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# How to Achieve Public Participation in Nuclear Waste Decisions: Public Relations or Transparent Adversary Science

Judy Treichel\*

## Introduction

Commercial nuclear reactors in the United States have been producing electricity and highly radioactive wastes for more than forty years. Originally, reluctant utilities built reactors at the urging of Congress, acting in accordance with the Atomic Energy Act.<sup>1</sup> The Act called for promotion of nuclear technology and also provided a shield of secrecy allowing for extensive power to classify information. Wiretapping and other surveillance techniques were allowable if nuclear secrets or interference with nuclear programs were involved.<sup>2</sup> During this time the Atomic Energy Commission (AEC) provided films and comic books, and gave speeches in a public relations campaign designed to convince the public, both in the U.S. and abroad, that the same technology that created the atomic bomb could be used to vastly improve the quality of life. Throughout the period of hard sell and promotion of nuclear power, the issue of waste management and disposal was either ignored or assurances were given that there was no problem. Since the 1950s, science, business and government have claimed that solutions are available and that nuclear waste disposal is a political problem, not a technical challenge.

In 1975, the AEC was transformed into two new federal agencies: the Nuclear Regulatory Commission (NRC), charged with regulating the civilian nuclear industry, and the Energy Research and

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<sup>1</sup> 42 U.S.C. § 2011.

<sup>2</sup> See Rosalie Bertell, *No Immediate Danger? Prognosis for a Radioactive Earth* (1985).

Development Administration (ERDA) which, two years later, became the Department of Energy (DOE). Although the AEC ceased to exist more than twenty years ago, the Atomic Energy Act that created it is still very much alive.

During the 1960s and 1970s, government attempts were made to site and build a repository. When no waste facilities appeared and irradiated fuel began to fill the cooling pools at the commercial nuclear reactor sites, Congress, in the late 1970s, decided to create legislation that would provide for a fair siting process and also ensure that a repository would be built. The Nuclear Waste Policy Act of 1982 provided a national screening process for the selection of first and second repository sites.<sup>3</sup> Making no effort to find out what would be a publicly acceptable plan, Congress simply decided that if a first site was chosen in the West, with limited capacity so as to assure that there would be a second site in the East, citizens would endorse the plan. Strong citizen opposition began almost immediately at every site under consideration and when it became a political nightmare, particularly for Congressional representatives seeking reelection, the Act was amended. In both the original Act and the Amendments Act of 1987, the heavy hand of the Atomic Energy Act was evident.<sup>4</sup> The federal government claimed complete jurisdiction of the regulation of the waste, and the federal laws allowed for the preemption of state laws. This decision to regulate nuclear waste was justified on the ground Congress had already occupied the entire field of "nuclear safety concerns" when it passed the Atomic Energy Act of 1954.<sup>5</sup>

The Amendments Act named Yucca Mountain as the sole site to be studied and placed all authority and decision making in the hands of the DOE and NRC. The State of Nevada was given the right to issue a "notice of disapproval" if or when the site was officially selected but the courts have determined that even that cannot be done until all site characterization is completed and the site has been recommended by the President. Almost certainly the issuance of the notice will be an exercise in futility because it can be overridden by Congress. The Act

<sup>3</sup> 42 U.S.C. § 10101.

<sup>4</sup> See *id.*; 42 U.S.C. § 10172.

<sup>5</sup> See Douglas Easterling & Howard Kunreuther, *The Dilemma of Siting a High-Level Nuclear Waste Repository Studies in Risk and Uncertainty* (1995).

also called for the State to be provided funds for oversight and public information. However, first the DOE chose to withhold the money and then Congress refused to appropriate such funds, believing or fearing that Nevada would be able to thwart the federal program.

When Nevada officials and citizens expressed outrage at the law and its implications, DOE attempted to mollify them by creating “public participation plans.” During the last twelve years a whole series of such plans has been drafted but none ever made it to final form. There have been calls for other strategies to be employed as well, in hopes of getting the people of the state to either change their minds or accept their fate. Little or no effort has been made to determine why the opposition is so entrenched and all suggestions of negotiated benefits are rejected out of hand.

### The Atomic History of the Western U.S.

Nuclear weapons testing at the Nevada Test Site began in 1951, and, although there have been some temporary interruptions, it continues today as sub-critical testing. Until 1963 the bombs were exploded in the atmosphere, either above or at the desert surface. Like the rest of the atomic weapons program, this activity would have been shrouded in secrecy, but the incredible flash of the explosions and the rising mushroom clouds that drifted away from the test site made concealment of the tests impossible. What could be, and was, concealed was the health and environmental danger of those tests which was well known at the time.

