of crew members which made national news, it became even more plausible that their sheep had died from radiation exposure. The ranchers hired Dan Bushnell, a local attorney in St. George, to take the case to court, but no resolution was reached for decades, despite the efforts of former Secretary of the Interior Stewart Udall. The AEC’s response throughout the rest of the 1950s was that other official reports refuted and therefore invalidated the initial findings of the two veterinarians. [7]

For the ranchers nearest the test site, the Uhaldes at Adaven, the Sharps at Blue Eagle, the Fallinis at Twin Springs, and others, the AEC’s standard reassurances of safety became harder and harder to believe. Although reporter Gladwin Hill from the New York Times interviewed several community members in 1957 who were relatively unconcerned about the atomic testing program and thought much of the “scare talk” was just people wanting public attention, most in offsite communities nevertheless had “accepted them without fuss and without alarm.” It reassured them that “To our knowledge no one outside the test site has been hurt in six years of testing.” Offsite residents were told that a panel of experts in “biology and medicine, blast, fallout, and meteorology,” determined when testing took place. [10]

The guide provided simplified technical and scientific explanations of the products of atomic explosions as if the process was fully understood and containable. It did not, however, exclude the possibility of harm, just the probability. “Simply stated,” the booklet read, “findings have confirmed that Nevada test fallout has not caused illness or injured the health of anyone living near the test site but … Because fallout consists of small particles, it cannot be guaranteed that a small beta burn would never occur to a person living near the test site.” The work also reassured communities that “Test officials would not approve a shot if they knew that resulting fallout on any community would be heavy.” Communities were told that “If you are in an area exposed to fallout, you will be so advised by … radiation monitors who will explain just what is happening.” Gracian Uhalde remembers the little sector, and local highway employee Bert Wilson had suffered since 1955 from burns that would not heal. [8] These incidents with families, and especially children, as well as the damage to cattle, sheep, horses, and dogs from burns, cancer and blindness made ranchers want the testing stopped. Many wondered why tests were postponed if the fallout cloud might head south over Las Vegas, but not over them. Helen Fallini, who suffered from eye trouble she attributed to radiation exposure, wondered “Why is fallout harmful if it goes over Las Vegas and not harmful if it comes over here?” Her father-in-law Eugene speculated that “If fallout isn’t harmful … let it go wherever it wants to go.” Damage to the animals and the community made it difficult for people living in the areas surrounding the test site to “believe the assurances of the AEC that tests do not pose a threat to their health.” But the AEC continued its program of reassuring and instructing instead of educating and informing the public. [9]

4. Different Meanings of Expertise

One of the most prolific forms of reassurance was the official guide monitors disseminated to offsite communities to inform them about safety measures. Many ranchers found it extremely patronizing. [Figure 2] The document singled out offsite communities by saying “You people who live near the Nevada Test Site are in a very real sense active participants in the Nation’s atomic test program.” The booklet congratulated them that although some had “been inconvenienced by our [AEC] test operations,” offsite communities nevertheless had “accepted them without fuss and without alarm.” It reassured them that “To our knowledge no one outside the test site has been hurt in six years of testing.” Offsite residents were told that a panel of experts in “biology and medicine, blast, fallout, and meteorology,” determined when testing took place. [10]

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black book the AEC handed out to inform the public—to him it was nothing more than a little cartoon book.

Figure 2. Drawings from Atomic Tests in Nevada.

Early radiation monitors were not able to communicate their reassurances effectively and ranchers had a difficult time accepting this information and cooperating with monitors’ requests. Not only did it seem that their version of events and definition of safety differed greatly from the AEC’s, but their perception of expertise did as well. Lina Sharp, relative of Minnie, thought the early field men were snotty, young kids that looked down on ranchers who worked in near isolation in the Great Basin. She said “We didn’t want to cooperate with them because we didn’t like their attitudes and we weren’t going to do anything with them.” Rather than viewing the radiation monitors as experts, Lina thought that the ranchers were “as good or better than they were … they were just young kids who were not very smart, intelligent, or anything.” Until the death of her nephew, the AEC had not placed any monitoring equipment anywhere near Helen Fallini’s ranch or any of the others. Because “they kept saying it wasn’t hurting us.” It was “just the fact,” she said, “that when we started squawking about letting so much of that fallout come up over us this way.”

But some monitors were better than others in the eyes of the offsite communities; Public Health Service monitor Don James is remembered well. It seemed everybody particularly liked Don James because, as he describes, he did not have all the answers and said so. Don seemed like a real human being to the ranchers, always happy-go-lucky. Gracian Uhalde said he was “just there to basically have a good time and do whatever he could do.” Don had grown up in Erie, Colorado on a farm and worked at Rocky Flats producing detonators until 1961 when he moved to Las Vegas to work as a monitor at the test site. He developed relationships with the Fallinis, Sharps, Uhaldes, and many other ranching families north of the test site. Don said that “you can’t fool those people [ranchers], they’re pretty smart you know.” “We’d tell them everything,” he said, “we never held back on anything. You know of course, the DOE [said] you don’t say this, you don’t say that, or anything. When we were asked, we’d tell them … that’s what they liked … they didn’t appreciate people, the Army, because they wouldn’t say anything, and then when they did answer the people, they’d lie to them, and that just doesn’t work.”

5. Conclusion

For the ranching communities outside the test site, the most important message they heard from the AEC was that atomic testing was safe. They understood the concept to mean that there would be no visible impact or damage. Burns on livestock and especially on people and children dying of leukemia did not speak to the safety of atomic testing and radioactive fallout. Scientists on the other hand understood safety to mean that there would be no significant or permanent damage. Testing officials knew there would be effects of atomic testing in Nevada, especially in offsite communities. Although they did not blatantly deceive people about the effects, they certainly minimized their impact to the extent that when offsite communities were finally given the necessary information about he risks of atomic testing, community members felt they were lied to by the very government that was trying to protect them.

Historian Barton Hacker writes that the AEC’s decision to reassure this population that there was no danger and that atomic testing was safe, as opposed to informing them of the effects of radiation exposure, only served to make offsite communities suspicious and unhappy. “Assuming the public could not grasp” the differences between “minor versus major risk, the AEC preferred to claim no risk at all.” Yet it would be a mistake to think that the AEC simply did not care about the impact of fallout on offsite communities. Richard Miller explains that the agency was consistently torn between guarding and divulging information to the public that could either harm or support their mission. According to Paul Boyer, despite “a disinformation campaign by federal officials pooh-poohing the health hazards of radioactivity,” concerned scientists and the public at large “became deeply alarmed.” Geneticists, he writes, claimed that “the concept of a safe rate of radiation simply does not make sense,” that “there is no such thing as a safe dose of radiation to the population.” But Dr. Shields Warren of the AEC summed up the situation, writing that from the AEC’s perspective, genetic risk from radioactive fallout was “so slight in relation to other risks as to be disregarded.”

Some of those other risks included the perception of damage by the public, whether actual or not, the threat of closure of the Nevada Test Site, and America’s loss in the arms race. It was easier for the AEC to not to explain the
intricacies of radiation exposure when the subject was heavily contested within the scientific community and could ultimately lead to losing the Cold War. By the end of atmospheric testing, public opinion surrounding the test site was persistently negative. And yet, the informal relationships radiation monitors like Don James developed with the Uhaldes, Fallinis, Sharps and other ranching families served to reestablish a basis of trust previously lost between the government and the offsite communities. Through these informal relationships, information and mutual respect were exchanged and very few of the communities surrounding the test site, in the end, did not support their government.

6. Acknowledgements

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7. References


