# U. S. DEPARTMENT OF ENERGY
# PUBLIC HEARING FOR THE
# PROPOSED NOMINATION OF YUCCA MOUNTAIN
# AS A POTENTIAL HIGH LEVEL
# RADIOACTIVE WASTE REPOSITORY

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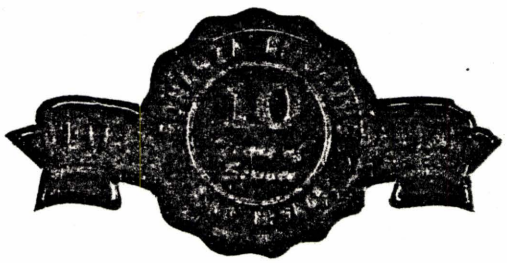
TRANSCRIPT OF PROCEEDINGS

March 31, 1983

Reno, Nevada



Reported by: MARGARET A. BAKER, CSR #160

Transcription: POLLY C. FERREIRA

Bonanza Reporting
CERTIFIED SHORTHAND REPORTERS
1111 FOREST
RENO, NEVADA 89509

# A P P E A R A N C E S

SPEAKERS:

ROBERT M. NELSON
JAMES J. FIORE
JOHN VIETH
JACK McBRIDE
JAMES BARNES
JOSEPH ROBERTSON
JERI ROBINSON
KATHARINE GARDINER HALE
WILLIAM BERNARD
SUSAN ORR
ABBY JOHNSON
DR. STEVE BLOOMFIELD
CYNTHIA MITCHELL
PEGGY TWEDT
JOHN EMERSON
SYM MORRIS
MAYA MILLER
GLENN WASSON
DR. WILLIAM MICHELSON
LIZ BERNHEIMER
LEONORE HAIMOWITZ
THEODORE OLESON
EVELYN SUMMERS
JANICE WHITEFEATHER
KRISTIN PFANKU
JIM BUCKLEY
GLENN MILLER
JOHN VIGOREN
ALYCE WILLIAMS
WILLIAM ROSSE
DAGMAR THORPE
ROBERT HENRY
DR. FRED ROGERS
JAMES SCHOFIELD

RENO, NEVADA, THURSDAY, MARCH 31, 1983, 10:00 A.M.

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MR. NELSON: Good morning, ladies and gentlemen. My name is Robert M. Nelson. I am an assistant manager of the DOE's Nevada Operations Office in Las Vegas. As the Department of Energy's presiding officer for this hearing, I now declare that this public hearing is open. For the record, this hearing is convened on March 31, 1983 at 10:00 a.m. at the UNR Student Union Building in Reno, Nevada.

Notice of this public hearing was published in the Federal Register on March 7, 1983. This hearing was also advertised through local news media announcements. I will conduct this hearing in accordance with the Federal Register Notice.

The purposes of this hearing are as follows:

1. To solicit comments on the nomination of Yucca Mountain for site characterization as a potential high-level radioactive waste repository. This site is located in Nye County, on and adjacent to the southwest corner of the Department of Energy's Nevada Test Site.

2. To solicit issues to be included

in an Environmental Assessment supporting the Department's formal nomination of that site.

3. To solicit issues to be addressed in the Site Characterization Plan which would subsequently be issued prior to proceeding with site characterization.

This public hearing will utilize a panel comprised of three persons, including a chairperson, who are not employees of the Department of Energy, and who have not participated directly in the preparation of the proposed nomination of Yucca Mountain. The panel, under the direction of the chairman, will conduct the oral presentations of the public at this hearing and will be responsible for seeking clarification or expansion of relevant points made during the hearing. The panel will also be responsible for preparing a summary report which presents the panel's consensus view of the significant issues raised by the public participants at the hearings.

A court reporter is present to prepare a complete transcript of this hearing. Anyone who wishes to purchase a copy of the transcript may make arrangements with the court reporter at their office.

Let me comment that what I'm saying now is available out at the registration desk, and the addresses for both the court reporter in Las Vegas and the court

reporter here in Reno and the prices of those records are listed in those, so I won't read them right now.

The entire record of this hearing, including the transcript, will be retained by DOE and made available for inspection at the DOE Freedom of Information Office, Nevada Operations Office, 2753 South Highland, Las Vegas, between the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday, except federal holidays. The record of the hearing will also be available for inspection at libraries located in Las Vegas, Reno, Carson City and Tonopah. The names and addresses of these libraries can be obtained at the registration desk.

The public may submit written comments on the proposed nomination; the issues to be addressed in the Environmental Assessment; and the issues to be addressed by any Site Characterization Plan, if developed. These comments will be added to the hearing transcripts for both locations and become an official Departmental record of the hearings. Written comments should be mailed to reach the following address by April 25, 1983. This is approximately a one-month extension beyond the date originally specified in the Federal Register Notice. The Federal Register Notice is currently being published to announce this extension.

The address is:

U. S. Department of Energy
Public Hearings on Nevada Site Characterization
Mail Stop 555
P. O. Box 14400
Las Vegas, Nevada 89114

And again, that's available out at the registration desk.

I would now like to establish the ground rules under which this hearing will be conducted.

In order to permit a significant number of presentations, a period of 10 minutes has been allocated for each speaker who made advance requests to speak.

This will not be an evidentiary or judicial type of hearing. Direct cross-examination of speakers by other speakers or by the audience will not be permitted. Questions may be asked by the members of the panel conducting the hearing. I may ask clarifying questions. Anyone present who wishes to ask a question at the hearing may submit the question in writing to me through the registration desk. Any question which pertains to the purposes of this hearing will be passed on to the chairman to be answered if time is available. If you, as a member of the audience, need assistance in formulating your questions or seek more information, contact the people at

the registration desk.

As specified in the Federal Register Notice, individuals who did not make advance requests to speak may register to speak at the registration desk. An opportunity to speak will be provided if time permits. If there are vacant periods on the schedule, I will request the chairman to fill them with questions which have been submitted, planned speakers who are prepared to speak or individuals who register to speak at the desk today.

Although you may have concerns about a wide variety of issues and activities of the Department of Energy, please let me explain that the members of this panel only have the responsibility of reflecting public concerns expressed at this hearing which pertain to the proposed nomination of Yucca Mountain for site characterization as a potential high-level radioactive waste repository. In order to make the best use of the time that we have, I would ask your cooperation in focusing this hearing specifically on this proposal. I am prepared to revise the closing time for this hearing to assure full public participation.

The agenda, as well as other pertinent documents for this public hearing, is available at the registration desk. I would appreciate it if all attendees sign the log at the registration desk sometime during the

course of the day.

Are there any questions on the ground rules for the conduct of the hearing?

Let me now introduce the Chairman: John R. (Jack) McBride, who is the Chairman of the University of Nevada Board of Regents; and panel members: Dr. Peter Krenkel, Dean of the College of Engineering; and Robert Revert, County Commissioner, Nye County.

Representatives of the Department of Energy are also in attendance at this hearing. The panel members will be calling on DOE to provide information about the Nevada Nuclear Waste Storage Investigation Project during the hearing when the panel feels such information would be important to the issues at hand.

As an introduction to the hearing, the DOE Program Representative, James J. Fiore, will provide further information on the Nuclear Waste Policy Act.

Jim.

MR. FIORE: Good morning. I am James Fiore. I'm in charge of the Department of Energy's Nevada Repository Project in Washington, D.C.

On January 7, 1983 the Nuclear Waste Policy Act was signed into law. This Act establishes a process and a schedule for the development of nuclear waste repositories. This process includes numerous reviews of the Department's

plans, data and documents, by the states, general public, Congress and other federal agencies. There will be many opportunities for issues and concerns to be raised, which the Department must address and include in the development of these repositories.

For the selection of the first repository site, the Department of Energy is required to nominate at lease five sites as suitable for site characterization. By no later than January 1, 1985 the Secretary of Energy is required to recommend three of the nominated sites to the President for more extensive characterization as candidates.

No later than March 31, 1987 the Secretary is to have recommended one site for the first repository to the President, and the President is to recommend this site to Congress. In order to provide sufficient time prior to March 1987 to characterize and evaluate the three sites under consideration for the first repository, the DOE expects to have recommended those three sites to the President by the Fall of 1983. The development of a second repository must occur about three years later than the schedule for the first repository.

Two important points must be emphasized at this time.

First is that a decision on where the first

repository will be will not be made for three to four years. The decision which the President will be asked to make this year will be which three sites will be studied further.

The second point is that there will be more than one repository so that no one state will be receiving all the nuclear waste.

Under the provisions of the Nuclear Waste Policy Act, before nominating any site DOE must hold public hearings in the vicinity of such sites to inform the residents of the area of the proposed nomination of such site and to receive their comments. At such hearings DOE must also solicit and receive any recommendations of such residents with respect to the issues that should be addressed in the Environmental Assessment, which must be prepared and will accompany a site nomination, and in the Site Characterization Plan, which is to be prepared after the approval of the site for characterization.

Later this year there will be additional public hearings to give the public an opportunity to comment on how DOE handled the issues which were raised yesterday in Las Vegas and will be raised here today. This open public review process will continue until a repository site is selected in 1987 and licensed several years later.

The Nuclear Waste Policy Act also requires the Department of Energy to issue general guidelines for

the recommendation of sites for repositories and that these general guidelines be evaluated in the development of the Environmental Assessment and Site Characterization Plan for the candidate sites. Proposed general guidelines for the recommendation of sites for nuclear waste repositories were developed by the Department and published in the Federal Register on February 7, 1983 and were made available to the states and the public. Public hearings on proposed guidelines have been held in Chicago, New Orleans, Washington, D.C., Salt Lake City and Seattle. After considering both oral and written comments from the public, consulting with the Council on Environmental Quality, the Administrator of the Environmental Protection Agency, the Director of the Geological Survey and interested governors, and obtaining Nuclear Regulatory Commission concurrence, the Department will issue these guidelines in final form under the provisions of the Nuclear Waste Policy Act. The DOE must publish the siting guidelines in final form by no later than July 6, 1983.

The proposed siting guidelines are not the subject of today's hearing. However, they are available to facilitate public comment on the proposed nomination of the Nevada site.

As required by the Act, the Department notified those states which are considered to have

potentially acceptable sites. On February 2, 1983 Governor Bryan was informed that the Department believed that Nevada contains a potentially acceptable site on and adjacent to the Nevada Test Site in Nye County. Five other states received similar letters.

I would now like to briefly discuss what work went on prior to the passage of the Waste Management Act.

In fulfilling these responsibilities, the Department has previously examined a full range of alternatives for commercial nuclear waste disposal. In a decision published in May 1981 the Department concluded that the placement in deep-mine geologic repositories was the preferred means of disposal of highly radioactive waste.

By the passage of the Nuclear Waste Policy Act, deep-mine geologic repositories will be constructed at carefully selected geologic formations at a depth of up to several thousand feet. The selection of sites for construction of such repositories requires a careful screening of various regions and the selective evaluation until the specific sites are found which appear to possess suitable natural barriers for the isolation of waste.

Once potentially suitable sites are found, detailed examination will be required, including excavation of shafts down to the proposed repository depth.

The Department has, of course, been conducting investigation of possible sites for respositories for many years. The initial recommendation to consider deep-bedded salt formations for the disposal of radioactive waste was made by a committee of the National Academy of Sciences in 1957. Experimental work was conducted on embedded salt in Kansas in the mid to late 1960's, and the investigation of potential sites in New Mexico began around 1972 upon the recommendation of the U. S. Geological Survey.

After these early studies it was determined that many types of geologic media throughout the United States should be studied in a systematic, broader-based program. As a result, in 1976 the National Waste Terminal Storage Program was established by the Energy Research and Development Administration, a predecessor agency to the Department of Energy, to provide the research and development needed to support the assessment of suitability of several rock formations, including salt, tuff, granite and basalt, as a nuclear waste repository. Sites containing these rock types are located throughout the United States.

Dr. Vieth will surely discuss the work done today on the Nevada Test Site and will explain the proposed site characterization activities.

I would like to again refer to the Nuclear

Waste Policy Act of 1982 and its provision in Section 112, that the Department hold hearings in the vicinity of a site to inform the residents of the proposed nomination of such a site for site characterization. This hearing is being held in accordance with the provisions of the Act.

The Nevada site is being proposed for nomination today for site characterization, not for repository construction. At least three of the five nominated sites will be recommended to the President for detailed characterization. These sites approved by the President for detailed characterization will undergo geologic, hydrologic and geochemical evaluation to determine their long-term performance as a repository. These evaluations will be conducted to support the recommendations by the Secretary of Energy to the President and the President's recommendations to Congress in 1987 for the first repository site.

The President's recommendation in 1987 will be accompanied by a detailed Environmental Impact Statement. The Environmental Impact Statement will not only look at the hydrology, geology and natural conditions of the proposed repository site, but will consider the transportation impacts and the economic impacts of the repository.

There will be extensive public hearings

and opportunities for comments prior to the selection of the first repository site. The current actions associated with the nomination of the Nevada Test Site for characterization this year are solely for site evaluation and not for the construction of a repository and do not involve the placement of any nuclear waste at Yucca Mountain in Nevada.

I would like to stress that the Department is required by the Act to work closely with the states in the development and implementation of the repository program. In addition, I personally and the other DOE people involved in the repository program are committed to soliciting and, most importantly, addressing the concerns of the state and the general public.

Regardless of the requirements and schedules in the Act, the program will simply not be able to proceed unless we do listen and do respond to these concerns.

Thank you.

MR. NELSON: The next speaker will be John Vieth. John is a member of the staff of the Department of Energy's Las Vegas office and will speak on the technical program conducted at the Nevada Test Site.

MR. VIETH: Good morning. My name is John Vieth. I'm director of the Waste Management Project Office with the Nevada Operations Office. It is my office that is

responsible for the management and conduct of the Nevada Nuclear Waste Storage Investigation Project which is looking at Yucca Mountain as a potential site for a radioactive waste repository.

Now, I've been asked to try to make a presentation here this morning to help put some aspects of a repository in prospective and provide some visuals in terms of what a repository is and some of the facets of a repository that are of concern to the general public.

In my presentation today I would like to address three particular areas.

The first one is the definition of geologic disposal and what a repository would look like.

The second area is transportation. Obviously this is a major concern to people, and we like to put it in the perspective as to what care has been taken in the proposal for the transport of radioactive materials and what potential implications it might have.

And the third area I'd like to address is the site characterization activities that would take place at the Nevada Test Site and try to give an indication of what is going to take place over the next three or four years in order to gain the data for us to make a decision about a repository.

Now, the first thing I'd like to talk about

is geologic disposal, what is it and how will it be effective.

If you go back to 1957 when the scientists of the National Academy of Sciences were concerned with the disposal of the radioactive waste, the disposal of it in a stable area was considered to be a primary factor, that is, the stable barriers between the waste and mankind. And the question is, where could that be done?

The earth is roughly four billion years old. Geologic formations were known to have stability for periods approaching a billion years. Precambrian rocks, rocks like the Canadian Shield that extends down into Minnesota and Wisconsin, have been unchanged for periods approaching that kind of time frame. We know that there are salt formations in Kansas, Texas, Oklahoma and New Mexico that are cambrian in nature. That means they are somewhere in the neighborhood of 450 to 500 million years old, salt which is soluble in water. The fact that its presence is still there was a strong indication of the stability of those formations. So disposal of radioactive waste in a geochemical medium was considered to be a viable way of disposing the waste to establish a physical barrier between the waste and mankind.