Longtime residents of Nevada, Utah and Arizona remember the tests and the oft repeated assurance – “there is no danger.” Northeast from Las Vegas and the Nevada Test Site are farming and ranching communities and some small towns near mines where older residents can recall the various tests and the fallout that caused illness and damage to themselves and their animals. Many books have been written and the stories and pictures in them are similar in terms of what happened to those living and working downwind. Here is an example from the book, *Fallout*.<sup>6</sup> It tells about a test shot, code named Harry, that was part of one testing series in 1953. After the shot, as the radioactive cloud floated to the northeast, vehicles were stopped along

<sup>6</sup> See P. Fradkin, *Fallout: An American Nuclear Tragedy* (1989).

the highway so that fallout particles could be washed off. The deputy sheriff who made the traffic stop was on horseback. The name of his horse was Fallout because of the radiation burns on its back. The deputy and other local residents noticed that the radiation monitoring device of an AEC official was reading off the scale, but the official assured them that everything was all right. The regulation for offsite radiation at that time was 3.9 rems over a period of thirteen weeks. But it was a general guideline that could be exceeded if AEC personnel decided it was necessary to conduct more tests.<sup>7</sup>

People who were working outside on the day of test shot Harry, as most farmers and ranchers were, experienced burns on their exposed skin. Others downwind of the test told of other conditions such as headaches, fever, thirst, dizziness, nausea, diarrhea, vomiting, hair loss, discoloration of fingernails and hemorrhaging. Some people suffered serious and painful symptoms while others had no reaction at all. The sorts of ailments that some people were experiencing indicate that the levels were tens to hundreds of times higher than the allowable dose.<sup>8</sup>

The people who were subjected to false assurances and who received virtually unrestricted radiation doses during atmospheric testing were the first Americans to experience government risk assessment. The radiation guideline in effect at that time was decided by an AEC scientist, George Dunning, who claimed later in a court case that, "it was a matter of balancing benefits against risks."<sup>9</sup>

During this time in our history, still in the memories of people who experienced it first hand, the predecessors to the current DOE did not just fail to warn the people who would suffer the effects of radiation exposure; they embarked on deceitful, pretentious public relations campaigns. A good example was one of the films that was produced by the AEC to be shown in areas where the residents had begun to demand that the bomb tests be stopped. The Commission's director of public information said, "The film was designed as part of the education program to dispel the unwarranted worry among residents in Nevada and adjoining states about hazards from tests. This worry was

<sup>7</sup> *See id.*

<sup>8</sup> *See id.*

<sup>9</sup> *Id.*

threatening continued use of the test site.” In the film, the narrator states, “The Atomic Energy Commission doesn’t take chances on safety.”<sup>10</sup>

Eventually there were lawsuits filed by residents, uranium miners, veterans, ranchers and farmers for illnesses, deaths and loss of livestock. Although a lower court ruled favorably for some of the plaintiffs, those cases were overturned and eventually the verdict for all was unfavorable — it was the opinion of the appeals court that the government had sovereign immunity, and although the cancer deaths were unfortunate, the court decided that it was not the place of the judicial branch to question the decisions of the federal government.

This is not to say that the disposal of high-level nuclear waste at Yucca Mountain would pose the same threat that atmospheric weapons testing created for people living nearby or downwind. It is told to point out that the people and state being targeted to host the nation’s high-level nuclear waste repository have been victimized before. They have already heard similar assurances that were untrue and have been subjected to “education” that the old AEC believed would instill trust in those who were then referred to as “the risk population.”

The Downwinders who were personally deceived by the Atomic Energy Commission during atmospheric weapons testing did not tell their stories to gain notoriety. Most of the victims, living closest to the test site were private, patriotic people whose feelings can be summed up by a statement made in 1992 by Elizabeth Wright of St. George, Utah: “We’re willing to look to the future and say, okay, it happened, but it must never happen again.”<sup>11</sup>

### Public Relations and the Repository Program

When the federal government sought a place for weapons testing within the continental U.S. in 1949, experts sought a place that was remote, sparsely populated meteorologically sound, and preferably already under federal jurisdiction. They found such a setting in southern Nevada, northwest of Las Vegas. Now, five decades later, the federal government once again needs a place which is remote, secure, and environmentally appropriate for the housing of another, perhaps

<sup>10</sup> *Id.*

<sup>11</sup> Carole Gallagher, *American Ground Zero: The Secret Nuclear War* (1993).

even more controversial, nuclear project. And again Washington has chosen Nevada.<sup>12</sup>

When Yucca Mountain was singled out as the sole site to be studied for a national repository, Nevadans were told that if the site was unsuitable, it could never be recommended or licensed. Residents were assured that with the existing Environmental Protection Agency radiation standard, NRC licensing rules, and DOE siting guidelines with qualifying and disqualifying conditions, that the mountain could never become a repository without clear proof of its ability to contain and isolate the waste. But regardless of the promises from the DOE representatives, skeptical public audiences told federal officials about Nevada's experience during the days of weapons testing and that they did not believe that the site would be eliminated from consideration once a lot of money had been spent and there were no alternative sites available.

