

# **“You Have Nothing to Worry About”**

Misinformation, Radioactivity, and the Nevada Test Site

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In the late 1950s, between her sophomore and junior years of college, my grandmother, Cheryl Purdue, had a summer job. She worked as a clerk typist who served as an assistant to the secretary of a company bigwig named Oakey Spears. Her boyfriend, and my eventual grandfather, Jim Rogers, worked nearby as a mechanic, fixing cars in a radio shop. Her summer weeks had a simple rhythm: in the office six days a week, and then, in the evenings, when the blistering Nevada sun had set and the desert had settled into its perfect summer quietude, she and my grandfather would split a twenty-five-cent milkshake and see whatever was showing at the movie theater. Fastened to my grandmother's lapel were two pins: one to declare that she was officially "going" with my grandfather, and the other a film badge to measure the level of radiation she had received that day.

My grandmother, grandfather, great-uncle, and great-grandfather all worked at the Nevada Atomic Test Site throughout the 1950s. I am a fourth generation Nevadan, and because of this the Test Site is literally and culturally embedded within my family's lifeblood. For many Nevada families, including my own, the Site served not only as a source of income but also as a way of life, with hundreds flocking to its campus in order to serve their country and partake in the perfection of the most terrifying and useful weapon in human history. However, the Test Site—while a source of pride for the city of Las Vegas, the state of Nevada, and the United States—had a hidden insidiousness: the radioactive fallout from Nevada's nuclear tests destroyed lives and families, mainly because the government peddled misinformation regarding the danger of radioactivity and declared that complacency or participation in the tests was a form of patriotism necessary to defeating the Soviet Union. In this paper, I will discuss the role of the Test

Site as a cultural and military institution, interweaving the stories of my own family's experience as well as those of people who worked on the site during its heyday. I will then discuss the misinformation from the government to those living in the Southwestern United States regarding the terrifying realities of nuclear radioactivity, and the destruction that this misinformation helped perpetuate. Finally, I will discuss the way national security is so often a scapegoat for governmental negligence.

The United States' deployment of atomic bombs in Japan in August of 1945 accomplished two goals: it put to end a long, expensive, and destructive war, and unveiled to the world, in the words of *U.S News and World Report* founder David Lawrence, "a weapon that reduces war to an absurdity."<sup>1</sup> The United States had an indisputable advantage in being the first nation in human history to develop and detonate such a weapon, but following its initial implementation, atomic scientists and foreign policymakers knew it was imperative that the United States not bask in the glory of being first for long.

The United States took a proactive approach in maintaining a postwar atomic monopoly. On August 1, 1946, almost a year to the day after Hiroshima, President Truman signed the Atomic Energy Act, which formally established the United States Atomic Energy Commission, or the AEC.<sup>2</sup> While the original goal of the AEC was to further develop atomic power under peacetime conditions, it became clear that another, more complex war was emerging from World War II's ashes, and the AEC would need to adapt its mission accordingly.<sup>3</sup> Other nations began to develop atomic power almost immediately after the bomb's unveiling in Hiroshima, and the United States needed to be as prepared as it was innovative. Historians James and Julie Rice summarize that the

Atomic Energy Commission, “epitomized the interweaving of ‘big science, big weapons, and the U.S. State.’”<sup>4</sup> The AEC was unique in how much freedom it had outside of government oversight, and it circumvented conventional bureaucratic policy: in the name of time-efficiency and confidentiality, Commission employees were not required to take a civil service exam, and were able to sidestep U.S. patent law when developing new technologies.<sup>5</sup> The ill-defined concept of national security, and Americans’ pursuit of it, became the sole arbiter of the AEC’s modus operandi.