Now, what does a repository look like?

This is a shot of what a repository might

look like. This is taken from the test facility that was built on the Nevada Test Site in the northeastern corner in a formation in granite known as the Climax Test Facility. It was primarily to make tests using spent fuel elements which produce heat and radiation to simulate a repository to understand the effects of these things on hard brittle rock which would be responsible for forming the structure of a repository.

A repository would look like this. It's roughly -- this one is 1400 feet below the surface. A repository might be located anywhere from 1,000 to 3,000 feet below the surface of the earth.

In this repository or in this area you can see down the center are circular lids on top of holes in which the spent fuel elements are placed. It represents the mechanism by which the waste will be stored in a repository. These things are roughly on ten-foot centers.

A repository would basically be a repetition of tunnels of this type, tunnels which would represent roughly 20 percent of the space in the rock below the surface. This opening is on the order of 15 feet wide. There will be another 60-foot distance between the center of the next center and another one like this would be in place.

Now, after the repository is built, a

repository must remain open for roughly 50 years to assure retrievability in case some factor is discovered in that lifetime -- in that time frame of 50 years -- that might require that the waste be taken out, so the tunnels would be left open essentially for that time frame.

Now, after it's been determined that it is possible to decommission a repository, these tunnels will be backfilled with solid material. In this particular case, since the formation is granite, a material that would be put back in there for sealing purposes would be granite, granite in a particular form, ground up, so that it could be packed very tightly.

Now, one of the things I'd like to address is perception that people have about a repository being a dump. The word "dump" connotes a slovenly-operated, highly-disorganized, vermin-infested kind of facility. On the contrary, a repository will be a highly-organized, well-operated, well-regulated facility such as this for the control of radioactive materials.

The next issue that I'd like to address has to do with transportation. People are terribly concerned that the transport of radioactive materials over the highways and on the rails might represent a significant threat to the health and safety of the whole population.

This is a picture of a cask on the back of

a flatbed truck, a conventional-size flatbed truck, for the transport of spent fuel elements. This particular case here is one of the spent fuel elements that was delivered to that Nevada Test Site for the purposes of conducting the Climax test, which was shipped from the Florida Power & Light Turning Point Reactor outside of Fort Lauderdale, Florida to the Nevada Test Site. Seventeen such fuel elements have been shipped to us. It has come across the country in this type of cask which is licensed by the Nuclear Regulatory Commission.

This shows the cask lifted off of its bed in the hot cells and what is known as the Engine Maintenance, Assembly & Disassembly Building at the Nevada Test Site. This is the largest hot cell in the world, and it's capable of providing the protection once the radioactive waste is taken out of the cask so people can handle it for the purpose of the tests.

At this time the workers are preparing the top of the cask for removal of the spent fuel elements in preparation for its encapsulation. This is to show that these casks are safe to work around. People have protective clothing on as required for operations inside of such hot cells to make sure that the potential contamination is controlled.

This is a picture of the spent fuel element

being pulled out of the cask in preparation for it being encapsulated in a medically-sealed, stainless-steel container for the purposes of the test.

Now, people have had terrible concerns as to whether or not the cask is capable of protecting the radioactive material that's contained in that spent fuel element during its transport. Questions arise, if there is an accident, will this cask prevent the radioactive materials from being distributed into the countryside and representing a significant cleanup problem?

Sandia Laboratories in Albuquerque, New Mexico has conducted some tests for the Department looking at the stability of these casks in terms of protecting the cargo during such accidents. We have a three-minute film that will show the tests that were conducted for the Department, and we'd like to show those right now at this time.

(The following portion of the transcript was recorded via film.)

When transporting high-level radioactive materials such as spent fuel from nuclear power plants, the watchword is safety, protecting the people working with the materials, but, above all, in the event of a violent accident, protecting the public.

Part of this total protection effort is

the testing of shipping containers, casks designed to carry radioactive materials.

In preparation for full-scale tests, engineers at Sandia Laboratories at Albuquerque, New Mexico carried out computer analyses and correlated these results with scale model test data. To more completely correlate the findings of these parts, Sandia conducted four impact tests and a burn test in 1977 and early 1978 for the Department of Energy.

In the first test a truck carrying a 22-ton-spent-fuel cask impacted a 650-pound concrete block at 60 miles per hour. Here's the impact in slow motion.

The cask sustained so little damage, it was cleaned up and impacted a second time, but at 84 miles per hour. The cask also survived this more violent crash with only minor damage.

In the third test a diesel locomotive crashed into a truck at 81 miles per hour. The truck carried a 45-ton shipping cask. The cask's deformation was minimal, and the ability of the cask to contain and shield its radioactive contents was not compromised.

The final impact test had a 74-ton shipping cask carried by a cask railcar crash into the concrete block at 100 miles per hour. This same cask and railcar were then positioned over a pool of jet fuel and subjected

to an engulfing fire much more severe than a fire that might occur in a train wreck. After 90 minutes at three times the duration of current qualification test criteria, surface temperatures exceeded 1400 degrees Farenheit, but inside the cask where the spent-fuel rods would be contained, temperatures were below 300 degrees, not enough to melt the spent-fuel rods, and there was no evidence to indicate that even the combination of the crash and fire would have released excessive amounts of radioactivity into the environment.

These full-scale tests verified analytical and scale-model prediction techniques, and they also demonstrated just how rugged these casks really are.

(End of film.)

MR. VIETH: I think the film gives a fairly photographic presentation of the ruggedness of the casks that would be used to ship the radioactive materials, either a spent fuel or processed high-level waste, to a repository.

I have a few other slides which will give you people a little more time to look at the nature of the damage that was sustained as a result of the crash, and it's basically minimal kinds of surface damage which shows dents and bending of heat-transfer vents and so on.

I'd like to go ahead and address the next

subject, the Nevada Nuclear Waste Storage Investigations Project, and what it is that we'll be doing over the next several years in terms of the site characterization. In order to orient you a little bit as to where we're looking, the Nevada Test Site is roughly 65 miles north and west of Las Vegas, Nevada. That is 65 miles from the city to the gate at Mercury. The distance to Yucca Mountain is roughly 100 miles. Yucca Mountain is on the western boundary in the southwest corner of the test site just north of Lathrop Wells bounding the test site land and the Air Force land. The Nevada Test Site is surrounded on three sides by the Nellis Air Force Bombing and Gunnery Range.

This is an outline showing the Nevada Test Site. The dotted line in black around the area defines the Nevada Test Site. It's an area of roughly 1350 square miles, a land mass that is roughly 10 percent larger than the State of Rhode Island.

The area of interest that we are looking at, Yucca Mountain, is found where the orange rectangle is on the southwest boundary of the test site. This gives a little clearer view of the area of particular interest under Yucca Mountain that we've been examining.

The blue dots on the map would show the bore holes that have been drilled in the mountain to date

in order to get the geologic information about the site. You can see that the area, the teardrop-shaped area, outlined in white covers land on the Nevada Test Site and the Nellis Air Force Bombing and Gunnery Range.

Now, I'd like to talk a little bit about the history of how it is that we got to the Nevada Test Site. As Jim Fiori mentioned, the National Waste Terminal Storage (NWTS) program was announced in November of 1976 in which letters went to 13 governors in the United States saying that we were interested in coming to their state to identify potential sites for radioactive waste repositories.

Back in 1976 the primary function of the program was to develop six repositories by the year 2000. The focus was to identify two sites initially in Salt Lake City for the first two repositories. Now, by April of 1977 the comments that the Energy Research and Development Administration had received was that the screening basis on geologic media should be broadened. People felt that prior land use should also be a viable method for screening sites for radioactive repositories. As a matter of fact, it was brought to the Department's attention that they already had two sites, the Hanford Reservation and the Nevada Test Site, which were already contaminated with radioactive materials, and on that basis they should

consider those.

At the Nevada Test Site the weapons tests of nuclear weapons is the primary mission of that site. The people responsible for the weapons tests have primary claim on the land. So we worked with the people in the weapons site, and by August of 1978 had established an area where we should look for placing a repository, and that was in the southwest corner. An area roughly 245 square miles was considered to be a location which would not represent an interference with the weapons test program.

So beginning in September of 1978 we focused our efforts in the southwest corner, and by 1979, April of 1979, it was clear to us that Yucca Mountain had the best potential for identifying a site for repository within that southwest corner.

Now, there were some other factors at the same time that indicated that the Nevada Test Site in Yucca Mountain would be very attractive for a waste repository. These include the facts that the site was located in a closed hydrologic basin.

The question is, what does that mean? A closed hydrologic basin is one of these unique characteristics in which all the water that falls within that will drain basically towards the center. There is

no major water body or river that could carry any of the water in that closed basin outside of that basin. So basically all the water that would fall in that area would be contained in that area, and basically the water that comes in there is eventually eliminated by evaporation and transpiration.

The second reason was that there was great depths to the water table. It was estimated the distance between the surface and water table was roughly 1800 to 2,000 feet. That provided a potentially significant barrier for keeping radioactive waste out of the ground water.

There were long flow pads between the potential repository and discharge points for the ground water. The material in which the repository would be built is highly sorptive. That means that the material is able to chemically react with elements that are suspended in solution that are in the water. It's like the device one would have in their house in which you can put salt in the top to help take out the calcium. So it's a massive ion exchange.

Another reason is that the land was among the most arid land in the United States, receiving roughly six inches of rainfall a year. Of that six inches, let's say 15 centimeters or 150 millimeters, it is estimated that

only six to eight millimeters actually would penetrate down through the repository. The balance of it would either run off from the surface or be evaporated back in the atmosphere.

The natural structure of the geologic media represented a multiplicity of natural barriers between the waste and man's environment.

Then, finally, the land was already under the control of the Federal Government.

So there were a number of technical reasons why the Nevada Test Site looked like an attractive site.

Now, I'd like to take the time to show you what Yucca Mountain looks like.

Yucca Mountain is that geologic structure which is very close to the top of the slide. You can see a white patch on the edge on the right-hand side of the screen, which represents the crest of the mountain. The mountain is roughly 750 feet above the plains of Jackass Flats and Crater Flats, which bound it on either side, and it slopes gently about six to eight degrees from east to west.

This gives you another view of the mountain taken from a position over Crater Flats looking eastward into Jackass Flats. This is another shot of it, looking from the northwest to the southeast.

So this should give you some idea of the piece of territory that we're looking at.

Now, the question is, how would we locate a repository under that mountain?

One of the things we found at Yucca Mountain is the water table is still fairly deep, roughly 1700, 1800 feet below the surface of the earth. You can see where it says there in blue the water table that represents the location of where the ground water is below the mountain.

We've selected a horizon for the repository in a tuff formation known as the Topopah Hot Springs, which is roughly 1200 feet below the surface, which gives us a separation above the water table of roughly 500 feet.

Studies have indicated over history that there is a variation in rainfall -- say over the last 10,000 years -- which is about 60 percent, and what that indicates is that the water table may increase in height approximately 30 meters or a hundred feet. So we think, in this particular situation, a repository in the unsaturated zone will not be threatened with inundation of ground water.

Again, this is a map showing the location of the bore holes that we've already put in the mountain to gain geologic and hydrologic data. The next step will

be the construction of an exploratory shaft in order to do testing at depth in the horizon that we're proposing. This is a requirement by the Nuclear Regulatory Commission, which says we must do this type of testing before license application is submitted. In this particular case, right above the horizontal light line you can see, G-4, that's an indication of a bore hole, and the blue dot just above it is the location of the exploratory shaft.

This shows it a little bit more at an expanded level. You can see on the diagram to the right-hand side the square is where that exploratory shaft will be located. The bore hole, G-4, is drilled to get stratagraphic data to assure we could construct the shaft in that location, to understand the geologic conditions below the surface.

This here shows the drill rig in place actually drilling that hole. Slightly above the rig you can see a white dot. That is roughly the location of the exploratory shaft, roughly 300 feet away from the exploratory drill hole.

What is an exploratory shaft? An exploratory shaft will be a mechanism by which workers can get to the horizon of interest and will be mined to roughly 14 feet in diameter and will be lined with concrete so that the inside diameter of the exploratory shaft will

be roughly 12 feet in diameter.

The exploratory shaft will be dug to a depth of around 1600 feet in order to gain some information about the area below the repository. The horizon of interest that we're looking at is roughly 1150 to 1200 feet, and we will not know exactly where we are going to break out until we get down in there and are able to see the rock firsthand.

At the bottom of the exploratory shaft, what will we be doing? There will be a number of things. On the way down we will be taking ground water samples, and that is to be able to age date the water to try to determine the velocity in which the water is moving down from the surface through the horizon of the repository and onto the water table. In addition, we will be drilling bore holes roughly 2,000 feet in length in a horizontal line out of the bottom of the exploratory shaft to understand the continuity of the rock throughout the area. This will be important for understanding how we design the underground structure and to have some idea of the potential of the isolation capability of the repository.

In addition, there will be a number of other experiments that will be conducted in a facility that has this general outline. This is as if you were on the surface of the ground looking down at the excavation

that would be made roughly 1200 feet below the surface. It shows different tunnels for different kinds of tests. We will be making tests on the permeability of the rock to understand how fast the ground water may be traveling. We will be making tests on the rocks to understand what their stability will be in elevated temperatures.

Now, what are some of the other siting issues that still have to be addressed? What are the things that we will be doing in site characterization in order to get information to make judgments? We've identified a number of things.

The volcanism. We've known from the very first day volcanism is the potential for volcanic eruption at the site. We know that Yucca Mountain was created by volcanic activity in the neighborhood of 15 to 12 million years ago.

Tectonics, the various forces that would be pulling the site apart or pushing it together. There is evidence those activities are going on, and they will be investigated.

Seismicity is the movement of the earth resulting from movement along faults. In our particular case we know that the site is tectonically and seismically active. We have to evaluate the effective ground motion, both from two sources, the natural seismicity and the

manmade seismicity associated with the weapons test on the site. In addition, we're looking at the ground water, both in terms of the travel time and the flow path.

These are important factors which the Nuclear Regulatory Commission will consider in the licensing of a repository. Finally, since we will be locating the repository in the unsaturated zone, we must understand how the water moves in that area. So I'd like to show you a few slides that represent each one of these factors that we will be looking at.

The first one is the basaltic volcanism. If one stands on the crest of Yucca Mountain and looks westward into Crater Flats, one can see cinder tones like this, which indicates the basaltic volcanism 1.1 million years old.

In the process of bringing this study to a conclusion -- and it looks at the present time like the site is very stable with regard to volcanism -- the studies indicate that there are potentially one part or 10 to the eighths or one part-10 to the tenths. I know that's very potentially confusing words, but it indicates that the potential for volcanism is fairly remote.

In addition, we're looking at the faults in part of the tectonics. In this particular case the paternary faults -- that means the faults that occur in

the time frame of the last million-and-a-half and two million years -- have been identified on the site, and we're evaluating them in terms of the potential seismic effects they would have at Yucca Mountain and the last time frame of their movement. A seismic network has been established that is measuring movement along the faults, various places throughout the surrounding area to identify where the centers of earthquakes exist so that we will have a reasonable record of recent activity with regard to seismic activity. In addition, there will be trenches that will be dug across the fault. The purpose is to gather the material that is coalesced in the movement, and we will provide information with regard to the date of the last movement along the faults.