More than a decade later, Nevadans believe that their fears have been confirmed. All of the rules and regulations governing the selection and licensing of a repository are in the process of change and in fact, officials do say now, although not on the record, that this is the only site and it is essential to have a repository. Representatives of the commercial nuclear industry are more outspoken. They publicly say that a repository at Yucca Mountain is inevitable and that the only intelligent thing for people to do is to accept the fact that it will be built and negotiate for benefits.

Apparently naivete or miscalculation led both the government and nuclear industry to believe that the public would accept the nuclear waste program because so-called experts claimed that it would be safe, or a crisis made it necessary, and there was no other choice. Nevadans have been treated much like stubborn children. In efforts to reason with their children, parents often explain why a decision has been made. If the youngster still refuses to accept it, ultimately the parent just decides that the argument is over. Similarly, the public has repeatedly argued with DOE about the lack of ability of Yucca Mountain to isolate waste for the long term. The discussion often ends with DOE, concluding

<sup>12</sup> See A. Costandina Titus, *Battle Born Federal-State Conflict in Nevada During the Twentieth Century* (1989).

that “we have to do something.” This heavy handed, paternalistic, “father knows best” style has its roots in the Atomic Energy Act and its directive to promote nuclear power. But Nevadans are not children and their experiences during the years of atomic weapons testing have destroyed all of the sort of trust in government and technology that existed in the 1940s and 1950s. This is not unique to Nevada. Americans generally have become increasingly disenchanted with government and suspicious of technology.

Throughout the life of the U.S. high-level nuclear waste program, problems have been eliminated with quick fix solutions. When it appeared that all possible repository sites would fail because of political opposition, Congress enacted a legislative fix and changed the law to single out Nevada. After years of assurances to Nevadans that Yucca Mountain would have to meet all requirements, when evidence surfaced suggesting that Yucca Mountain would not meet existing standards and regulations for the isolation of waste, technological fixes came about. People were told that engineering could provide protection for thousands of years and “the otherwise good site” need not be disqualified. Each new public participation plan drafted by the DOE appeared to citizens to be a “knowledge fix.”<sup>13</sup>

Almost certainly the opposition to the Yucca Mountain repository program cannot be overcome. Public opinion against the facility is growing and probably will continue to do so. The government and nuclear industry have nothing to offer the citizens of Nevada that would serve as an inducement to accept an unwanted project. The first question that must be answered is: How much does public acceptance matter? If the opposition of Nevadans and others is unimportant, then the Congress can take the advice given by Luther Carter in 1993:

Congress could break up the political dynamic that has favored all-out state resistance by declaring unequivocally that the Nevada Test Site is to become the center for nuclear storage and by directing that a spent-fuel surface storage be built and ready to operate [in five years].<sup>14</sup>

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<sup>13</sup> Public Reactions to Nuclear Waste Citizens' Views of Repository Siting (Riley Dunlap, Michael Kraft, & Eugene Rosa eds., 1993).

<sup>14</sup> Luther Carter, *Ending the Gridlock on Nuclear Waste Storage Issues in Science and Technology Resources for the Future* (1993).



Following that advice will lead to costly, long term litigation, public anger and, most likely, civil disobedience actions similar to those experienced in Germany when attempts were made to transport waste.

If public acceptance is considered necessary, as it is by many countries, then the Yucca Mountain program and efforts to site a "temporary" storage facility at the Nevada Test Site must stop. No amount of education, transparency, or risk communication will achieve the goal of public support for either program. But the program should not simply stop and be forgotten until a new policy is conceived. Waste exists; it is dangerous material needing good, long-term storage and management techniques, and there are important lessons that can be learned from the experiences of the last twenty years of this program.

### Risk Assessment, Communication and Transparency

Risk assessment is not a new concept. It is a routine part of the decision process for many projects where the cost is substantial and success is not assured. A good example might be the building of an airport to serve a city. First, the residents would have to want to have available airplane transportation. The citizens' representative would decide, with a builder, where the facility would be located and what restrictions would be required. The builder would then decide if the project the community wanted could be successfully built, what time would be necessary and how much it would cost. The project would never be contemplated if a large majority of the people did not want the airport. It would also never start if the builder thought that the success of the project was not certain or if the cost was more than the community could afford. Because the people wanted the project, the elected officials and builder would not have to go to great lengths to gain trust and confidence or to make the project transparent. However, if this town valued isolation and quiet, and had no desire to travel by plane, it would be virtually impossible to convince them to build or even accept an airport. This is more or less the situation with a Nevada high-level nuclear waste facility.

