WHAT DO NEARBY COMMUNITIES WANT TO KNOW ABOUT HIGH-LEVEL WASTE DISPOSAL?

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What do nearby communities want to know about the disposal of High-level waste? I selected this title some months ago, and as I began to prepare this speech, I was reminded of something Werner Karl Heisenberg said in his book, Physics and Philosophy. Heisenberg noted, "Since the measuring device has been constructed by the observer... we have to remember that what we observe is not nature in itself but nature exposed to our method of questioning." Therefore, it may be more accurate to say that I plan to present my observations on the questions and comments from Nevada communities about the potential use of Yucca Mountain as the site for a high-level nuclear waste repository. Most of the comments address two issues: specific questions about the repository siting process and the activities conducted by the Nevada Nuclear Waste Storage Investigations Project; and general concerns regarding public perceptions of societal risk.

In the past year the Waste Management Project Office has concentrated on establishing dialogues with the citizens, their elected officials and their representative organizations in the state of Nevada. We have addressed Rotary Clubs, Chambers of Commerce and Advisory Councils in such towns as Amargosa Valley, Boulder City, Ely, Eureka, Mesquite, Las Vegas, North Las Vegas, Pahrump and Tonopah. We have met with local chapters of the the American Nuclear Society, the American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc., and the National Society of Professional Engineers. We have held state-wide public hearings in Las Vegas and Reno. We have testified before the Nevada Legislative Commission Subcommittee to Study the Disposal of Highly Radioactive Waste in Nevada. We have worked closely with state representatives and provided a $350,000 grant to the Nevada State Department of Energy. The gentleman who is managing that effort, Bob Loux, is scheduled to participate in a panel discussion during tomorrow morning's session on "Socio-Economic Issues of High-Level Waste Repositories."

Thus, in the past twelve months, I have observed the iterative communication process between ourselves and various Nevada communities. I have also seen how these interactions have been reported by the media. I want to digress for a moment to make a special point about the media because I believe that the tone of the reporting often shapes public opinion and subsequently issues of public concern. In fact, it is my belief that the media has, perhaps inadvertantly, defined an issue that is generic to the whole field of waste management.

I am speaking of connotation versus denotation. I am speaking of the innuendoes that are conveyed through the use of words such as "dump." Webster's New World Dictionary defines the verb "dump" to mean, "1) to throw down or out roughly; empty out or unload as in a heap or mass; 2)(a) to throw away especially in a place set apart for that purpose, (b) to get rid of in an abrupt, rough or careless fashion." The noun "dump" is defined as "a rubbish pile" and the slang definition is "a place that is unpleasant, ugly, run-down, etc." We are also familiar with the slang expression "to dump on" meaning "to treat with contempt; demean." Thus, we envision a place that is vermin infested, septic and stinks to high heaven.

All of these definitions have negative connotations. In no way do they communicate to a reader or listener the ideas of good organization, effective management, regulated guidelines or application of proven technology. Rather a dump is perceived as a place where one abandons unwanted material and unwanted responsibility. Thus a headline, "Proposed Nuke Dump Site," stimulates a negative response before the first word of the article is read.

For that reason, we have been very careful to speak of our activity as a study for a proposed nuclear waste repository site. Note the emphasis on the word "repository." Returning again to Webster's New World Dictionary, we find the word "repository" is defined as "a box, chest, closet or room in which things may be placed for safekeeping." We want to make sure that the groups we speak to understand that we are seeking means to provide safekeeping of hazardous material, not the abandonment of nuclear waste or the dumping of responsibility.

While I recognize that a four-letter word is often preferable to a ten-letter word for the editor who is seeking a snappy headline or a punchy lead paragraph, the use of that four-letter word

can transform a conscientious and objective report into the subjective arena of sloppy journalism. By way of post script I might add how satisfied I was with the media response to one of our community presentations. The day we arrived the local paper had a story on page 1 which was headlined, "Nuclear Dump Site to be Discussed." The editor of the paper attended the presentation I made that evening. The follow-up story, which ran the next day, was headlined "Nuclear Waste Site Debated." Nowhere in the course of that article did the word "dump" appear, rather the article spoke of the potential "repository."