A major activity that we have is drilling bore holes. The purpose of the bore holes is to be able to get information about what is below the surface. We know that the surface of the earth is opaque, and one cannot see below it, so one's understanding of what is below the surface comes from such activities as these bore holes. The major product of the bore holes are core, and these core are used to construct figures like this that explain what are the various strata where they are located and how they're distributed across base underneath the surface of the earth. In addition, bore holes provide us

the opportunity to make measurements about the hydrology.

This slide is a representation on a regional basis. You can see the outline of the Nevada Test Site in the upper left-hand side of the picture. You can see where the ground water is and what its relative height above mean C level. The pink represents lines of constant distance above B and C level for the water. And it indicates that lines perpendicular to those would indicate the direction in which the water will be flowing, and it will be important for us to know that on a much smaller basis, regional basis around Yucca Mountain, so we can define what the direction of flow of the water is and how fast it would be moving away from a repository site. In addition, we are trying to understand the movement of water in the unsaturated zone. Since there is a very small amount of water in the unsaturated zone, it is important to understand how much is there and how fast that is moving downward toward the water table before it can be carried away to the accessible environment.

One last thing I wanted to talk about was the potential schedules for conducting these things. According to the Nuclear Waste Policy Act, the President must make a recommendation to Congress on the first site by March 31, 1987. If we work back a little bit by that, assuming that the Secretary of Energy might have to give

the President about 60 days to make a judgment about what he's going to recommend to Congress, that means about mid-January is when the Secretary must send the letter to the President. The law also requires that the governor of the state be notified roughly 30 days before this happens. So that means the governor would have to be notified around mid-December, and that means the Department has to make some decision, maybe the end of the year roughly in the November time frame of 1986. So that's one set of boundary conditions.

The second set has to do with the starting time. We would see nomination potentially by September of this year. It's absolutely necessary for the site to be nominated before it can be recommended, and it's absolutely necessary that it be recommended before you can construct an exploratory shaft. And the Nuclear Regulatory Commission, under Rule NFR Part 60, indicates that the data from the exploratory shaft must be available in the license application. So it's essential that in order to have at least three years worth of time to construct the shaft and do the experimental work, the recommendations must be made sometime in the near future.

So with that, I'll bring my discussion to a close. I wanted to address three things today. Things that I covered were a little bit about geologic disposal

and what a repository might look like; second, we've looked at transpiration and the potential threat that that means and the things we have done to try to mitigate those threats; and third was to describe what are the site characterization activities we would be conducting over the next couple of years in order to get the information necessary to make a decision.

With that, I'll thank you for your attention.

MR. NELSON: Rather than take a break at this time, since we're a little bit ahead, I'm going to proceed and introduce Jack McBride, who will begin the public portion of the presentations, and then he will pick a time for a break and lunch, and we will have the rest of the scheduled presentations.

Jack.

MR. McBRIDE: Thank you.

We have a request to move up a gentleman here, so if James Barnes can step forward, we will bring his presentation now.

MR. BARNES: Mr. Chairman, members of the Panel:

I appreciate the opportunity today to express, on behalf of Governor Richard Bryan, his views on this most critical issue of high-level nuclear waste

disposal.

I would like to state at the outset that the State of Nevada and my office have had a particularly good working relationship with the Nevada Operations Office of the U. S. Department of Energy, and I expect this relationship to continue.

As most of you are aware, the State of Nevada is no stranger in the nuclear arena. Aiding the national defense and security, Nevada readily accepted the burden of the above-ground nuclear weapon testing program during the late 1950's and early 1960's. As a result of the Nuclear Test Ban Treaty of 1962, these tests were moved underground, where they continue to be conducted, with the most recent being last Saturday. As a state, we recognize our responsibility in the interest of national defense and security.

We also have provided the site for one of the nation's three low-level radioactive dumps at Beatty, we have done this for the past 20 years, not without its various attendant problems and expense to the state.

We have numerous concerns about the safety of Nevada citizens in regards to the transport of these hazardous wastes and are in fact currently involved in litigation aimed at closing the Beatty dump.

Yet at the same time we recognize our

obligation to share the burden of low-level waste storage on a regional basis and are currently reviewing legislation which would make Nevada part of the Rocky Mountain Compact.

For the past three decades, Nevada, more than any other state in the country, has shouldered a tremendous national burden in the nuclear field. Nevada has been proud to accept its responsibility and is continuing to this day to fulfill this responsibility. Now Nevada is one of six states being considered as the site of the nation's first high-level radioactive waste repository. The Governor has made his position on this issue very clear; Nevada has done more than its share for the nation in accepting its obligation in the nuclear arena. The Governor is unalterably opposed to the placement of a high-level radioactive waste dump, either temporary or permanent, within Nevada. This position is based upon two circumstances. The first is this historic nuclear activity in the state of which I just spoke. The second is that Nevada does not generate any of these waste materials. In fact, the western portion of this country generates a very small percentage of these waste materials compared to the midwestern, northeastern and southeastern portions of this nation. It seems unfair, from the Governor's perspective, that, of the six sites under consideration for this repository, at least three are in the west.

It also is unfair for the rest of the nation to ask Nevada, in light of its past and present responsibilities in the nuclear field, to once again assume a new burden.

The Governor has already gone on the record regarding this issue. If the Federal Government selects Nevada as the site for the nation's first high-level nuclear waste dump, he will exercise his veto power over that selection. Nevada does not want a high-level dump site within its borders.

Historically, the State of Nevada has analyzed this issue from a policy prospective only, as we have not had the capability to review and interact on technical issues. We have recently received federal funding to establish this capacity with the Nevada Department of Energy.

I believe this technical review conducted by Nevadans is critical. As Governor of this state, Richard Bryan has a responsibility to see that the environmental impact of such a proposal is fully studied. We in Nevada are opposed to a dump site here on political grounds, but we also have technical concerns which must be addressed. What are the potential risks to the air we breathe, the water we drink? How will transportation lines for this dangerous cargo be protected? These questions

and many more must be answered.

The Governor and key members of the Nevada Legislature were formally notified by the Secretary of Energy of DOE's intent to nominate a site in Nevada earlier this year. I would like to turn now to address issues associated with the Environmental Assessment and Site Characterization Plan.

First, we have requested, and DOE has agreed, that, in order to provide for additional opportunity for public involvement, a second series of public hearings will be held in Nevada between the issuance of the draft Environmental Assessment and the final version.

Secondly, I urge that the public comment period regarding the draft Environmental Assessment be open long enough for the state and public to know the comments and recommendations of the Nuclear Regulatory Commission on the proposed siting guidelines and their impact on this Environmental Assessment.

Thirdly, I urge that the DOE conduct, within the state, public informational meetings on an annual basis in order for the public and others to be briefed on the status of the site characterization activities and to ask pertinent questions related to these activities. The State would be pleased to interact with the DOE in the development of these forums.

There are several specific issues that I believe should be addressed in the Environmental Assessment and/or Site Characterization Plan. These include:

a. A comparitive analysis of the Yucca Mountain site to the other proposed sites on such factors as transportation costs and risks, ground water travel time and flux, seismic activity and the potential for renewed volcanism;

b. An analysis of rail versus truck transportation to the site;

c. An analysis of water consumption and acquisition related to the exploratory shaft construction;

d. An examination of impacts on air quality both at the site and in Clark County and a discussion of mitigation strategies relating to the construction of an exploratory shaft;

e. A plan for the disposal of the excavated materials from the exploratory shaft and an analysis of the impacts from chemical leaching; and

f. Plans for mitigation of possible impacts to the archeological sites that are

present.

I expect that the more critical geologic and hydrologic issues will be sufficiently detailed and examined by DOE and that this examination process will be described fully in these documents.

These are some of the more important issues that I think should be addressed by DOE in the Environmental Assessment and Site Characterization Plan for Yucca Mountain. The State fully intends to submit detailed written comments within the comment period and will closely review and examine how the DOE has addressed these issues and how they will respond to the comments made by Nevadans here today.

I thank you very much for the opportunity to address the panel, and if you have any questions, I'd be glad to answer them.

MR. McBRIDE: Do you have any questions?

We're a little bit ahead of time, so I'm going to continue with the presentations if the individuals are here.

I would like to call on Joseph Robertson now if he's present.

MR. ROBERTSON: Mr. Nelson, Chairman McBride, members of the Panel: I'm Joe Robertson, Reno, Nevada, member of Citizen Alert. I'm an ecologist. Many of my

concerns have already been addressed this morning, but I will say we will probably illustrate the concerns of many of the people who are not here. I have certainly gained new insight into the impossibility of balancing the federal budget.

Let me begin by asking really why are we here? Is it because we have defied the laws of ecology? Is it because we have encouraged our scientists and politicians to defy Mother Nature? We are riding a tiger. We have a bear by the tail. These are very unnatural beasts of burden. Does nature really know best after all? No radioactive nuclear waste is produced by nature. No plutonium. No dioxin. No crysillic acid.

Now we are gathered to scheme how best to deal with another law of ecology, namely everything has to go somewhere. If there is no way out, then we cannot escape the penalties of the fourth law, which states, "There is no free lunch."

Who pays for our mistakes, and what form must the payments be made at what rate of interest? How long can payments be put off? Must we burden all future generations and even now continue to add to the bitter legacy? Our dilemma is so inescapable because of the first law, "Everything is related."

Rad waste is a product of the fear, greed

and preparation for war. It is related to climate, to coal, to our economy, to our geology, to our hydrology, to politics, to sovereignty, to survival, possibly to homicide. Mileage shipped and frequency of accidents are also related. Rad waste has to go somewhere or, better yet, remain where it is.

A test site is far distant from the major domestic and foreign reactors at present and in the foreseeable future. It's over 900 miles, perhaps a thousand miles, by road from Richland to Hanford. It's about 900 miles from Trojan to Vanier. Before Yucca Mountain is chosen as a storage site the following questions demand consideration.

What will be the necessary average and maximum haulage distances and frequencies of deposit?

What mode or modes of transportation will be best?

How many cargos of radiated fuel will be on the highway at one time?

How many truck miles will be logged by the year 2000 at the current rate of reactor radiation?

If by rail, how much new line will be necessary? Will it require special security, and who will build the rail line and maintain it and foot the bill?

Will rad waste pass through Reno? If so,

how frequently? How will increasing frequency increase the probability of accident? What would be the adverse effects of radiated fuel spillage in Reno or upstream on the Truckee River? All family insurance policies exclude nuclear accidents.

Will it be necessary to train standby cleanup crews? If so, what would be the nature of the training of the cleanup operation? Would it be fully insured? If yes, by whom and with what exclusions? Might the $560 million maximum federal insurance be too conservative? For example, a four-million-dollar loss would be covered only 14 cents on the dollar.

Remember last year the collison of the truck in Oakland Tunnel causing a holocaust? Doubtless the fire was of greater intensity than the 1400 degrees of the test specifications.

Let me cite some more examples of accidents.

The cloud burst in 1960 carried debris onto the Southern Pacific Railroad track derailing seven cars. This is a million-dollar accident. Could this have been more than a million-dollar accident if nuclear waste rather than automobiles had been on board? Could the containers have ruptured allowing the flood to wash the waste into the river? Might this have serious effects on Pyramid Lake? What effect would a similar accident have

should it occur above Reno between Donner Lake and Verdi? How seriously and for how long would the Reno water be contaminated?

How many manufacturers are making containers for the transportation? Are they all made like the one container of the kind we saw? Are less than a dozen inspectors in a material transport bureau sufficient to assure that we do not have containers breaking when there's falling off of trucks or trains in the canyon and bouncing over boulders toward the river, impacting on points less than six inches in diameter as referred to in the specifications?

Another example, on March the 24th of this year a Santa Fe freight derailed 23 cars in the Highland Park area of Los Angeles. On the same day another 23 freight cars derailed in Flat Rock Tunnel just west of Philadelphia. Sulfuric acid and fish oil were spilled. A thousand gallons were seeping into the Skykill River. Intakes on Philadelphia main water supply were closed for 12 hours. How much more serious would it have been if high-level radiation material had been spilled?

The next day, March 25, a school bus approaching Little Rock overturned at the intersection of two Arkansas highways. Ten students and teachers died. Might such accidents happen to a truck hauling rad waste?

A week earlier many deaths and injuries occurred when two tour buses from Reno collided on I-80 near Auburn, California. Might a truckload of radioactive fuel come to a similar end, or is it generally that students and tourists do not merit the safety afforded to rad waste containers?

Laying on extra guards normally enhances safety and/or security, but not always. Recently three of the security people were killed in a head-on collison with California police on a mountain road.

Just the day before yesterday a truck hauling a leaking drum of crysillic acid was apprehended here in Sparks. The Navy was shipping it from Hawaii to Hawthorne. It was mislabeled. Crysillic acid is a poison used in metallic sulfide flotation. In concentrations in water of one to seven milligrams per liter it is lethal to salmon and other species of aquatic life.

Britain has no Yucca Mountain. Does the Department of Energy have any more to learn from other nuclear powers about radioactive waste processing, transportation and storage? Are our containers as safe as those of our allies? Is dry storage on site not more feasible and safer than our current long-haul strategy?

The production of high-level radioactive waste should be stopped. Stockpiles remain in place until

its creators find a better solution than, "Here. You take it off our hands."

Thank you.

MR. McBRIDE: Thank you, Mr. Robertson.

I would like to ask your cooperation in not interrupting the speakers with applause. We're trying to conduct a meeting where very serious matters are being considered. We want to take notes on this. At the end I have no problem if you applaud a speaker, but during his presentation let's keep the issue. I'd like to hear what the people have to say.

Mrs. Jeri Robinson.

MS. ROBINSON: Good morning, fellow citizens and concerned humanitarians, genlemen of the Panel: I think the assumption has been made that Nevada is delighted with the nuclear testing site. I don't think that we are either proud of that record or even happy to have it in Nevada. Let me assure you that this even increases our concern as a possible locale for reposing high-level nuclear waste.

What is high-level nuclear waste? I do not find a definition anywhere in your paper. Will they vary as time goes on, or does the licensure by NRC specifically enumerate and describe what that high-level waste will be? Would one of you gentlemen care to answer

that question?

MR. McBRIDE: Mr. Vieth, would you care to find that for her, please?

MR. VIETH: Yes.

Radioactive waste basically comes from fission of atoms of uranium. Basically that is the division of an atom of uranium into two new atoms. The waste atoms now are basically those which have an atomic number of less than 92, and there is a full spectrum across 0 or 1 to 92.

Since the elements are radioactive and are continually decaying, the composition of radioactive waste from the time it is created in a reactor until, say, it would be buried in a repository is continually changing. We can give you a chemical analysis of what the various elements are as a function of time, but right now I cannot define exactly what fraction of each radioactive element would be in the waste. We can tell you what various times, say, five years after the spent fuel is out of the reactor, ten years after, what would the waste be composed of, but it is basically elements, isotopes, that are radioactive and would be encapsulated eventually in some solid material such as a glass. I hope that answers your question temporarily.

MS. ROBINSON: Thank you.

As you have indicated, fissionable materials can break down into secondary materials, which could recombine to become corrosive agents. What studies have been made regarding container integrity within the repository? May I have a response?