As the Cold War escalated in the 1950’s, a continental atomic test site became increasingly inevitable. In October of 1950, AEC Chairman Gordon Dean convinced President Truman that an accessible, continental test site was paramount to America’s success in the nuclear arms race against the Soviet Union.<sup>6</sup> Truman tasked the National Security Council with finding a suitable geographic area, and the search for Atomic Eden began.<sup>7</sup> Dean led the hunt in a Special Committee consisting of the AEC, Department of State, and Department of Defense. The Committee narrowed its decision to Las Vegas, Nevada; Dugway, Utah; White Sands, New Mexico; and Camp Lejeune, North Carolina, but favored Southwestern sites because they were afraid of radioactive fallout entering the Atlantic Ocean.<sup>8</sup>

In their decision-making, administrators understood that radioactivity was a necessary consequence of nuclear testing, and that they should locate the test site in an area where radioactivity would pose the least obvious threat to public safety. On December 18, 1950, the Commission presented the result of its “serious examination” to President Truman: the government-owned Nevada Bombing and Gunnery Range located 65 miles outside of Las Vegas was the “most desirable” option.<sup>9</sup> In its Memorandum to

the President, the AEC cited Nevada's many "advantages," including but not limited to its proximity to the Los Alamos Scientific Library, its predictable weather patterns, low population density, existing infrastructure, and the fact that the land in question was already government-owned.<sup>10</sup> The President accepted the AEC's recommendation, and the Nevada Test Site officially began operations on January 11, 1951.<sup>11</sup>

While the Commission deemed Las Vegas the most suitable location for atomic testing, AEC directors quickly realized that no matter what its location, the Test Site would face a serious public relations problem regarding its safety. During the selection process, James McCormick, the Director of the Military Application Division, stated, "Not only must high safety factors be established in fact, but the acceptance of these factors by the general public must be insured by judicious handling of the public information program."<sup>12</sup> The site's safety would mean nothing unless nearby residents truly believed it was safe. In the Department of Energy's official history of the Site, *Origins of the Nevada Test Site*, Terrence Fehner described the site's public relations agenda: "The American people needed to be convinced," he wrote, "that 1) nuclear weapons testing was a routine activity and nothing out of the ordinary, and 2) radiological safety was under control and nothing to worry about."<sup>13</sup> Thus, the AEC was tasked with normalizing Nevada Test Site in a post-atomic society.

On the day of the site's official opening, Ralph P. Johnson, the Project Manager of the Site, released a warning handbill to Nevada residents. The handbill assured, "Health and Safety authorities have determined that no danger from or as a result of AEC test activities may be expected outside the limits of the Las Vegas Bombing and Gunnery Range."<sup>14</sup> The announcement, which failed to specify how far outside the limits one

could expect activity, contained careful wording, and hinged its success on two different perceptions regarding the meaning of the word “danger:” that of the government, and that of the local population.

This difference of interpretation in words like “danger” created a devastating imbalance of information between the AEC and the public. In “Rationalizing the Home Front: The Cold War, The Nevada Test Site, and Radiation Exposure,” historian Leisl Carr explains that AEC radiation monitors, who served as “the public liaisons between the atomic testing program and the offsite communities,” personally interpreted the word “safe” to mean “no permanent damage.”<sup>15</sup> However, even AEC scientists were unsure of what permanent damage even meant for a civilian population. Lacking statistical evidence or scientific proof, the AEC used “prevailing scientific theory” to assume that *some* radiation was not dangerous to public health.<sup>16</sup> This theory, called the Threshold Hypothesis, posited the following: since radiological assessment is measured on its “noncumulative impact,” then “no permanent health effects” can possibly arise as long as “an established maximum dose is not exceeded within a given time frame.”<sup>17</sup> At this time, scientists believed that small doses of radioactivity could not aggregate when deposited over several different tests weeks or months apart from one another. Therefore, the AEC’s activities presented no “danger” to the public, because by scientists’ accounts the tests would not lead to aggregating radiological effects. Carr explains the AEC’s logic as follows: “As long as the exposure was less than the theoretically determined safe level, there would be no permanent harm done.”<sup>18</sup> Through this line of thinking, the AEC could present the test site’s activities as safe.