But I promised at the beginning to present my observations about issues of community interest in the State of Nevada. The specific questions fall into three broad areas: The Nuclear Waste Policy Act; technical capabilities of the Yucca Mountain site; and the socio-economic impact on nearby Nevada communities.

The Nuclear Waste Policy Act of 1982 was discussed extensively at the opening session this morning. When we go out to meet with various communities we try to cover the objective of the Act, acknowledge that it is a political compromise, and present the current schedule for the siting and selection process. While this is good base line information, there has been significant interest in three areas: (1) defining the avenues for state participation; (2) the opportunities for private citizens to be heard; and (3) commitment of financial responsibility. In short, these citizens want assurance. They want to know that they will be accorded a participatory role. They want to know that their concerns will be heard and responded to. They want to know that there is a process for state negotiations, state veto and state compensations. Finally, they want to know who will pay for the investigative studies, the construction and the eventual operation of a repository. As a state which does not consume any energy produced by nuclear power, Nevadans want to know that they will not be asked to pay the disposal costs for nuclear generated power.

When you realize that the Act was signed into law little more than 14 months ago, these are questions that represent an initial education effort on the part of all impacted communities. Because the memory of the MX siting process is still fresh in the minds of many Nevadans, there is much sensitivity to qualifying the rules regarding the siting of high-level nuclear waste repository and guaranteeing the citizens of Nevada a participatory role.

There have also been questions about the technical investigations. I will take a minute or so to list these questions.

- What physical form will the waste be in?
- What volume of waste will be emplaced in a repository?
- What is the degree of hazard of this waste?
- Will the hazard level change over time?
- How will the waste be contained?
- Could the waste spill into the land or water?
- Where does the water drain into the environment?
- How much land will the repository occupy?
- How will the waste be transported?
- How many waste shipments will there be?
- What routes will the shipments use?
- Will there be environmental monitoring during operation and after closure?
- Is the technology of a geologic repository being used anywhere else in the world?

Although we received such questions, it has become clear that they are being asked to measure our commitment to protect man and his environment. While these are valid questions, I do not believe that a full discussion of the technical issues would allow us the time to address the other issues of importance.

A third area of interest is the socio-economic impact of a repository. During the public hearings last year, we received more than 400 comments on twelve issues surrounding the site nomination. Seventy-three of these comments pertained to transportation and 64 comments dealt with socio-economic matters.

A summary, prepared by the panel who conducted the hearings, noted, "Transportation comments and issues were of as much concern during the public hearings as was the proposed selection of Yucca Mountain as a site. There was a fear of adverse impact on tourism with the public's knowledge of nuclear waste shipments transversing the same highways and the possibility of a catastrophic accident."

The panel also stated, "The comments in the area of socio-economic aspects were diverse and wide ranging. Reference was made to the fact that Nevada's economy over the years had been one of 'Boom or Bust.' If the Yucca Mountain was selected as the site and a 'Boom' period developed during the construction, how would the 'Bust' side be handled after the completion of the facility and the subsequent number of unemployed? Others were concerned that selection of the Yucca Mountain as a site would serve as a depressant on the Southern Nevada economy, adversely affecting tourism and the ability of the state to attract new high-technology industries."

At a hearing before the State Legislative Subcommittee, many questions focused on the transportation planning process vis-a-vis safety and emergency response as well as socio-economic impacts, especially the potential for adverse effects on tourism.

Thus, we feel that the issues of greatest concern in the area of socio-economic impact are tourism, transportation and community impact. Certainly these are understandable questions. The U.S. Travel Data Center reports that in 1981, the state of Nevada ranked 9th in the nation in terms of tourism revenue dollars have taken in $5.45 billion. The importance of tourism is even stronger when you realize that Nevada ranks 1st in the nation in tourism revenues per citizen, having generated $6,804 per capita in 1981. Further, the

average per capita income in Nevada in 1979 was only $8,453. Thus, the importance of tourism to the Nevada tax base is quite clear.