MR. McBRIDE: Do you have a number of questions? If you do --

MS. ROBINSON: Some are academic; some are more or less response-type questions.

MR. McBRIDE: Mr. Vieth, if you would, please.

MS. ROBINSON: I didn't see anything in the film that indicated that type of study has been done.

MR. VIETH: The film this morning primarily dealt with the problems of transportation, that is, the concern of accidents.

Studies have gone on for a number of years to define what kind of materials would exist in the various geologic media and the various ground water conditions associated with a repository. A fair gamut of materials have been looked at. Plain carbon steel to stainless steel to zirconium and a variety of alloys have been investigated at the present time.

The conditions at Yucca Mountain in a repository in the saturated zone are currently being defined.

The strategy of where that facility would be located has just come about in the last six months. There is a program in place being conducted by the Lawrence Livermore National Laboratory that is evaluating the various alloys with which to make the waste packages, the kind of materials that would service backfills and the nature of the material that would actually be used to construct the waste form. And that is currently my project, looking at Yucca Mountain specifically, and that work is being conducted by the Lawrence Livermore Laboratory, and we'd be happy to provide descriptions of that if you'd like.

MS. ROBINSON: Thank you.

In the paper as prepared by the USDOE, we find great concern that the site be safe for a minimum of 1,000 years, hopefully for 10,000. If the halflife of plutonium is 500,000 years, 10,000 years does not really seem reasonable for a repository site. On the other hand, the atomic bomb was unknown 50 years ago. Can we be assured that research will continue and that there will be alternative measures adopted at some future point to eliminate the need for the repository? I think you indicated in your presentation that the 50-year period would be considered in maintaining the shaft as open, so that in the event that scientific development had increased at that point to find reusable materials that were reusable

and so forth, that could take place, but is 50 years the absolute outside of what you would consider as potential research, or will this automatically continue? Do we know that? Do we have a guarantee of that?

MR. McBRIDE: I would like to ask, if you have questions like this -- our problem really is that we have to take the presentations and then consolidate these from both places. It makes it very difficult for us to try to do this. We want to answer every question you have, believe me, but it's preferable for us if you could write them down, and we will have them answered in groups.

MS. ROBINSON: I noticed in the presentation that at one point in the proposed test repository there was an indication of something called the no-name fault. As we all know, this particular geologic area in Nevada is very much subject to faulting, and I didn't see any indication in the presentation by the USDOE that we had a specific measurement of how far from a fault area or what magnitude of faults might be considered in presenting your repository site.

I'm also curious why the young and unstable West geologically would be chosen as opposed to the old and very stable East.

We find that great stress has been placed by the government on food, drug, water and sewage standards.

What about the concern for terminal pollution? We are not talking about a reversible situation here. We are talking about a site that will be contaminated forever.

Have we done studies about types of base ores, et cetera, to determine if, for instance, ore from Chile or ore from Canada would have the same properties in this regard? Why is the government so concerned with nuclear defense from an external source when it is obviously unable to prevent the devastation from nuclear waste within? How many people who are doing the research and planning of these repository sites are actually property owners or actually live permanently in Nevada? These people will probably not have heirs who must deal with the ultimate results of these repository sites in Nevada.

What are the requirements of licensure by the NRC in terms of length of time? This is another thing I did not see addressed in the paper. Are we talking here about you've opened the repository, and, therefore, it's yours forever from one license, and that license is not ever revocable or changeable or determined by a length of time? I did not see that concern.

I realize that the waste we've already produced is not going to disappear. As we continue to produce it, neither will the problem. Why not stop

producing nuclear waste until a safe means of disposal is available. Meanwhile, why not include, as a part of licensure by the NRC, a fee to cover the cost of transportation of storage containers and the cost of construction.

Also, I was very interested in the report as to a term, "One metropolitan unit," in determining the apparent inhabitant percentage of an area. I wonder if someone would give us a definition of that. Does this measure the life style of the people? How is it determined that certain sites on the test range would be precluded from further consideration due to the proximity of potential nuclear testing areas and that Yucca Mountain would not be affected by the same criteria? I think here we have a Catch-22 situation. We have a state that is already overburdened with nuclear testing and contamination from nuclear sources. I think we have a government who is far more concerned with putting all their eggs in one basket.

Thank you.

MR. McBRIDE: We will now take our ten-minute break and then continue with our presentations.

(A recess was taken.)

MR. McBRIDE: I have some requests for specific times. I'll do my best within what I have

available here. As of now, we will plan to run a little bit beyond into the lunch hour and perhaps go as far as 1:30 or so, so we can get more people in. I would like to make the announcement that I was to make earlier, and, for the sake of time with Mr. Barnes' schedule, I deferred until now.

As Mr. Nelson told you earlier, we are not employees of DOE. We have no allegiance to DOE. We are here as private citizens to listen to your comments, to take the record as it's being generated, to consolidate that into a report using the information presented to us in both Las Vegas yesterday and here today in order that the Department of Energy will have the information that you have provided in a succinct manner in order to address those in the development of their Environmental Assessment and Site Characterization Plan. That's one reason I would like to have you speak to the issues directly and to withhold applause until the end, because we do have a hard job. We have a bunch of notes we have to take, and we want to be correct in evaluating or at least translating what you have said to the DOE.

As you know, Bob on my left here is the County Commissioner from Nye County and lives in Beatty, and he's a native Nevadan, by the way. I've lived here for 25 years in Las Vegas, so I feel like a native anyway.

I've raised six children there. And, of course, on my right is the Dean of Engineering, Peter Krenkel.

So we're here to listen to everything you say, and if I appear autocratic at times, I hope I'm not, but we have to have certain rules, and that's why I ask that instead of asking questions, interrupting conversations, it's much better for the flow if you could write those down, and we will see that they are answered by the appropriate DOE official.

With that, we will continue, and now here's Katharine Gardiner Hale.

MS. HALE: Gentlemen and gentlewomen: I am Katharine Gardiner Hale, a resident of Nevada for 22 years, co-founder with Susan Orr in 1975 of Citizen Alert, concerned citizen, patriot and housewife.

Apart from the testimony I will give, I will also yield some of my time to read into the record the names of people who support the following statement:

"We are against the storage of high-level nuclear wastes in Nevada."

Supporters of the above statement are: Sue Wagner, State Senator; Randolph Townsend, Assemblyman; Janson F. Stewart, Assemblyman; Steve C. Francis, Assemblyman; Michael Malone, Assemblyman; Bob Thomas, Assemblyman -- both Mr. Malone and Mr. Thomas wish to go on record as also being

against the storage of low-level wastes in Nevada -- Jim Schofield, Assemblyman and Speaker Pro Tem of the Nevada Assembly and sponsor of AJR11; Peter J. Sferrazza, Mayor of Reno; Ronald W. Player, Mayor of Sparks; Bob Rose, former Lieutenant Governor of Nevada; Jim Santini, former Congressman of Nevada; Thomas R. C. "Spike" Wilson, State Senator; Brent Adams, Chairman of the Democratic Party of Nevada.

Each of the leaders whose names appear above understand that this reading is separate and apart from my testimony.

Nine years ago I read the EIS on storage of nuclear wastes at NTS, masses of reports and pamphlets on the subject, and literature from both the Atomic Energy Commission and from opponents of nuclear power. I weighed the information and decided that Nevada should not store nuclear or radioactive wastes of any kind from any other state. Nevada has commercially stored nuclear wastes at the Beatty dump site since 1962 under the auspices of Nuclear Engineering Company (NECO). NECO has changed its name to U. S. Ecology. The Atomic Energy Commission changed its name to Energy and Research Development Administration and from that to the Department of Energy. With each name change the new agency has largely avoided responsibility for the actions of the previous

administration. The industry is historically irresponsible.

Time today prevents me from detailing some of the many unscientific methods practiced by those in charge of the rad-waste management programs in the last 26 years, since the first reactor in 1957 in Pittsburgh, Pennsylvania.

My testimony consists of questions to which I expect full and complete answers before any decisions are made about rad-waste storage.

1. Why do the various studies written on radioactive waste management use English as a second language instead of simply writing in English? The common people will be affected by the written decisions for 500,000 years and it should not be expected to learn a new language, rad-speak, to get straight answers.

2. What exactly will our wastes be? Spent fuel rods? Reprocessed fuel rods and their resultant acid baths? Will the wastes of the nation be railroaded here? Will other nations' wastes be shipped to Nevada?

3. Why were 81 reactors built and 77 more orders for reactors accepted when no solution has been found for the waste problem?

4. Why, given that insanely irresponsible and backward approach, should we trust DOE to have any more of an eye to the future than did DOE's predecessors?

5. Will our acceptance of high-level nuclear wastes create the kind of precedent that will cause Nevada to be on-line for dioxins, PCB's and other chemical wastes which are beginning to bubble to the surface of our land? Also, when the nuclear fission reactors have each reacted their 40-year life span and must be decommissioned, will they too be buried in Nevada? Who will pay that billion-dollar bill?

6. How will the records concerning waste disposal be kept? No government has lasted 250,000 years. How will DOE mark the land in question -- Yucca Mountain and environs -- that it be held sacrasanct in perpetuity?

7. What time frame is DOE considering? 250,000 to 500,000 years? More? Less? Does DOE wish to retrieve this material sooner for fuel if nuclear fusion becomes feasible?

8. How seriously have these factors been considered:

A. Location of existing fault lines and fissures created by years of above and below ground testing?

B. Existing caldera which indicate developing volcanoes?

C. Climatic changes? In 100,000 years we might return to a pluvial climate

which would result in the flooding of the now allegedly unsaturated tuff in which you wish to make your radioactive deposits. Consider the long time frame and the potential for rising ground $H_2O$ tables and the migratory habits of radioactive isotopes in liquid.

9. Terrorism. How much land do you estimate will need to be sealed off for security reasons? Over 87 percent of Nevada is already government land. Will you need the final 13 percent, or is that too sarcastic a query?

10. What are your perceived containers for the wastes? Existing lifetime containers have atrophied and leaked both on land and in the oceans. What waters or salts are under Yucca Mountain?

11. Millions of dollars have been spent on feasibility studies at Yucca Mountain. How much has been spent at the other potential sites? Who is paying for these studies?

12. Cancer. That's not a question, just a word we cannot leave out or avoid.

In conclusion, my recommendation is that you leave the wastes where they are, on site near existing reactors in the states that have benefited from their energy. There the wastes will be retrievable. There the

wastes will not be "out of site, out of mind."

To my mind, keeping the wastes at their current sites will let the nuclear fission industry die a natural death, something that we may not be allowed by them. The industry has shown itself incapable of existing in a capitalistic system, having depended upon government subsidies since Day 1 (Price-Anderson Act, 1955).

If individual reactor companies cannot afford to buy more land on which to store their cooling vats of spent fuel rods, then why on God's green earth should we give them our land? We have paid for their research, development, insurance and cleanup, and it's just getting too expensive.

No matter what you offer Nevada in the way of monetary recompense, gamma tax or no, we will not take the gamble. Nevada has had her bowels ruptured and her skin surface scarred. Nevada has done her duty. Nevada is not a wasteland. We have far more to offer in terms of profound beauty, patience and silence. Don't waste our state.

Thank you.

MR. McBRIDE: Since a couple of speakers have the same question, I would like Dr. Vieth to answer the cost of who's paying for it. I think you may have explained that already, but maybe you need to reiterate

who's paying for cost storage, et cetera.

MR. VIETH: Since 1976, when the NWTS program was initiated, the funds to conduct the geologic exploration program, do the engineering studies and develop the waste packages have come out of the taxes of the general revenue. In 1976 the budget for the program was roughly 35 million dollars. I think that by 1983 that budget will have gone to -- I think the total budget for the program is over 300 billion dollars. The integrated amount of the money spent over that time is roughly in the billion, 250 million dollars. Somewhere in that neighborhood. I do not know the exact figure right now.

When the Nuclear Waste Policy Act was passed, it established a tax of one million per kilowatt hour on electricity generated by nuclear power. The revenue from that that will be generated, I think, is in the neighborhood of 350 million dollars per year. So that at the present time is still in excess of the budget on the yearly basis that we have right now.

Congress, the highest democratic body, legislative body, in the country, established the framework by which the funding of those activities would be covered, and the philosophy was that the people that received the benefit would be responsible for picking up the costs.

MR. McBRIDE: Thank you.

We have a request from William Bernard, I assume it is, who wanted to come on before 1:00.

MR. BERNARD: Mr. Nelson, members of the Panel: I'm here as a private citizen. I'm also working in the underground mining industry, and there is a lot of questions regarding the technical aspects of putting this underground that I would like answered.

For instance, ground support. There were rock bolts. This is supposed to be good for 50 years. There is a maintenance required for this type of ground support, and I'd like to know if the underground mining workers will be affected by this continued maintenance underground and if any provisions have been made for their protection.

Also, Dr. Vieth, when you're showing us your slides of the transportation, they're impressive. It's nice to see these casks can survive all this, but in Beatty it was found that a lot of wastes were not packaged properly, and I want to know what steps DOE plans to take to see that they are packaged properly.

As an underground miner, it's really nice to know there is going to be a lot of work in Beatty, but just as in Alaska, who will be responsible for the unemployment costs when the boom is over? Nevada is a boom and bust state now, and I've seen enough boom and bust to

know that it's going to cost the state a great deal.

Once this repository is built, there is going to be a great deal of waste coming from all over the country to Nevada. Will there be a schedule for these wastes to be inserted in the ground in a timely manner, or will a holding area have to be built above ground to store these until they are deposited?

Also, if reprocessing becomes, let's say, politically feasible, will there be a reprocessing plant built on the site also? Are there any restrictions on further use of this repository in the area of reprocessing or in exhuming all these things later? Fifty years to me does not seem to be a sufficient amount of time to investigate all the possible dangers from this type of disposal.

In the east right now there are allegations of organized crime involvement in low-level nuclear transport, and I'd like to know if there are any provisions -- Nevada has always been, let's say, the site of criticism regarding organized crime, and are there any safeguards to keep these less-than-adequate companies from taking part in this?

I'd also like to know if there's a set volume of storage for the nuclear repository, and if not, how do you propse to expand the repository once you've

already deposited some of the spent fuel in it, and will that mining affect the material already stored?

About the only other thing I have to say, I came to Nevada because of the people. They're an independent people. They're a proud people. We have always done what I feel is our share. In the '50's and '60's school children were ushered outside to see the nuclear bomb tests. They're feeling the physical effects of that now. I want to know if in the '80's and '90's our school children are going to have to hide in the school and in their homes while the government passes through their town with these nuclear wastes.

Thank you.

MR. McBRIDE: Do we have Susan Orr?

MS. ORR: Good afternoon. I'm Susan Orr. I'm on the board of Citizen Alert, Citizen Alert which was created eight years ago when the initial nuclear waste storage facility was proposed for the State of Nevada. I am no longer working for Citizen Alert. I'm now working in another area. However, I couldn't resist the opportunity to come back and see everybody again.

I'm going to trust that other people on the roster today have dealt with questions of responsibility for the wastes at the source, questions of emergency services, security along the highways, transportation, geology, water,

et cetera, in the way of technical questions and social questions.