An oasis in the desert, the Test Site as a military institution served signified new life for its citizens. Many people, my grandparents included, moved onto the test site and lived in dorms segregated by sex.<sup>19</sup> The site also featured a movie theatre, bowling alley, and restaurants in which employees could occupy themselves when off work.<sup>20</sup> Through its provision of food, housing, shelter, and recreation, the site became interwoven with all aspects of employees' lives. The site's relative isolation and provision of leisure and recreational opportunities helped normalize its operations and create a stronger, more positive connection between the site and those who lived and worked there.

In addition to their military salary, the government provided a per diem allotment to those working on the site. George Maynard, an atomic veteran who worked on the Site from 1956 to 1957, noted in a 2005 interview for the Nevada Test Site Oral History Project recalled that he received "an additional six dollars a day pay for being isolated" in the Mojave Desert.<sup>21</sup> My grandmother hoarded her per diem to the best of her ability—saving away two to three dollars a day—in order to pay for college. The significant salary, alongside the per diem, provided site employees with an equal sense of patriotism and prosperity. They were able to serve their nation while also making a good living, which was arguably the perfect fulfillment of the Cold War American Dream.

The test site's idyllic lifestyle seems incongruent with its destructive purpose. Site administrators permitted those who worked there a glimpse of what they were helping accomplish. Site administrators permitted employees, and, sometimes, the media, to witness a test in action. Maynard remembered witnessing the bomb with his own eyes on two separate occasions.<sup>22</sup> He recalled that the destruction was "...beautiful to look at but very scary to think what would happen if they ever had to use it." For my grandmother,

witnessing the ball of fire awoke feelings of terror, awe, and pride. She remarked that seeing what the bomb could do made her feel “powerful,” and that she was a member of the “best team” in this new global conflict.<sup>23</sup> While terrifying, the bomb ultimately invoked a strong sense of patriotism and membership in a team much larger than oneself.

In order to truly understand and demonstrate the atomic bomb’s power, atomic scientists needed to see what would happen if a bomb dropped in a civilian area. But how were administrators to do this without putting civilian lives at stake? Construction workers, my great-uncle included, erected towers, homes, and medic centers, fully completed and furnished, in order to sample the bomb’s effects on contemporary infrastructure. In a 1954 public service announcement titled “Let’s Face It,” the narrator describes the makeshift town: “It’s a weird, fantastic city,” he croons, “a creation right out of science fiction.”<sup>24</sup> After the test, site employees surveyed the damage. In the moments after the bomb’s great hot flash, site monitors witnessed homes obliterated, towers vaporized. Mannequins, dutifully substituting for innocent civilians, stood warped and melted. In his summary of the destruction, the narrator gives the wreckage a poetic urgency. He assures the viewer, “Every bit of twisted steel makes its contribution. Blackened ruins and ashes of a structure add another chapter.”<sup>25</sup> Another chapter to what, he does not clarify. This haunting imagery tells the viewer that the damage, while in this scenario practically hypothetical, has a purpose and is necessary for the nation’s survival. Yet, a hidden specter haunted the site long after the mannequins had been replaced and the homes rebuilt, one whose dangers were anything but hypothetical: radiation.

Under the assurances of the AEC’s protocol, site employees believed that they were in good hands and taking all necessary precautions to be safe from radiation.



Maynard worked as a site electrician, where he provided adequate lighting at the test area for atomic scientists to witness the absolute destruction of the bomb. Maynard's job on the site required him to work close to the blast site three days after an atmospheric test while the area still "hot," or rife with radioactivity.<sup>26</sup> Maynard would apply three layers of "rad-safe" clothing, and then enter an area only a few hundred feet from ground zero.<sup>27</sup> After he finished the job, Maynard stripped himself of his rad-safe clothing and proceeded through a large, arch-shaped monitor to check for signs of radioactive contamination. Even naked, his body triggered the radioactive sensors. Site administrators ordered Maynard to shower three times, and provided him ear and nose swabs. They gave him a new radioactivity-detecting badge, sent him to a holding area, and eventually cleared him to return to the living area.<sup>28</sup> In a close examination of this decontamination process, the provision of a new film badge seems suspicious. The ear and nose swabs are helpful in distracting from the fact that the rad-safe clothing may not be that safe from radiation at all. This way, site administrators could imply that radioactive detectors were not going off because of radioactive fallout that had seeped into his bones, but instead of leftover fallout that came from the one area of the body that the rad-safe clothing did not cover.