It is our understanding that we must address two questions: Is tourism affected by public perception of health and safety risk? Does the public perceive a high-level nuclear repository to present such a risk? Studies to answer these questions have been initiated by our office.

In the area of transportation, the questions again address public perception of health and safety risk. What will be the increased volume of traffic on existing roads and how will this affect accident rates? What about the potential for a catastrophic accident resulting in the release of a large quantity of radioactive material? Will there be increased background levels of radiation for citizens living along the transportation routes?

In this case, I think the real question that must be addressed is the criteria by which transportation is judged to be a risk. The league of Women Voters, in the booklet A Nuclear Waste Primer, states that, "compared to the transport of other hazardous materials, radioactive shipments have a gold-star record." Thus I expect that we will be reviewing the generic hazardous material transport system, the existing transportation conditions within the state of Nevada, existing regulations and all assumptions concerning transport of spent fuel.

Historically, the public has been aware of transportation accidents involving release of hazardous materials which have caused death, injury and citizen evacuations. In comparison to high-level radioactive materials, the volume of hazardous material shipments is great. The Department of Transportation estimates that 5-15 percent of all trucks on the road at any given time carry hazardous materials and the National Transportation Safety Board estimates that the number of such shipments will increase from 250,000 per day to 500,000 per day over the decade of the 1980's. Major transportation accidents involving these materials have received considerable attention from the national news media. And yet, the 1983 report, Transportation of Hazardous Materials: Toward a National Strategy, by the National Academy of Sciences reports the system to be adequately safe.

The Technology Transportation Center at Sandia National Laboratories maintains a record of all transportation accidents involving high-level radioactive material transported in type B packages. Despite the fact that there are more than 100 shipments per year of high-level nuclear waste, during the 12 year period from 1971-1982 Sandia reports only 27 accidents. More importantly, Sandia reports no release of high-level radioactive material.

In view of these statistics, we believe that there are substantial misconceptions about transportation. The question that needs to be addressed is the criteria by which transportation is judged to be a risk. If we use evacuation from one's home, we can see some interesting comparisons. For example, in 1981 there were a number of accidents involving hazardous materials and between 10,000 and 20,000 people were evacuated from their homes. And our society accepts this as a safe transportation system. By contrast, over the 25-30 years that we have been shipping high-level radioactive materials in type B containers, no one has been evacuated from their homes. In view of the comparison of the transportation record against some concrete standard of judgment we still remain perplexed as to the type of reactions the public has to the transport of high-level radioactive waste.

Finally, there is concern about the "Boom or Bust" effect which might result from the repository construction process. The perception seems to be that there will be a great influx of workers from outside the state seeking temporary employment and community services thereby causing major perturbations in the local economies.

The history of the state of Nevada tells of countless communities that were founded on one industry, experienced rapid surges in population, and were devastated by industry cessation. The cycle began with the Comstock Lode in 1857 and subsequent mining discoveries which led to the birth of the queen of boom towns, Virginia City, and others including Austin, Eureka, Hamilton, Tuscarora, and the colorful Pioche. The second surge of boom/bust activities followed Jim Butler's discovery of silver and gold in Tonopah in 1900. During the next decade the towns of Goldfield, Bullfrog and Ryolite enjoyed their moments of 'boom.' In more recent times, the U.S. Government spawned the boom towns of Boulder City and Henderson to build a dam and magnesium production facility. It is not surprising then that the citizens should question whether the five-year project to build a repository could trigger another series of boom towns.

Again, our office has initiated studies in this area to look at the estimated employment levels over specific periods. This will be compared to existing population data. We expect to examine the operational plan that the Department of Energy developed to assist in minimizing the impact of the 6,000 workers who are employed at the Nevada Test Site.

We are making a concerted effort to listen to these questions. We have undertaken studies and are engaged in conversation with various communities and the elected. But these are not the only matters that concern the citizens of Nevada.