My message is simply that I think it's time that we take this middle-class albatross from about our necks. It's been nearly 40 years that the question of nuclear waste disposal has been being researched. I've only been working at it for eight years, and I'm frustrated at it. I really feel sorry for the fellows that have been working on it for nearly 40 years. I think that their ability to think creatively must have narrowed some. I think also that it is time for us to be allowed to call it what it is, an albatross, and the whole system, not just nuclear wastes over here and nuclear power over there, and question it and talk about it as such in the draft EIS.

In 1974, when we first addressed the issue, we were told that questioning the nuclear power industry as a whole was not to remain to the question of nuclear waste disposal. I think that if we're not allowed to question it as a whole, you're going to see us here again in three years and in five years and in eight years and on and on and on. I think that we're doing a circle dance here with the Department of Energy or AEC or whoever it happens to be sitting over there saying, "Well, we think we've got an answer now," and citizens over here saying, "Well, maybe you think you have an answer, but you're

putting it in my backyard."

You're dealing with a question which involves 250,000 years of future think. In the last eight years, since I first started thinking about nuclear wastes, the AEC has changed its name from the AEC to ERDA to DOE. We saw a democratic president come and go. We've seen our national debt fall below the floor.

Nevada legislators, who in 1975 invited the disposal of nuclear waste to the Nevada Test Site, have done a reversal. Those very legislators that put us down for arguing that it was not a safe system, this year proposed a resolution to keep nuclear wastes out of the state. On a personal level, in my own family one generation has just about come to an end and a new generation has been conceived. In my front yard a drought killed my front lawn and a perilous bog is now acting like jello.

What I'm suggesting is that political systems and the national economy and the planet and society can change dramatically in just eight years, and what is it that we think we can predict for 250,000 years? What hasn't changed in that time is this circle dance that we're doing.

I think that we need to ask this question about the whole system. In systems theory, if one part is disfunctional, the whole is disfunctional. If I have a

sore throat, my whole body is going to have to muster to heal me. As long as there's not an answer for the nuclear waste disposal question, the whole nuclear industry is disfunctional. And I think that it's the Department of Energy's responsibility not to assume responsibility for nuclear wastes, but to assume responsibility for the industry as a whole, and to consider in the new draft Environmental Impact Statement the question of shutting down the nuclear industry which spends a lot of time being shut down anyway. I believe it's simply unconscionable to allow the continued production of nuclear wastes as long as this question is unanswered. I said that eight years ago, but I still believe it. And I think that we're very lucky that as many plants have spent as much time being shut down and that the industry has suffered as much economically as it has so that the proposed plants -- the plants that were proposed to be built in 1975, most of them have not been built because we don't have eight years more accumulation of waste to be worrying about.

Because the panel is made up mostly of Nevadans, I did have one other comment to make -- two other comments.

One is that the last time we went through this experience our comments were generalized and made into lists and responded to in a very summarized way. We really

deserve the respect of you folks that have taken some time to be here today to consider our comments in depth, to respond to them thoroughly and to convey them to the Department of Energy thoroughly and to have the draft impact statement do more than a summary in its appendix, but throughout the impact statement consider those serious questions that are raised here today.

And the final comment is that while everything that I've said so far really relates on a national scope, to speak as a Nevadan, I have a constant sense of living in an ocean bed here. I think that this state is a symbol of the way things can endure through change, and that to ignore that in this place and fill it with the debris that demands constancy and lack of change is to commit a heresy.

Thank you.

MR. McBRIDE: I might comment on the statement made earlier there, that it is the objective of this panel to do the best we can to represent all of the statements that have been made here today and yesterday. It's not our intent to generalize or to ignore or not to forward to DOE officials those questions and those areas of concern for response, so I just want to make that statement.

We have a question that's raised here that

I'd like to have addressed right now by the DOE representative before the next speaker since it's essentially her question.

Of all the high-level radioactive waste, about 80 percent is defense and 20 percent is commercial. Of the 20 percent how much would the first repository site handle?

MR. VIETH: The volume of waste or the percentage of it may be 20 percent today. The first repository will not be built or likely will not be in existence ready to operate until roughly 1995, 1998. By that time frame, the percentage will change. There will be significant more waste from the commercial side than from the weapons side.

Now, let me try to give you a perspective of the size of the repository and what would be the volume of material that would go into it. A repository will be roughly 2,000 acres underground. About 20 percent of that 2,000 acres will be material that has actually been mined out for tunnels and haulage ways and storage drips. That is those rooms in which the waste will be placed. Now, that represents a volume, say, in terms of tons of spent fuel, roughly the waste from 90,000 metric tons.

That would represent, assuming all the reactors that are in existence now and will be in existence

by the year 2000, assuming the 40-year lifetime, that it would take roughly three repositories that size to accommodate the waste. So there will be a need for more than on repository. The volume of the repository at Yucca Mountain will be roughly 70,000 metric tons limit. So there is some flexibility in terms of a little bit more space to put more, but roughly 70,000 metric tons.

With regards to the waste from the weapons program, if one looks at how much space within a repository, of the 2,000 acres, it will require approximately 40 acres. So 40 over 2,000 is roughly what, 4 over 200 or 1 over 50 or roughly two percent of the volume of a commercial waste repository will be capable of handling the waste out of the weapons program.

Does that adequately answer your question?

MR. KRENKEL: May I ask a question? It might be meaningful if you put that in terms of volume instead of metric tons.

MR. VIETH: Let me refer back to an estimate of how large a volume of waste it would really be.

Several years ago when we were looking at how much waste we would have to handle in a repository, I said we were looking at six repositories. Those six repositories would have accumulated in, say, 1976, all the waste that came out of at that time the 300,000 megawatts

of generating capacity nuclear. The volume that would go into those repositories represented, when converted into a glass, a volume of material roughly 8 to 10 feet deep, which would cover one football field, so the volume of material you're talking about is relatively limited.

Since the generating capacity that we anticipate now is about 158,000 megawatts of generating capacity, roughly one-half of what was imagined in 1976, the volume that we're talking about is roughly half of that football field stacked 8 to 10 foot deep with the glass that has had the radioactive waste mixed in it with it.

Is that a reasonable way of trying to put it in prospective?

MR. McBRIDE: Thank you.

The next speaker is Abby Johnson.

MS. JOHNSON: Good afternoon. My name is Abby Johnson. I'm the program coordinator for Citizen Alert in Nevada.

Citizen Alert is a statewide public-education and citizen-action organization founded in 1975 because of citizen concern about nuclear waste in Nevada. Since then we've worked on a variety of energy and environment issues, and we have retained many of the concerns that we voiced in the mid-'70's about nuclear waste.

Let me state at the outset Citizen Alert's position. We are opposed to a temporary or permanent high-level radioactive waste disposal site in Nevada. We've studied this issue and remain unconvinced that the solution proposed is safe, technically sound and equitable.

According to a recent poll, we are not alone. The KTC In-Market Systems Research Poll conducted March 23rd to 25th of this year in the Reno, Sparks and Carson City area indicates that 75.1 percent of those polled oppose a high-level radioactive waste disposal site in Nevada, 19.1 percent favored it and 5.9 percent have no opinion.

Citizen Alert is firmly committed to providing information on this issue to the public and getting the public involved. For the record, we are submitting of the materials we use to stimulate interest in this meeting. Before discussing our specific concerns about the proposal, we'd like to talk about the importance of public participation. I know that DOE is aware of this because they have issued a technical report called Citizen Participation in Nuclear Waste Repository Siting. Will they be using the outline and recommendations of this report?

It is significant to mention that this is the first time that DOE has held public hearings on this issue in Nevada, although site exploration has been going on at

the Nevada Test Site since 1977. We hope this is the beginning of a new approach by DOE to truly involve and inform the public about the decisions that are being made. We look forward to frequent public hearings and forums announced 45 days in advance. We encourage the DOE to schedule a segment of any public meeting in the evening so that daytime workers may participate without taking time off from work as some have done here today. We strongly suggest, in addition to public hearings, informal forums where citizens can ask questions and learn more about this complex project. Finally, we suggest that poor turnout at public meetings may be a sign of poor publicity and inadequate public information rather than apathy or disinterest on the part of the public.

When we sent out sheets telling people about the hearing and asking them to attend, we also included a sheet on the back where, if they couldn't attend the hearing, could they please return something to us with their comments. They've done so. Thirty-seven people could not attend the public hearing, but wanted to let their opinions be made to the DOE. I will be submitting these to you later.

MR. McBRIDE: Thank you.

MS. JOHNSON: Many of our concerns are in the form of questions or comments. These need to be addressed

in the Environmental Assessment and the Site Characterization Plan. More generally, our questions and concerns need to be addressed by the Department of Energy.

Let me start with nuclear weapons testing. Many people that I've talked with are shocked to learn that DOE intends to continue testing nuclear weapons underground at the Nevada Test Site if the site is chosen as a high-level radioactive waste repository. How can we be sure the waste will be safe from earth movement even when a test goes wrong. The bomb that DOE detonated last Friday was exploded about 30 miles from Yucca Mountain. Perhaps the Friday test was designed to prove that Yucca Mountain will not be affected by nearby testing. These two activities may in fact actually be incompatible. The draft Environmental Assessment should consider a case analysis for nuclear waste including the very real possibility of an acceleration in the nuclear weapons testing program to coincide with the increased defense budget.

Geology and hydrology. Many people wonder whether it is safe to put high-level radioactive waste in the ground in an earthquake-prone area and how the waste will affect ground water over time. We are relieved to read these questions in a report of a meeting between USDOE staff and Nuclear Regulatory Commission consultants in May of 1982 in Las Vegas. We believe it is important for the

public to understand that many questions about the suitability of the Nevada Test Site exists, and these are serious legitimate questions which have not been answered. Some of those questions are:

What is the ground water flow system in the tuffs at Yucca Mountain?

What physical processes will govern the behavior of a repository in an unsaturated tuff?

What factors should be used in characterizing unsaturated fractured tuff?

What is the potential for disruption of a repository at Yucca Mountain by fault movement, earthquakes or volcanism?

Transportation. We have a number of questions about the safety of transporting these wastes over long distances. Where specifically, what cities and states, would the waste be coming from? What would be the frequency of shipments? What mode or modes of transportation will bring it to the site? What Nevada towns and cities could have shipments of waste coming through by rail or truck? What kind of security forces will be necessary to protect the shipments from sabotage? Who will pay for this protection? Could Nevadans be delayed from using certain lands and roads?

Safety issues. Getting the waste to the site

safely may be just as crucial as disposing of it safely. A chain is only as strong or as weak as the weakest link.

Health effects. Yucca Mountain is in the vicinity of both underground and above-ground nuclear test sites. Will construction activites stir up radioactive dust? How will you protect the construction workers from this hazard? Have you checked for the presence of mortonite fibers? We've heard that a milligram of a geolite mineral can cause lung disease.

The economy. Our state has already built a nuclear reputation because of nuclear bomb testing in the Beatty dump. If we are chosen to be the nation's glow worm, we will surely be known as Nevada, the nuclear state. Our economy is turning out to be as fragile as our desert ecology. With or without an accident, our prospects for attracting tourists and high-technology industry diminish if we assume this thankless and unrewarding burden. Who will compensate Nevada for these losses?

Population factors. The draft guidelines for assigning of waste repositories include a population factor of no more than 1,000 people may live within a mile of the site or the site will be disqualified. Population factors make sense in one way. If something goes wrong, fewer people will be hurt. However, population factors also mean that if something goes wrong, as it did for downwind

residents during the years of above-ground nuclear testing, rural citizens pay the price, their health and their safety. A population guideline legitimizes the decision to risk the safety of some because of where they happen to live. Instead the waste solutions should be so safe that the utilities and the users of nuclear power could live safely and comfortably downwind of the site.

The power waste connection. At one of Citizen Alert's public information meetings last week a person asked, "You mean we can put a man on the moon, but we don't have a safe solution for the waste problem?" I told her if we focused as much money, information and time as we had on the space program, we probably could have the technology to handle the problem. Nuclear power has been called clean, safe and cheap, in part because the problem of disposing of the wastes has been considered separately. Until the waste problem is solved safely, the waste should not be produced.

Reprocessing. At a DOE meeting in Las Vegas in December it was stated that there is a good chance that a reprocessing facility could be located near the repository. This possibility could be addressed in the Environmental Assessment. The implications are that Nevada could be the home of a facility that could produce materials for nuclear bombs. What are the chances that we could be hosting bomb testing and bomb making? Is the current proposal just a foot

in the door ultimately leading to a series of projects that no one wants in their backyard?

Independent monitoring. Our final concern is that a program of independent monitoring separate from internal quality assurances is essential to assure the public interest is being served. We've seen enough abuses and mistakes in the past month alone at the federal level to know that independent monitoring is a reasonable and practical request.

To conclude, a frequent criticism of groups such as Citizen Alert is that if we're to find fault with this system, we need to offer one of our own. On this issue we disagree. Experts in many fields have studied this difficult, complex, scientific and political problem for over 30 years and still do not agree on a safe workable solution. Our job is to inform, to question and to encourage public discussion. If we had a solution, the problem would not be the technology stumper that it is.

Thank you for this opportunity to speak. We look forward to frequent public forums in Nevada on this complex issue.

MR. McBRIDE: Thank you. Ms. Johnson, I'd like to thank you for giving us the copies of material. It will be very helpful in preparing our summary. Thank you.

Dr. Bloomfield?

DR. BLOOMFIELD: I'm Steve Bloomfield. I'm a family physician here in Sparks. I'm also a member of Physicians for Social Responsibility and the Chairman of Citizen Alert.

I think the issues are so obvious and straightforward that I'm sure I'm going to be repeating what everybody else has said, but I'm not one to ever miss a chance at public speaking.

Today I would like to discuss three issues that I think rule Nevada out as a choice for a high-level nuclear dump site:

One, I think it's inappropriate and unjust to make the State of Nevada and its residents responsible for the storage of nuclear waste produced entirely outside of our borders.

Nevada and nuclear are not synonyms. The desert is not viewed by Nevadans as a convenient dumping ground for other people's problems.

The unfortunate decision to place the nuclear weapons test site in Nevada is not now a legitimate reason to make it a nuclear dump site. Nevada and Utah citizens have already paid a high price in the loss of human lives from weapons tests that were guaranteed by the Federal Government to be safe.

States that desire the benefits of nuclear power production should be responsible for all the costs of such energy production. I think the attitude towards nuclear power production and weapons production will change a great deal when the localities where this production occurs become responsible for the byproducts and waste.

I think it's quite simple to be able to say, "This is a simple solution to a problem in Michigan or New York or Pennsylvania. We can generate our power, and we don't have to worry about it, and we'll just stick those people in the west with the parts we don't want to deal with." I don't think there's any need to be responsible for what other people desire. If they want the weapons production in their states, then they should take the responsibility for all the costs and shouldn't assume that someone else will pick up those costs, which I think will be the assumption now, foregoing on 30 or 40 years, that somehow Nevada and Washington and the western states would pick up the people's problems. And nobody has ever been willing to pay us very well for it.

The second question is the transportation of high-level nuclear wastes.

These documents in particular and no documents that I've been exposed to address the issue of the transport of large quantities of high-level nuclear wastes. Everyone

is well aware, from our own experience with the Beatty low-level nuclear dump site and from the nationwide problems of transporting toxic gases and liquids, that no guaranteed methods of transportation have been demonstrated. Like when people in towns finding nuclear waste in their town after the guy stopped and got a cup of coffee, that his local gas station was contaminated. The transportation of nuclear waste is not something that anybody understands or has a good handle on at this point. It seems clear we don't understand how to transport nuclear waste. Any yet you're going to take a substance that's produced mainly in the east and somehow safely transport it over 1500 miles to 2,000 miles? That issue is not addressed at all in these documents.