Some of the government's public health messages regarding the dangers of radioactivity could appear almost farcical if they did not have such fatal consequences. Perhaps the most glaring example of the government's mishandling of information regarding radioactivity's safety is the AEC's 1955 public health pamphlet "Atomic Test Effects in the Nevada Test Site Region," written for Nevadans living near the site. In this pamphlet, the Commission employs faulty logic and incomplete scientific reasoning in

order to assure residents of their safety. It recommended citizens to take “simple precautionary measures” in order to “reduce exposure.”<sup>29</sup> Some of these precautionary measures included “thorough washing of exposed areas as soon as possible after fall-out has occurred, and other measures to remove the particles, such as brushing or changing clothes.”<sup>30</sup> The DOE also recommends bathing, washing one’s hair, dusting one’s clothes, and shaking off shoes. This is particularly dangerous advice because it paints an image of radioactive particles being visible, like dust in the wind. Radioactive fallout is microscopic in scale, and is practically imperceptible.<sup>31</sup> Thus, it is impossible for one to shake off or shed these microscopic particles because it is nearly impossible to even notice that those particles are there in the first place. However, by framing safety precautions in terms and actions that already appeared in residents’ daily routines, the AEC further normalized radioactive fallout’s existence in the world.

One was less likely to take even rudimentary precautions when convinced that the radioactive particles were no longer dangerous. The pamphlet reminded residents that in the moments after the blast the particles eventually dissipate, “having spread into an air mass.”<sup>32</sup> It continued, “With each minute, its radioactivity loses strength.”<sup>33</sup> This is technically true on the most primitive scientific basis, but certainly misleading.

Radioactive particles begin to decay immediately after they are deployed, but the process of decay usually takes far longer than the pamphlet suggested. Cesium-37, a radioactive particle that the Atomic Archive considers to be a “major source of radiation in nuclear fallout,” has a half-life of 30 years, which means it takes 30 years for only half of a sample to decay. The AEC does not mention half-life in the pamphlet, and its conspicuous absence allows the reader to think that within a few hours of a test shot, all

of the dangerous radioactivity would have decayed in full and it would be completely safe to resume life as normal.

Even if the aforementioned procedures were sincerely offered, the Atomic Energy Council was not averse to blatantly lying about the prolonged effects of radioactivity. In that same pamphlet, the Commission stated, “Many people who were severely injured by bomb radiation in Japan during World War II made good recoveries.”<sup>34</sup> This singular sentence, provided without any additional evidence or anecdote, leaves too many unanswered questions to be considered reliable information: it does not specify the type of recovery, how many people made this recovery, or even a working definition of what constitutes a “good” recovery. Through the use of generalities, weak adjectives, and unelaborated information, the AEC built trust with civilians that was almost entirely unfounded.

By undermining the serious and likely effects of substantive radioactive exposure, the Atomic Energy Commission allowed nearby civilian residents and site employees to put their trust in the government. The AEC worked hard to normalize radiation’s prevalence and thus its right to exist in the new atomic society. In a subsection of the aforementioned pamphlet titled “Radiation is Nothing New,” the AEC attempted to frame radioactivity as a natural part of living on Earth, no different than the water we drink or the air we breathe. Terrifyingly, the pamphlet calmly declared to the reader, “Your best action is not to be worried about fall-out.”<sup>35</sup> Again, government officials prescribe complacency and calmness as a way to fulfill the modern requirements of patriotism.