Several months ago I was discussing these three issues in a local community presentation. During the question and answer period that followed, a member of the audience stated that those were the three issues that had been raised by the Nevada citizens. However, she went on to point out that those issues had been selected because they could be defined in economic terms and represented facts and figures the government would listen to. In fact, she went on to say, and I quote, "what we are really worried about is it's bad stuff. We hate the idea of having it."

We are finding that there are just as many questions that reflect existing opinions on the subjects of generic waste management, societal risk and the development of the nuclear power industry.

The press has acquainted the world with the waste management stories at Love Canal and Times Beach. Regardless of the specific facts, the

impression that remains behind is that through improper waste management, man and his environment have been injured. When this supposition is combined with the belief that radioactive materials can create catastrophies that would be orders of magnitude greater, you find yourself dealing with a modicum of facts and a wealth of strong emotion. Reliefs that waste facilities have been and will continue to be poorly managed and endanger man's health and safety. Beliefs that radioactive material is the most dangerous material known to man.

For some of the citizens in Nevada, much of this feeling is focused on activities at the Nevada Test Site and the low-level nuclear waste facility at Beatty, Nevada.

The citizens in Nevada know that the Beatty facility was temporarily shut down in 1979 to correct packaging problems. The citizens in Nevada know that they produce very little of the total low-level waste generated in the U.S. The citizens in Nevada know that between 1979 and 1982, 76 percent of the waste buried at Beatty came from the seven states of California, Pennsylvania, New Jersey, New York, Illinois, Michigan and Nebraska. Thus if the citizens in those states don't want it, i.e. it must be that "bad stuff," why should the citizens in Nevada accept it.

So we begin to see a confusion of facts. Communities are evaluating the hazard potential of the material in isolation rather than correlating it to the specifications of the disposal technology. For example, the Philadelphia Inquirer in their investigative report "Forever More: Nuclear Waste in America," discusses the siting problems for low-level facilities and notes, "The (Beatty) site is underlain with thick layers of clay that would retard the downward flow of water, if there were any water to flow into the burial trenches. Beatty receives a mere 4 inches of rain a year, making it one of the driest places in the United States. Most areas in the Northeast receive 35 to 45 inches of rain a year. The water table at Beatty is 300 feet below the surface. The water table is 32 feet underground at Maxey Flats, Kentucky, 10 feet below the surface at Sheffield, Illinois and 8 feet underground at West Valley, New York." Despite the fact that there has been no leakage from the Beatty site, the community questions the societal risk of any radioactive waste disposal facility.

The continuing court cases regarding radioactive fall-out from the atmospheric testing at the Nevada Test Site reinforce the presence of a nuclear specter. Finally, there are some who question the integrity of a management that supports nuclear power while maintaining objective assessments of technology for the disposal of high-level nuclear waste.

Now some of you may feel that I have presented a lot of negatives or a lot of issues that truly are not relevant. Some of you may say "ho-hum," it's the same old pro-versus anti-nuclear debate. And some of you may have wondered why I didn't expand or focus on the technical questions.

I could have restricted my speech to those comments of endorsement we have received from the Nevada Chapter of the National Society of Professional Engineers, the Southern Nevada section of the American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc., the town councils in Amargosa Valley and Pahrump, and other citizen groups. I could have stressed the technical components that have been presented in our talks to nearby communities. I could have discussed why I believe that the local communities around Yucca Mountain are very supportive of the Nevada Nuclear Waste Storage Investigations Project.

But, I agreed to speak on what nearby communities want to know about the disposal of high-level waste. That means telling you what the communities are questioning and what issues concern them. While we may have a different understanding of the physical situation and the safety of the proposal, it does not diminish the validity of the questions being asked by the citizens of Nevada. We must be prepared to deal with them as valid issues.

H. L. Mencken, in 1919, wrote that, "The public...demands certainties...but there are no certainties." Today's public wants a guarantee. A guarantee of responsibility. A guarantee of today's best knowledge and a commitment to tomorrow's responsibility.

We are investigating a site in Nevada for a high-level nuclear waste repository. A facility for long term, safekeeping of hazardous material. A facility with credible and responsible management. That's what nearby communities want to know.