I think the third issue is the lack of proven methods for storage of high-level nuclear waste.

The entire document and almost any discussions you read on storage of high-level nuclear waste or nuclear waste in general is all theoretical. There is not any long-term testing -- and by long-term testing, what I'm talking about is what would be appropriate if you would take the shortest amount of time this stuff would be dangerous to other human beings. We are talking from 400 to 600 years this would be lethal if you were exposed to it. To make a decision to build a nuclear dump site before you even

have test data that says you can store it for so many years, that's preposterous. It would be like deciding if you were the president of General Motors that you were going to produce a complete line of cars without ever testing one.

I think one of the things that we are becoming increasingly aware of with technology is if we don't have to see what it costs us today, it seems wonderful and cheap and we get all the benefits. Increasingly we are starting to pay the price. I don't think the folks that investigated dioxins and put them into their initial transformers had any idea what the cost of this ultimate problem would be of clearing up dioxins. Manufacturers of those transformers, I'm sure, would have brushed it off and said, "Don't worry about it, we'll handle it later."

One need look no further than the Love Canal, Times Beach, Three Mile Island or our own Weapons Testing Range to realize that the theoretical guarantees of experts are not worth the paper on which they are written. Prior to the establishment of a permanent dump site I think we clearly need to have some data that nuclear waste can be safely stored for 50 to 100 years. Once that kind of data is available, once we have the kind of information that transport is safe, and when the states which are creating this problem are willing to pick it up, I think then there will be a solution. But to come to Nevada and say, "This

isn't even your property. The Federal Government owns this ground. You don't have to worry about it" -- most communities would not allow me, even if I own my property, to start raising pigs. They would say that's a threat. I think the same holds true for the Federal Government. Whether they own the land or not is totally irrelevant in this case. It's the effect on the citizens of Nevada that's relevant, and that's the issue. And you don't know, and the Department of Energy doesn't know, and the Department of Defense doesn't know and no one knows what's going to happen with this stuff, and I think until those questions are resolved, to go any further with trying to select a dump site is irrational.

Thank you.

MR. McBRIDE: We need questions like that because those are the questions that will be addressed in the Environmental Assessment document and will be addressed in other documents, and that's helpful to us if you can be specific on things that concern you.

Next we have Cynthia Mitchell.

MS. MITCHELL: My name is Cynthia Mitchell, and my concerns are as a private citizen. The comments I will address today are concerning several areas that are a key concern to myself and all other citizens in this state and the country concerning the storage of high-level

radioactive wastes.

How to dispose of high-level radioactive waste is definitely a problem. Permanent storage is not the complete solution, though the solution rests in ending the production of high-level radioactive waste as the byproduct of electricity generated in nuclear power plants. Given that, by the year 2000 we will have enough radioactive waste in this country to cover a four-lane highway coast to coast. That plutonium has a halflife of up to 500,000 years compared to 9,000 years of human history, and all forms of cancer are caused by iodizing radiation. The solution lies in stopping the production of radioactive waste. No solution will be achieved by divorcing the issue of waste storage from the issue of waste production.

Putting this first and, I believe, foremost issue aside, I must next question the process and procedures developed and being followed by the Department of Energy in developing site evaluation guidelines and in evaluating specific sites as to their suitability for waste disposal. The entire process has, up to now, been one I believe is best characterized as totally inadequate in provisions for public input and participation. No public education has preceded these hearings. Only persons lucky enough to be unemployed are perhaps able to leave work at their will and be able to participate today. The Information Documents

for the proposed nomination of Yucca Mountain represents nothing other than 40-some-odd pieces of paper.

I must then ask the Department of Energy, if there is such a good program, why is DOE so unwilling to face the public with it? The public, therefore, lacks confidence in this decision-making process. The only way to overcome this -- and I firmly believe it must be overcome, otherwise there will be no disposal of radioactive waste in this state or any other state in the country -- the only way to overcome this is to establish an independent monitoring process whereby on the state and local levels there is access to site evaluation data.

I understand the State of Nevada is going to receive some monies for technical monitoring, approximately $350,000, but this is not enough in terms of scope and funding.

Turning directly to the guidelines now in their application to Yucca Mountain, my concerns begin with the qualitative rather than quantitative nature of the technical guidelines. We are told in the proposed rules contained in the February 7, 1983 release of the Federal Register that to assign a numerical measure for each of the 10 major technical evaluation factors would obscure the real contribution of each factor to a specific site, as each of these factors can only be evaluated in concert with

others to determine site safety and suitability.

"Such importance weighting is of necessity judgmental," the guidelines say, "and specifically dependent on the subjective values held by the person or persons making the comparison. To set numerical weights in these guidelines would be an arbitrary imposition on the values of the Federal and consulting State officials who must make the decisions in the future."

Well, all I can say to this is hogwash, or maybe whitewash, because this represents nothing other than an attempt to evade the issues. I consider the qualitative nature of the technical guidelines an arbitrary imposition on me. What the officials will be able to do with these technical guidelines is to downplay certain critcal issues that, given proper numerical weight, would disqualify a site for suitability.

The Register contains the following example of manipulation:

"For example, the movement of water through an aquifer, though potentially adverse, may be offset by downward hydraulic gradients, which tend to direct ground-water flow to greater depths; by long ground-water travel paths; and by the retardation of radionuclide

transport by chemical reactions."

Or another of my favorite examples concerning the tectonic environments is that earthquake activity may not be necessarily bad if it can be determined that if an earthquake was to happen again, it would create a similar disturbance as before. Well, what all this says to me is that the qualitative evaluation nature has established a process whereby every exception to the rule can be included to insure that all sites considered politically feasible will be able to be proved technically feasible as well.

If I had to focus on one issue of primary concern to the specific site of Yucca Mountain, it would have to be transportation. The guidelines only give very cursory attention to the potential safety and health involved in transport, and I think Dr. Bloomfield clearly pointed out that not a week passes when we do not have some type of hazardous disposal accident in this country. If waste was to be transported to Yucca Mountain, we would be looking at distances of up to 2500 miles for how many hundreds of trips? To me it is not a question of whether an accident will happen, but how many, where, when and why. What are the short- and long-term health effects to humans and the environment? The issue then is, if the waste must be transported, minimize the distances involved. Certainly

Yucca Mountain cannot be considered a suitable site under that criteria.

And I would conclude by saying that the Atomic Energy Commission has had since the mid-'50's to address the problem of high-level radioactive waste disposal. We have not dealt with it. It's been something that's been obscured and pushed aside, and I think that since the mid-'50's we have had that amount of time to deal with it, and those solutions have been reached, and this is not a time to try and do some kind of quick fix to ship this stuff out to Nevada, bury it down in the old test sites and consider that an answer to the problem.

I think that the production should be stopped, that we should leave the waste where it is until a proven and viable solution can be determined, and that's the only way we will ever come up with a solution.

There's also two other people that I work with that were not able to run over here this morning to participate, and they both have comments that I'd like to submit. I don't know how you want me to go about it.

MR. McBRIDE: Submit it to the court reporter.

MS. MITCHELL: Thank you very much.

(The following written comments were placed in the record by the court reporter.)

"To: United States Department of Energy

"I am unable to attend the hearings on March 30 and 31. However, I am deeply concerned about how a high-level radioactive waste disposal site will affect Nevada and Nevadans. Some of my concerns are:

"It is unfair that a state which generates no high-level nuclear waste on its own should be subjected to waste generated by states thousands of miles away. To truck these potent wastes thousands of miles on interstate highways makes no sense. In light of the nuclear testing facilities at the Nevada Test Site, I believe this state has already done its share.

"Signed: Richard J. Hackman, 880 Coloma Drive, Carson City, Nevada, 89701."

"To: United States Department of Energy

"I am unable to attend the hearings on March 30 and 31. However, I am deeply concerned about how a high-level radioactive waste disposal site will affect Nevada and Nevadans. Some of my concerns are:

"1. Danger of radioactive contamination due to an accident during transport of high-level waste into and through Nevada. What studies have been conducted to balance the risks of large-

volume transport of radioactive materials versus on-site burial?

"2. What studies have been conducted to determine increased probability of material being stolen by terrorist groups if it is transported rather than disposed of on site?

"Signed: Jon Willinghoff, P. O. Box 14037, Reno, Nevada, 89507."

"To: United States Deparment of Energy

"I am unable to attend the hearings on March 30 and 31. However, I am deeply concerned about how a high-level radioactive waste disposal site will affect Nevada and Nevadans. Some of my concerns are:

"As a previous resident of Alaska I was able to witness firsthand the effects of the Alaskan Pipeline project, a project which was ostensibly to directly benefit the economy of the state, and indirectly, National Security. The realities of the effects were a temporary boom economy largely benefiting out-of-state contractors and workers who promptly left the state with their earnings as soon as the boom ended. In its wake, the state was left with the cost of higher unemployment, ecological

monitoring, health and safety administration and social upheaval.

"To contend that a high-level nuclear waste disposal site in Nevada will benefit the state's economy is to ignore this valuable experience. DOE and the Nevada Legislature must consider the state's costs of emergency procedures, radiological offsite monitoring and transportation facilities upgrading in their decision.

"Signed: Michael Rosenkranz, M.D., 1111 Strand Place, Reno, Nevada, 89503."

"To: United States Department of Energy

"I am unable to attend the hearings on March 30 and 31. However, I am deeply concerned about how a high-level radioactive waste disposal site will affect Nevada and Nevadans. Some of my concerns are:

"When it has been proven that nuclear waste causes chromosomal damage, cancer, forms of leukemia, to name a few, and it has also been shown that we have not devised an adequate, safe means to store nuclear waste or to run nuclear power plants as evidenced through numerous leaks and near catastrophes

throughout the country, how can you continue development in the nuclear arena? How can you justify this danger to the human population? How can you justify bringing a slow death to people who are unknowingly exposed to harmful radiation?

"Nuclear power is no longer a cheap means to provide energy. We must realize our error and turn to alternative sources of energy such as solar power.

"Signed: Kathryn Taylor, 1111 Strand Place, Reno, Nevada, 89503."

MR. McBRIDE: As I've indicated earlier, we're going to be open until 7:00 o'clock tonight, and it probably may be open until 8:00 or 9:00 until we get an opportunity for everybody to be heard.

Peggy Twedt, is she here?

MS. TWEDT: Mr. Chairman, members of the Panel, I'm Peggy Twedt, spokeswoman for the League of Women Voters. A League representative, Ann Zorn, testified at yesterday's hearing on behalf of the League of Women Voters of Nevada. Rather than reiterate her testimony, I would like to stress three main points she made yesterday in her presentation.

First, the League does recognize the problems caused by 40 years of accumulated nuclear waste. Whatever

the future of nuclear energy provides, this problem should be addressed in the safest, most technically sound manner available. Protection of public health should be the foremost consideration.

Second, public participation along with state and local consultation should be sought and encouraged in each step of the selection process.

Finally, a host state should not incur financial obligations due to a high-level radioactive waste repository within its boundaries.

Let me expound upon each of these three points, especially as they relate to the Yucca Mountain site.

Since protection of the public health must be considered for a long period of time, the site itself should be the principal barrier in safeguarding nuclear waste. This determination should be based on a scientific and technical -- this should be made on a scientific and technical basis. Institutional and engineered barriers should serve only as backup systems. The prior land use approach for isolating waste at Yucca Mountain, which could serve as an institutional barrier, seems inconsistent with the Proposed Rule 960.5-7-4. While stated as the potentially adverse conditions, let me quote from that section:

"Siting close enough to an atomic energy defense facility to compromise or interfere with

the use of that facility for defense purposes."

That would seem, then, that Yucca Mountain between the Nellis Air Force Bombing and Gunnery Range and Freshman's Flat where the nuclear bombs are tested seems to be a conflict that would be rather difficult to resolve. How will a repository affect the functions of these two facilities, and, more importantly, can it be shown that these two facilities will not adversely affect the safety of the repository located between them? We feel this should be a question addressed in the Environmental Assessment.

Public participation should be considered an important tool in the decision-making process. It's already been indicated that DOE is going to take an active role with public participation. The League appreciates the opportunity for input today at a Northern Nevada hearing and hopes citizens in the north and rural areas, as well as those in the southern portion of the state, have future opportunity to comment on draft and final Environmental Assessments and Site Characterization Plans if the Yucca Mountain continues to be a potential site.

We're also concerned that sufficient time be allowed in the selection process for adequate notice of public hearings, hearings in areas which may be impacted by transportation routes, and adequate response from DOE to

the questions posed at the various stages in the public hearing process.

The final point, that is, what will the federal responsibility be for costs and mitigation measures is a weighty one. There are many questions which have already been raised in the area of mitigation and costs. Let me stress a couple of them that are of concern to the League. I believe Ann mentioned others in her testimony yesterday.

What will be the means of transporting these wastes, train or trucks, and who will pay the costs associated with either form of transportation? Who is responsible for off-site monitoring expenses? Who pays for the training of emergency personnel and for cleanup from any incident?

The League will be looking closely at DOE's answers to these concerns and other questions that have been raised in the hearing process. While the League's main testimony was given by Ann Zorn yesterday, we do appreciate the opportunity to speak today in the north as well.

Thank you.

MR. McBRIDE: Thank you.

Mr. John Emerson.

MR. EMERSON: Panelists, members of the representatives of DOE and fellow citizens: My name is

John Emerson. I reside in Reno, Nevada. While I requested time to speak on behalf of Citizen Alert, I do not presume to hold that organization responsible for my remarks. Ultimately I speak for myself.

My background includes undergraduate training in a scientific field, though my graduate work was in theology. I am the pastor of First United Methodist Church in downtown Reno.

It may be ironic that this hearing occurs near the fourth anniversary of the Three Mile Island reactor accident which has caused the American taxpayers something in the range of one billion dollars to clean up and repair without the facility even being ready to go on line yet. Who knows what health costs will have been sustained by workers and nearby residents. It may be 25 years before we know. As dramatic as that episode was preoccupying the nation's attention, it has been only one in a series of incidents involving unexpected accidents and potential danger with regards to the use of nuclear energy and the disposal of its residue.

Our government has admitted that during 41 of the more than 400 underground tests at the Nevada Test Site radioactive debris was not contained. During this underground test in 1962 off-site radioactive emission was 324 millorems, almost twice the 175 millorem government

safety standard for the general public. The Banberry underground test in December of 1970 had disastrous consequences for test-site employees. The explosion occurred 910 feet below the desert floor, but the explosion was not contained underground, and a radioactive cloud escaped through the process called venting, reaching a mile-and-a-half into the sky. Over 900 workers at the site were exposed. Two died of bone marrow leukemia. Within four years of this accident an epidemiologist testifying on behalf of the workers' widows -at a court trial claimed that the chance of two men in such a group contracting acute bone marrow leukemia was 3 in 10,000. There are no assurances that venting from underground tests will not happen again.

Other situations that could be cited as horror stories from Missouri and elsewhere come to light in the middle of alleged political scandals in the Environmental Protection Agency. Is that agency's title really a euphemism?