One of the primary reasons that the AEC selected the Nevada Gunnery range for the test site is because of Nevada’s highly predictable weather patterns. However, just

because weather is predictable does not mean it is controllable. Oftentimes, wind would pick up fallout and carry it “Downwind.” Nevadans were not the only Americans in danger of the test’s fallout: fallout endangered the entire community of Downwinders, who were defined as Southwestern residents who lived within a 200-mile radius north and east of the Nevada Test Site. Downwinders faced significant risk of exposure to fallout as well as a higher proclivity for radioactivity-related cancer and death.

While the government tried its best to placate those who were in danger of fallout, it was difficult to convincingly mask that which was clearly visible. During a 1953 test series, approximately five thousand sheep that grazed on the Nevada-Utah border experienced burns, blindness, and death.<sup>36</sup> According to one report, this period resulted in “a 30% loss of lambs and a 20% loss of mature sheep.”<sup>37</sup> This strange occurrence, juxtaposed with its proximity in both time and place with the nuclear tests, prompted ranchers to summon the AEC for a full investigation. In August of 1953, the AEC released a report in response to the ranchers’ requests. The study featured the opinions of two professional veterinarians, Navy Major Robert Veenstra and Dr. Robert Thompsett. It is important to note that Major Veenstra worked at the US Naval Radiological Defense Laboratory and Dr. Thompsett had been involved in the Trinity test in Los Alamos.<sup>38</sup>

While the report ultimately concluded that there was no significant correlation between the sheep deaths and the test site, hidden within its pages was incriminating evidence that suggested the contrary. The buried section of the report presented observations from both Veenstra and Thompsett that stated they had noticed a “surprisingly high concentration of radioactive elements which had become fixed in the thyroid tissue and bones” of the dead sheep.<sup>39</sup> Apparently, the existence of radioactive

elements in the sheep, even when the levels of radiation were considered by professional veterinarians to be “surprisingly high,” was not enough to create any correlation between the test site and the deaths. This blatant suppression of information calls into question the AEC’s relationship with truth.

Unfortunately, animals were not the only victims of radiation poisoning downwind from the test site. Many downwind communities experienced an influx of cancer and leukemia, especially among children. Zenna and Eugene Bridges of Salt Lake City, Utah were one of many families who tragically lost a child to cancer in the wake of atomic testing. In May of 1956, nearly a year after the Teapot Test Series in Nevada, their seven-year-old son, Lonnie, began experiencing terrible nosebleeds.<sup>40 41</sup> After months of feeling helpless and little guidance from doctors, they discovered that Lonnie was suffering from “a lymphosarcoma that only grows in adults.”<sup>42</sup> Doctors gave Lonnie a devastating prognosis of only a twenty-five percent chance of survival. Tragically, Lonnie died that December. In an interview with the Nevada Test Site Oral History Project, Mrs. Bridges recalled that in the autopsy, doctors were horrified to discover that all of his internal organs had disintegrated in the last days of his life. The doctors had not seen anything like it before.<sup>43</sup>

Lonnie’s story is peculiarly common for Downwind children: Zenna and Eugene Bridges remember often seeing obituaries of young children who had died of leukemia, but did not attribute these deaths to the Nevada Test site until long after their correlation between the atomic tests and increased cancer rates. A 2006 scientific study estimates that fallout from the Nevada Test Site may be responsible for approximately 1,800 radiation-related leukemia deaths in the United States.<sup>44</sup> However, this figure, while

significant, should remain in context. For comparison, the study also reports “1.5 million leukemia deaths [are] expected eventually among the 1952 population of the United States.”<sup>45</sup> While the Nevada Test Site is nowhere near responsible for most of the Leukemia deaths among the 1952, it is still clear that the AEC was wrong in asserting so aggressively that the test site’s activities would lead to no permanent damage.