Perhaps if the history was different and the State had no firm opinion about the project, the prospects might be different. There might be opportunities for proponents of the program to make a sales

pitch, but honest risk communication and transparency cannot be added to an unpopular project like seasoning to a plate of food. Both must have taken place before the start of the program. Public interest groups and knowledgeable, concerned citizens must first agree with the government or the policy's promoters that it is necessary and appropriate. To be deemed necessary it must be obvious that not taking action is costly or risky. Appropriateness comes from evidence that the proposed action is the best that can be done and is a solution or makes the problem significantly better. For Nevadans and many citizens elsewhere, the Yucca Mountain project does not pass either of these tests.

### Options for the Future

The first step in a new program should be a broad public discussion of all the issues that citizens believe are involved or relevant. Currently, public audiences are never allowed to question the need or desirability of future commercial nuclear power in discussions about waste disposal. This is unfair because the government and nuclear industry representatives usually explain the value of nuclear power when justifying the need for a national repository or centralized storage facility.

There must also be agreement on what the problem is before solutions are determined. The U.S. nuclear waste problem is viewed very differently by government, industry and the public. Often nuclear industry representatives consider risk in monetary terms. The DOE is concerned about risks associated with missing schedule deadlines. Similarly, benefits are defined by the bureaucratic parties very differently than they are by the public. The importance and impact of cost is another issue that is considered differently by all parties. A good example is the often heard rationale that the problem must be solved by this generation and not left to our grandchildren. That statement is nothing more than a poor excuse for speeding up the project. The public knows that a program that requires a minimum of fifty years to complete will undoubtedly be left to the grandchildren. They also have doubts about whether the current program is a solution or a far more dangerous problem for their descendants. Most of these discussions also develop serious arguments about semantics. People become frustrated and angry when they are told that health effects are latent fatal cancers

and all other radiation-induced health conditions are excluded from consideration. These discussion restrictions are an affront to people's ethics and value systems.

Another issue that is considered "off the table" is reexamination of alternative disposal or waste management technologies. A new program must explore whether or not there is national agreement that deep geologic disposal is the best or only option. Such an appraisal has two key requirements. First, the values of the general public must be reflected in whatever decisions are made. Second, the process must last long enough to foster a true consensus.<sup>15</sup>

The public should have the ability to hire qualified, independent scientists and experts. After the history of secrecy that has permeated atomic activities, citizens are skeptical of information that comes from those who are paid by, or associated with, the government or the nuclear industry. Officials and investigators at Yucca Mountain have been accused of practicing advocacy science. People suspect that project scientists have either chosen, or have been directed, to primarily look for site conditions or attributes that are favorable. Whether or not the charge is warranted, public trust and confidence will be greatly increased if their interests are protected by their own adversary scientists.

Once agreement has been reached on a national policy, there will likely be a local component to the program. If a site or sites are to be chosen for nuclear waste management or disposal facilities, it should be done through a volunteer process. A key element to finding a community to host any project could well be the ability of the residents to have their own trusted experts and advisors. A March 1999 British House of Lords report noted that "surveys of public opinion about environmental issues show that the public in Britain has less trust in government scientists than in those working for environmental organizations."<sup>16</sup> Clearly there has been a failure in federal government risk communication in the U.K. similar to that in the U.S. because the next section of the report states: "In general, the public has

<sup>15</sup> See Douglas Easterling & Howard Kunreuther, *The Dilemma of Siting a High-Level Nuclear Waste Repository Studies in Risk and Uncertainty* (1995).

<sup>16</sup> House of Lords Science and Technology Committee, *Third Report, Ch. 5, Public Acceptability, Sec. 13, 1999.*

a propensity to believe statements from environmental organizations that there are significant risks and to disbelieve Government statements that risks are negligible.”<sup>17</sup>

And finally, it must be allowable to take no action. It is not true that “we have to do something.” It is also not fair for people who dissent to be required to “have a better answer.” In fact, their unwillingness to burden their grandchildren with possibly a far greater, more dangerous situation very well might be “a better answer.” The National Academy of Sciences/National Research Council Committee on Risk Characterization advises, “Even if participation does not increase support for a decision, it may clear up misunderstandings about the nature of a controversy and the views of various participants. And it may contribute generally to building trust in the process, with benefits for dealing with similar issues in the future.”<sup>18</sup>




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<sup>17</sup> House of Lords Science and Technology Committee, Third Report, Ch. 5, Public Acceptability, Sec. 14, 1999.

<sup>18</sup> Committee on Risk Characterization, *Understanding Risk Informing Decisions in a Democratic Society* (Paul Stern & Harvey Fineberg eds., 1996).