Well into the nuclear age, we are beyond the point of no return with regard to radioactive wastes that must be disposed of. In my research, if my research is accurate, radioactive materials built up since World War II amount to one-half million tons of high-level radioactive waste, 62 cubic feet of low-level waste. Some substances

like Plutonium 239 remain dangerous for up to 250,000 years. Each of the 72 operating reactors produce something like 33 tons of spent fuel each year plus 50,000 cubic feet of low-level toxic material. The task of disposal seems gigantic and the cost enormous.

The apparent political game playing in the EPA that leaves the impression that officials entrusted with public health and safety are being cavalier, the devastating series of hazardous accidents and consequent economic impacts, the element of human error and the uncertainty about future guarantees of safe disposal methods all beg fundamental, philosophical and, I submit, theological observation from my prospective.

We pay a heavy price at many levels of our common life for tinkering with the elemental building blocks of creation,fissionable nuclear material, not unlike tinkering with DNA molecules and biological laboratories. We would do well to respect Albert Einstein's view of interdependent, interconnected relationships between matter and human action throughout the universe. A major concern, of course, is assured safety of disposing of nuclear waste. When the Department of Energy claims we have the technology to keep escaping radiation to a level as low as is reasonably achievable, what does that imply? What is the definition of the phrase "reasonably achievable"?

A cannister of aluminum oxide with 100-millimeter-thick walls that withstands leaks has been designed by Sandia Laboratories, and yet disposal plans can go awry. For example, 2500 or so barrels of waste were dumped into the ocean near the Farallon Islands. Some of the barrels would not sink, and so they were shot full of holes which led to leakage. Our Beatty waste dump site has been plagued with a series of mishaps, prompting former Governor List to close it down. Waste caught fire due to faulty packaging, and a truck carrying radioactive sludge from a Michigan reactor leaked, and five barrels of radioactive waste were buried in an unrestricted area outside the site's security fence according to one unpublished report.

Related to safety are some unresolved issues in the mind of at least one science professor emeritus, Robert B. Morrisey: Salt versus rock for deep geological repositories; air versus water cooling; cylindrical versus angular-shaped storage cannisters; and uncertainty about thermal and mechanical integrity of the cannisters under the radiation fluxes and temperatures and storage chambers.

Morrisey asks, "Can scientists really guarantee permanent safety storage when radioactivity will remain for thousands of years? How certain can we be that a site will remain at a low tectonic risk and the danger

of pollution to the biosphere will remain preventable?"

I raise some other questions:

Is there not a danger of lost records of dump sites, an accidental intrusion of storage facilities?

Are not high-level and transuranic wastes susceptible to natural disruptions as we've been talking about all morning, earthquakes as well as being vulnerable to sabotage, terrorism and theft?

How do we know that present remote desert sites like Yucca Mountain of Nevada will not in the distant future become valuable locations for the development of new communities?

Such issues as those elicit from me a great reluctance to submit Nevadans to further hazards. Indeed the Federal Government controls some 75 to 80 percent of this so-called sovereign state. Please forgive what may be a male chauvinistic analogy, but Nevada has become like a mistress whose master already has a large foot in the door.

I'm reminded of the Arabian proverb, "Beware of the camel's nose." I'm aware, however, that there is an urgent need to dispose of nuclear waste, and short of blasting it off into deep outer space, which may have a whole other catalog of problems, the issue is a reality that must be faced on this plant. I do not want to see Nevada

become a dumping ground for such wastes, but neither do I wish it upon my fellow human beings in any other part of our global village.

As a religious leader and, I hope, practical theologian, I want to close my remarks by raising some moral and ethical considerations with regard to the safe disposal of nuclear waste.

We must be responsible for people yet unborn, given the prolonged period of contamination. We have a moral obligation toward the future.

There are at least four ways to honor such a commitment: First, employ the best technology and management to reduce the risk factor; secondly, share honestly all information about the hazards that are visible in a visible, durable record such as stone or metal monuments erected near disposal sites with warnings in multi-languages and in diagrams; thirdly, establish an endowment fund from current profits to share future management costs and provide for accident insurance; fourthly, phase out the use of nuclear power and pour our best resourcefulness into the development of wind and solar energy.

We would do well to anticipate the future needs in a way that the ingenious minds that fashion the use of nuclear power seemingly failed to anticipate adequately the

needs we now face for the disposal of hazardous wastes. And we would do well to remember the wisdom of George Santiana who said, "Those who disregard the past are bound to repeat it."

Thank you for this opportunity to share with you my concerns.

MR. McBRIDE: Is Sym Morris available?

MR. MORRIS: Fellow Nevadans, since this is a hearing by the Department of Energy, I will speak to the Department of Energy, and these gentlemen here can listen in and so can you.

My name is Sym Morris. I am a member of the National Association of Atomic Veterans. I've watched nuclear weapons being tested, and I've watched the largest weapon ever tested by the United States below a hole in the ground, 500 foot deep, so I have some association with this kind of thing.

The DOE has selected the southwest corner of the Nevada Test Site as one of three possible sites for storing high-level nuclear waste. The fact you've selected this site tends to suggest, one, that you believe it to be a safe place to store high-level radioactive wastes for the required 340,000 years, the safe life; two, that you believe that the geology is sound and will contain this deadly material for that long; three, the area is relatively

free from seismic activity and, therefore, will prevent underground water from being vented into the atmosphere.

I understand you've already spent 61.6 million dollars on this already. I severely question your reasoning for having chosen this site. It doesn't take a lot of intelligence to recognize that this site is within spitting distance of the area of the Nevada Test Site where you're testing nuclear weapons, that the geology under Yucca Mountain has been submitted to hundreds of man-made earthquakes by detonations of hundreds of nuclear weapons reaching in size from a fraction of a kiloton to one-and-a-half megatons, most of which create an explosive force capable of fracturing underground rock formations for miles in all directions. And when you consider the combined effects of all of these detonations that have taken place since 1951, it would be a miracle if any of the underground formations survived without being literally pulverized.

As far as the future of seismic activity is concerned, all of the man-made earthquakes will not stop until the day you stop testing nuclear weapons on the Nevada Test Site. The fact that this site is in a remote area doesn't mean a thing when you remember the supposedly safe underground nuclear test called Banberry. It vented radioactive material that rose 10,000 feet in the air and dropped radioactive fallout as far as 2,000 miles away.

And we must not forget that nuclear waste dumps can and have exploded in the past. For instance, the nuclear dump in the Ural Mountains in Russia exploded in the late '50's contaminating and wiping out dozens of towns and villages and killing hundreds of people and, if the truth were known, probably thousands of people.

There are other areas that must be explored in connection with this proposed high-level nuclear waste dump.

First of all, the question of safety, safely transporting high-level nuclear waste by truck across the highways and through the towns of the State of Nevada.

One, a container that can effectively contain high-level nuclear wastes for more than a relatively short period of time has not yet been investigated.

Two, in most cases the effects of human exposure to radiation leaking from these containers doesn't become evident for 10 to 30 years later. By then it's too late. However, we can and must learn from the past misfortune of others.

I have here a copy of the Enlisted Times dated June 1979. The photograph you see is of a man named Ed Gleason. I would like to read you the caption under this photograph:

"Ed Gleason was a victim of plutonium

contamination in the mid-'70's. A truck traveling between New Jersey and New York leaked plutonium among the interstate highway, and it was from this leak that Ed was contaminated through a small cut in his finger. Successive amputations failed to stop the spread of cancer. Within the weeks of this date this photograph was taken Ed Gleason died. Because of Ed Gleason's death was confirmed by the courts when they awarded his widow a $350,000 settlement."

Next we must examine the past record of the agency who will be in charge of constructing and overseeing the operations and safety procedures at this proposed high-level nuclear waste dump, namely the DOE. The DOE was formed from and is an extension of the old AEC, Atomic Energy Commission, by way of the Energy Research and Development Administration. The basic operating policy related by the Atomic Energy Commission in 1953 was to prevent any pertinent data from being revealed. This was accomplished by the following of directives:

One, classify any data that appeared damaging to the AEC;

Two, provide alternative answers to make a case for any nonradiation explanation;

Three, smokescreen the issues with attacks and innuendos;

Four, withhold and even modify reports and data.

As an atomic veteran, I can personally testify to the fact that this policy is still being used by the Department of Defense. Now, let's take a look at what the records show about the DOE. For years the DOE has bragged about its safety record. However, the general accounting office did an investigation and released a report on July 29, 1981 which in part revealed the following:

On August 30, 1976 an explosion at the DOE Hanford plant contaminated five employees. The cause was attributed to faulty safety analysis;

In November 1978 emergency alarms at the Richmond Operations Office were found to be inoperative. Although this was reported, nothing was done about it until November 1979 when it resulted in an undetected leak of radioactive water;

On June 9, 1980 a potential dangerous mechanical problem was found at one facility. A three-day delay in reporting the situation caused an area of the plant to become contaminated.

Other reports state that there have been 75 accidental releases of radioactivity at the Savannah

River plant, and that the disease and death rate in the area have increased markedly. When you combine the DOE's total indifference to the health and safety of humans with that of the nuclear industry as a whole, you get a very scary picture.

The DOE never ceases to amaze me, though. Even though President Reagan proposed the dismantling of the DOE, you have somehow managed to get a 5.5 billion dollar budget for 1983. I believe that's the figure that is correct. And what is even more scary is you intend to use part of this money to develop a radiation-enhanced warhead.

For the past 35 years you and your predecessors have been telling us and the people of this country that the radiation we were exposed to is harmless, that there's no scientific evidence that radiation can cause cancer and all the other diseases we are suffering from, and then you turn around and you want to develop a bomb that is specifically designed to kill humans with that very same radiation. Since you already have -- we, I should say -- have radiation-enhanced warheads like the plutonium bomb, the cobalt bomb, the nitrogen bomb, the neutron bomb and the nitrogen-helium bomb so deadly that 30 warheads will annihilate all life on earth, it seems to me that anyone who apparently wants to develop a bomb that can annihilate

all humans must be insane.

I once read or heard somewhere where a man had said that there are no new concepts to explain human behavior, that there are only old concepts that had been altered slightly so that they can conform to today's world. With that in mind I did a little research into the past literature to see if I could find some old concepts and strategies that might help me understand today's DOE. I think I found what I was looking for. For instance, the persistent way you continue to deny there is any scientific basis for the fact that radiation exposure can cause severe health problems appears to coincide with this book when it refers to the way an individual reacts to an adverse situation:

> "He is hit the same way a second time, a third time perhaps more severely, so that by and by he learns to endure the certainty of life with indifference. Finally the repetitions become a habit, thus the entire concept of life of a fellow who is otherwise industrious is demoralized, and he is transformed into a tool for those who use him for their own ends."

Next, referring to the basic strategy that might be used by an organization such as the DOE, this books states the following:

"It knows how to create the appearance as though this were the only way in which peace could be maintained. Yet, relentlessly it concurs one position or another either by quiet pressure or by downright robbery at moments when the public's attention is occupied by other things."

And finally, this book refers to a strategy that you may very well be using through these very hearings, and I quote:

"The task of a program maker is not to state the various degrees of a matter's reliability, but to demonstrate the matter as such."

That means he has to care less for the way, but more for the goal.

You don't begin to realize the full potential of these comparisons until you learn that these quotes are from a book that was first published 25 years ago and that these concepts and strategies were conceived by a man named Adolph Hitler.

It seems to me if anyone in this audience who is not associated with an agency of the United States Government that deals with the nuclear industry were to commit some of the acts that you apparently have committed,

we would long ago have been arrested, arrested for crimes ranging from criminal negligence to murder in the first degree.

It is my opinion that the construction of a high-level nuclear waste dump anywhere in the State of Nevada controlled by the DOE would ultimately cause the death of thousands of individual Nevadans from exposure to radiation.

MR. McBRIDE: Thank you. I appreciate the fact that many people have many different issues that concern them. However, I wish to point out that we're going to have to keep the subject matter germane to the charge which this panel has, and I will read it again for you.

The purposes of the hearing are to inform residents in the area of the proposed nomination of the site, to receive their comments on proposed nomination and to solicit and receive recommendations of such residents with respect to issues that should be addressed in the Environmental Assessment and the Site Characterization Plan which are required by the Act.

I'm sure many of you object to the national policy of testing nuclear weapons. I'm sorry, but that's not within our purview, and I am disturbed because we have a lot of people that want to speak to this very important

subject, and I think we have to maintain that restriction. I have no problem if you object to the use of nuclear power and want to tie it in as a general statement, but I must remind you that your personal views regarding other nuclear weapons and other things are not germane to this discussion, and it merely confuses the issue, and it may even cause some people not being able to speak to the problem at hand. So I request respectfully that you keep your discussions to things that are relevant, things that are of concern to our charge.

Is Judy Michelson present? I'm going down this list and see who wants to speak. I'd like to have at least two other individuals.

Liz Bernheimer?

Maya Miller?

MS. MILLER: My name is Maya Miller. I live in Washoe Valley, and eight years ago in 1974 I testified in a formal statement before the AEC in Germantown, Maryland because at that time the haste to create a nuclear dump in Nevada was so great that we were not even having the hearings that you're having today, and I do indeed appreciate the fact that you have slowed down and that we have the opportunity to let you know our alarm. It seems to me the process is better and certainly the understanding of the citizens is greater because we have had eight years

of too many tragic accidents to give us a sense of what the future entails.

I had a list of questions, but I'm not going to give them because they have certainly been included many times and more forcefully by the excellent speakers who have talked with you this morning.

MR. McBRIDE: If you have them written, we will be glad to accept them.

MS. MILLER: You must be getting, however, the net effect, which is that we simply want you to stop entertaining the notion of putting your nuclear waste in our state where we have already had more than our just reward. We are concerned because we don't trust the military-industrial complex which is moving in this direction with a very heavy hand.

One of the concerns that I have is that Nevada finds itself in a position of having so many of its citizens employed in related industries and so much of its money tied up in this experimental process that the very fact that we have that much money invested is going to be a reason given for the continuance of it in our state, and we will be indeed a political pressure point for a state which has so few citizens in it to begin with, so that Nevada will seem like a political pushover for the burial of nuclear waste, which then will allow the development of

such waste in an ongoing way elsewhere.

I also have a very severe concern about the cost. That's been covered well this morning, but I would just like to underscore my concern that we are putting into even the preliminaries of this the kind of money that we really sorely need and is being shot off from the human needs that are the real sustenance and the real defense of our country.

I will give you my written concerns. Thank you.

MR. McBRIDE: Thank you.

Do we have Kristin Pfanku here?

Do we have Glenn Miller here?

MR. WASSON: Mr. Chairman, I live in Susanville, California, and I'd dearly love to be next.

MR. McBRIDE: What is your name?

MR. WASSON: My name is Glenn Wasson from Susanville, California.

MR. McBRIDE: I'll take you right now.

MR. WASSON: In case you haven't noticed, I'm an Indian, but I'm here to speak about defense. I know that sounds real odd, but America needs defending.

In 1942 I was here in Reno, Nevada and enlisted in the United States Marine Corp. During the process I was wounded on three separate occasions, once on Guam and twice

on Iwo Jima, and I can truthfully say that war is hell. America has got to be defended, and this is what I'm here for, the defense of the Yucca Mountain, Jackass Flats and all of that.