It is extremely difficult to reconcile the deaths and heartbreak due to the Nevada Test site because many personal and family tragedies left in its wake may have been preventable if the government had not perpetuated so much misinformation. However, Carr cites historian Richard Miller in her suggestion that the AEC “was consistently torn between guarding and divulging information to the public that could either harm or support their mission.”<sup>46</sup> So, they decided to stay reticent: worried that the public would not be able to distinguish between major and minor risks in a transparent report, the AEC decided it would be best to assert that there was no risk whatsoever.<sup>47</sup> If the AEC divulged too much information regarding radiation, they risked sparking mass panic and a subsequent shutdown of the program. This was clearly a negligent decision, but at its foundation laid a very real fear. Nuclear scientists and diplomats felt they were doing everything they could to prepare for a nuclear confrontation with the Soviet Union, unsure when that confrontation would come or if it would come at all. However, despite even its most earnest intentions and most legitimate fears, the AEC is still responsible for misinforming and poisoning residents of the Southwestern United States.

Ultimately, the United States’ use of continental, open-air atomic testing came to an end, thanks in part to citizen protest and the publicizing of its dangers. In 1963, Secretary of State Dean Rusk signed on behalf of the United States the Partial Nuclear

Test Ban Treaty, which effectively banned all nuclear tests above ground, in space, or underwater. By the time of the treaty's signing, the United States Government had conducted 207 continental tests at the Nevada Test Site.<sup>48</sup> And though the continental test operations had terminated, the cancer that they had created continued on.

As evidence continued to mount connecting cancer in downwind communities to the operations of the Nevada Test Site, those affected began to seek for some sort of restitution or closure from decades of uncertainty, illness, and death. However, the legislative and judicial branches of government had disparate responses to the Downwinders' troublesome circumstances. Congress was receptive to the plight of Downwinders and willing to hold the AEC accountable. In August of 1980, the U.S. House of Representatives Subcommittee on Oversight and Investigations conducted a hearing to examine the AEC's culpability in downwind cancer. They concluded, "All evidence suggesting that radiation was having harmful effects, be it on the sheep or the people, was not only disregarded but actually suppressed."<sup>49</sup> In believing that it could save itself through avoiding panic, the AEC actually condemned its relationship with the public through its suppression of truth and information.

The District Court system, on the other hand, was less concerned with this suppression of truth. In 1987, 1200 downwind residents sued the federal government for violating Tort Law, which pertains to damages caused by the United States.<sup>50</sup> They lost the case in the 10<sup>th</sup> Circuit District Court of Appeals. The two presiding justices, Judge Logan and Judge McKay, stated that the plaintiffs were unable to prove that the AEC's choices were "discretionary," and thus the AEC could not be liable for negligence.<sup>51</sup> Though the plaintiffs appealed the decision and attempted to send the case to the

Supreme Court, the Supreme Court let it die. The *Allen* case serves as a reminder that the government will often prioritize protecting itself in the name of national security, even if innocent lives are lost.

However, the Downwinders and atomic veterans eventually received legitimate recognition from the Federal Government. In October of 1990 Congress passed the Radiation Exposure Compensation Act, which provided some financial restitution to those who contracted cancer from the site's activities. The site allocated lump sum compensations of \$50,000 to downwind residents and \$75,000 to Site "participants."<sup>52</sup> For many families, this sum might seem like an afterthought: too small to pay off exorbitant medical fees and also delivered nearly forty years too late. However, Federal recognition might be the first step in providing justice to downwind communities.

In its public relations program, the AEC used assuring language to convince downwind citizens of their safety, but their claims and their data were false. They used misleading phrases and incomplete, oftentimes inaccurate facts in a way that had real consequences. In the wake of the AEC's actions, lives were ruined, families were destroyed, and generations were altered forever. My own grandfather died of cancer brought on by radiation from the site. The Nevada Test Site served as an important battlefield for the Cold War, but unfortunately many citizens who should have been protected by that battlefield were in actuality its victims.



## ENDNOTES

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