You see, each one of us has a duty to defend America. We are Americans. At least that's what they tell us. And how do we defend America? I went to war for it, and I suppose we all would if we had to, but we have to have an enemy. And as we stand here and sit here right now, we have one enemy, and that's the Department of Energy. In the coming decade the Russians are absolutely no threat to us, but as we stand here right now, if we are going to defend this country, who is going to ruin it? The Department of Energy. The United States Government. We're faced with living with these laws or in a state of rebellion. As an American, I prefer rebellion.

Every civilization that has come and gone has always left one thing behind it -- and it was alluded to by several of the other speakers -- and that's filth. The waste of every civilization has killed that civilization. So if we want to keep this earth the way it is now, we have got to stop making that filth. If we're going to survive as a civilization, if we are true Americans, then we must resist every effort of these government agencies to come and terrorize this part of the earth that we have

lived in.

You see, we Indians are in a very unfortunate -- or lucky, I don't know which because it's not for me to say -- but all of you in this room of Irish extraction are lucky. You can go to Ireland. All of you in this room who are Japanese extraction, you're lucky. You can go back to Japan. And anyone here from Africa, you're lucky too. You can go back to Africa. Where are the Indians, where are the deer, where are the squirrels, where are the trees, where is the water of this area going to go?

Our preacher friend pointed out this was a moral issue, and since the Great Maker saw fit to put me here as an Indian, I must live my life here as an Indian on this earth. The other thing he also let us know is that this is the only earth that we have. We the human beings, we the trees, we the deer, we the birds, we the fish, we have no other place to live in this universe. If we do not respect this earth right now and stop this nonsense, this nuclear nonsense, we will truly kill the earth, we will kill our future generations, we will kill everything that we hold of value.

And in conclusion, for those of you who believe in that black book -- is that minister here? Do you have that black book, the one, you know, I think they call it the Bible. You've got to remember that God made

the earth, and it is written that he shall destroy it, not us humans. And we should keep the land.

Thank you.

MR. McBRIDE: Since these other speakers obviously are not scheduled until after 3:00 o'clock, I'm going to declare a recess, and we will be back at 3:00 o'clock. Thank you.

(The noon recess was taken.)

RENO, NEVADA, THURSDAY, MARCH 31, 1983, 3:00 P.M.

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MR. McBRIDE: Is Judy Michelson here?

MS. MICHELSON: Yes, but I would like to yield my time to my husband, if that's okay. He's the better speaker of the two.

DR. MICHELSON: I'm Dr. Michelson. I'm a physician in Nevada, and a concerned parent is what I would like to be representing today.

MR. McBRIDE: Could we have your first name, please?

DR. MICHELSON: William.

The problems currently being addressed and facing the Department of Energy regarding the recommendations for a radioactive dump site are complex and multifactorial in nature. We know that, and I'm sure they do and acknowledge that.

These issues range from scientific and technological considerations to those of political and special interest, and I don't envy the position from a business standpoint, and to some extent that's how governments operate. We operate from a track record. You do not get a contract if you do not have a good track record. Indeed, the track record of industry and government

to date with respect to nuclear waste management has not been what we would like to see it be. We have had nuclear leaks of high radiation material in Washington; closure near Hanford, Washington; abandonment of a site in Kansas. And these are things that were not errors, but variables within the considerations that, to the best of the DOE's ability, they could not consider, yet it still happened, no different than what we have found in chemical waste and what is facing the EPA at this time. So the goal here in some of my criticisms are not to make someone wrong, but to acknowledge that variable, to address it and consider other options.

To date there is no scientific acceptable solution to the problem of radioactive waste and what to do with it. That has existed for 30 years. The scientists addressed it and made it public at the time of the discovery, yet we went ahead, hoping and presuming we would find an answer. Yet 30 years later we have nuclear waste piled everywhere, and now we have nothing to do with it, yet we continue to produce it. The basic problem that existed 30 years ago still exists now. There's no safe way to get rid of it.

This was first substantiated by the Federal Interagency Review Group on Radioactive Waste Management, which conceded that there is no demonstrated technology

for the permanent safe disposal of nuclear waste. And permanent here is very important because nuclear waste is permanent. It will be here 25,000 years from now when we're long gone.

Indeed, the testimony here today has addressed many valid concerns ranging from proposed methods of transportation and concern over that: Number one, that it's coming all the way across the nation; number two, that on multiple occasions on our TV set at 6:00 o'clock we have seen presumed fail-safe methods of chemical transport of toxic chemicals that seem to fail and devastate a town or cause a fire, so that's a valid concern.

The question of legal responsibility, Federal versus State, and the cost. Valid concern over the safety of the proposed Nevada site or any other site still exists, and indeed, as Nevadans, we should not only comment from our viewpoint with reference to Nevada, but also with reference to what should be done with this material in general, and a storage site anywhere is not acceptable. The scientific data does not demonstrate to date a safe method of storage, yet our legislators need to do something with this material and are putting pressure on DOE, et cetera, to find a solution. This is not the way that we should address the issue of nuclear waste. DOE will be forced into that if we don't support DOE. And

it is not us against the government, but this time the public needs to come in, consult with the government and help with this problem. It's our problem.

Concerns over the site range from geological concerns to the location itself, which is located on a military facility, hence exempt from NRC licensure and not subject to public review. That is a concern to me. If it's so safe, we should have no problem with public review.

Scientific concerns persist again concerning the geology of the area, and in addressing this one variable that absolutely devastates me -- and I've put in four years of research in the area of microbiology, totally different from this, yet the concept of research remains the same. There are variables in research that are difficult to predict. You do your best. The plan is that this will be five miles from a military base and near the site of ongoing planned continued nuclear testing. That devastates me. I cannot believe that that's included in the plan. The testing will not stop. We presume that, based on this figure and that data, nothing will happen, yet that's a variable that I have a problem accepting as is the fact that it is in an area that is a known active earthquake site.

A personal and a State responsibility that

need be addressed here -- you know, I mean the people of Nevada -- how much of the nation's nuclear programs need we accept? We already do the nuclear testing. We already have Beatty, which has been proven unsafe. We voted not to have it, yet we still have it. We are already accepting nuclear waste, which we attribute minimal relative to what we need to receive from other states, and now we are being asked to have a high-level center and accept everything, most of which or a great deal of which is coming from the east coast. Now, again, let's not make the east coast wrong or the Nuclear Regulatory Commission wrong, but from a responsibility standpoint, we shouldn't have to do either of it. If the people there benefited from nuclear programs that reduced their energy bill, then they need to be responsible at this level as well. But again, in that I'm not saying or supporting that they should have such a repository because it is not proven that they're safe there, and I don't want them or their children or, more importantly, our world subjected to this.

You see, this thing about nuclear, you know, we're talking 25,000 years, halflifes and things like this. We have hold of a little animal that we don't appreciate, and we don't know what the overall effect that this may well have at a later date upon our world as a whole. Okay. And that's real important, and this is fully

acknowledged within the scientific community.

More paramount here to me at a personal level, as a father and as a physician, are the known accepted medical dangers of nuclear materials. You know, it's well acknowledged within the private sector of medicine these dangers and what they cause. Injuries induced by the effects of radiation are well documented, yet industry and, to some extent, our government has chosen not to acknowledge this data. Yet even for the lay person much of it is very difficult not to accept. That cancer rates downwind from testing centers are many percent higher, that an individual went in and helped clean up nuclear waste within a reactor site that had a problem, a young man that went in there and then died of leukemia, that somehow that was not related to the fact that he put his life on the line for us, that's not acknowledged. I have a problem with that.

These accusations are directed at industry and government and whatever, and I don't want that to be the end result of what I've addressed here today, but do it because of the significance of the impact of what this means to me. You know, evidence of this, of where I believe our government is failing us and itself, is that things like radiation dose limits for nuclear workers are 10 times that allowed in the public community. Now, you

see, relative to medicine, that's not just a 10-times figure, but for each time it's another 10 times because it's what we refer to as Q-10. It's not just 10 more, but it's multiple on that. Okay. Independent research has been suppressed rather than encouraged even when that independent research has demonstrated things like increased cancer levels.

Now, much of what I say here today I'm sure could be refuted or addressed in a different way, but where there's smoke, there's fire. So what I'm asking today of Nevadans and of you folks in your report or wherever this goes -- and I do not know -- is that we pull together and all become responsible and be willing to address this issue for what it is.

Number one, no such site belongs in Nevada, and, more importantly, no such site belongs anywhere until the scientific community has agreed that it's safe, and not just the scientific community that is supported and paid for by the government, but privately as well.

And more importantly, I ask the people that deal with this type of problem to deal with it from a personal level in a personal responsibility, and this is where I hope I'm saying something new now because most of this has been said this morning, and most of that can be refuted, and the data can be twisted and played with and

whatever, but again, where there's smoke, there's fire.

As a physician, I would relate -- what I'm asking of the people that deal with this problem or will need to deal with this problem is to address it in the same way that I have to as a physician. If I'm doing some sort of procedure that seems to be proven safe, yet a few articles that I read in my daily reading indicate that certain problems may be evolving, it is my personal responsibility to address that potential problem, which may well be a major part of my livelihood, and if it's a threat to my patient, to stop doing it. In this same way, I'm asking the people that deal with nuclear energy and nuclear waste and et cetera, which is their livelihood -- and hence, if it's stopped, what am I going to do -- to address the issue from their heart, thinking of their children and their children's children, because they know how dangerous this is and need be done. And what need be done right now is that we don't allow ourselves, our government or anyone else to create an intermediate outlet to dump the material in so that continued production may go on because the issue is not where to put it, but to stop it now until we know what to do with it, which should have been done 30 years ago.

Now, that's a new position. That's a hard position to take, and that may not -- you know, that's the

position as I see it, and from a medical standpoint, unless I could be shown a lot more, that's what I would support.

Thank you for your time.

MR. McBRIDE: Perhaps I don't have to repeat it, but in case some of you were not here this morning, I want to reiterate that this panel, the three of us here, are members of the public. We are not members of DOE. We have no connection with DOE. We're here to hear your thoughts and to develop a composite, not missing your point, but to consolidate those views that we heard yesterday in Las Vegas together with those we hear today together with those that will be sent in in writing. And on that score, I'd like to remind anyone here that if they or their friends who were unable to be here wish to make comments, the information is out in the lobby as to who to address them to and so forth, but the comments will be accepted through April 25. So I just want to make sure everyone knew that.

And also, again, in case you didn't know, Mr. Bob Revert here is a County Commissioner from Nye County. He lives in Beatty, Nevada. And Dr. Peter Krenkel is the Dean of Engineering at UNR.

Next we have Liz Bernheimer.

MS. BERNHEIMER: I'm Elizabeth Bernheimer, and I represent the Health Professionals for Nuclear

Awareness. I'm also a health education specialist, full-time faculty member in the Department of Family Community Medicine, School of Medicine, UNR. It was lovely following Bill Michelson, one of the students who got his early training at UNR.

The experience that the American public has had with hazardous waste dumps has not been encouraging. Since the beginning of the Reagan Administration the Sierra Club and other environmental organizations have accused the administration of placing the control of the EPA, the Environmental Protection Agency, with people interested in making it a tool for the polluters. We've seen the committed EPA civil service employees leave the agency in disgust, the reports of scientists changed or withheld, and the conniving of top-agency, Reagan-appointed officials with the very industries they were supposed to monitor. Fortunately, having a free press in this country has made this information available to the public. And just reading the Gannett Newspaper last night, I found that two of the top fired EPA officials are now working for the Department of Energy. They are John Hernandez, and the other gentleman is Matthew Novak, no doubt adding great esteem to your program.

Well, let's look a little closer to home. What has been our experience with the low-level radioactive

dump site in the State of Nevada? For years low-level radioactive waste has been shipped to Beatty. Because of no enforcement of proper packaging of radioactive waste by shippers and continual reports of leaking packaging, efforts to close the Beatty dump site have been going on for the past few years. After all the powers that be agreed to close this dump site, we now must wait a couple more years until Colorado builds its own dump site, and then we can close ours. Simultaneously research proposals to study the long-term effects of low-level radioactive exposure on the health of the population of Nevada have been submitted the past few years, and all have been rejected for funding. At present we have no knowledge what the effects of low-level radiation exposure may have upon us. I've just mentioned two instances of national and statewide unconcern for the public's health because it raises some serious questions regarding a high-level radioactive dump site in Nevada. And frankly, the term "repository" is a euphemism I resent. It's a dump site.

The first question I am posing to you has to do with the protection of the people of Nevada. Since the American public is a bit disillusioned with the honesty of our governmental agencies -- and I won't bother citing all the examples or even a few of them, I think you're all familiar with them -- I'm asking you, what outside monitoring

system are you considering to serve as the public's advocate? The Public Utilities Commission has a public advocate office as one example. And as the second part of that question, what funds would be available to this office, and where would the money come from?

Question two: What plans are you making for studying the effects of long-term exposure to high-level radioactive waste? What monies are you placing in your budget for this activity?

Question three: What monies will be available to compensate the citizens for any ill effects they might suffer? Or must the people of Nevada be forced to take legal action for redress as experienced by the people affected by atmospheric nuclear testing of the '50's?

Question four: How much high-level radioactive waste will be stored in Nevada? Where will it come from? How will it be transported? How will the public be protected from accidents, thefts and other such unforeseen circumstances? And should there be accidents, who will pay? And let's take a good look at Three Mile Island and realize that the cost of cleaning up that accident is far more already than the cost of building the actual plant.

Question five: What benefits will accrue

to the people in Nevada for being the dump site of the USA? We could, of course, have a slogan, "Be the globe state." Other states such as Massachusetts and Tennessee require that compensations be paid to a locality for placing the hazardous waste site in one of its counties.

Since our County and State officials hope to solve the revenue shortfall of this state by wooing high-tech here, my last questions are: How will this high-level radioactive dump site enhance this state's image and attract high-tech? Are you considering a survey of owners and employees of several Silicon Valley industries to determine whether such a dump site would encourage or discourage a move to this state?

And finally, according to a report in the March 10th Wall Street Journal, people in Minnesota feel that merely considering a possible site for hazardous waste causes a decline in the fishing and skiing resort industries. What will it do to our casino and tourism industry?

In conclusion, I hope you will give my concerns some serious considerations. Thank you.

MR. McBRIDE: Thank you.

Excuse me if I don't pronounce this next name correctly. Anybody here by the name of Kristin Pfanku? How about Glenn Miller? Is he here yet? Leonore Haimowitz?

MS. HAIMOWITZ: I'm Leonore Haimowitz, Reno, Nevada.

So much has been said here on the subject today; thoughts, questions, worries have been well covered by speakers who have really done their homework. I'm grateful to the panel that you've allowed the speakers to get into the deeper, more significant thinking and concerns than just comments restricted to domination of Yucca Mountain for site characterization.

Has the point been made, given we Nevadans already have a test site with all its concomitant woes, should we host a repository when just their proximity provides many questions which may be unanswerable?

Today many in the global community are talking about nuclear-free zones. Nevada can't enjoy such luxury. I want to remind you of Einstein's message after Trinity, June 1945, "In essence, the world has changed in every way except people's thinking." We've got to examine our thinking. It's directly related to this nomination. Perhaps if we had examined our thinking in the past we wouldn't have this horrendous problem of disposal of high-level radioactive waste. If the DOE can examine its thinking, perhaps we can temporarily solve the waste problem in a way that will be more in keeping with human values.

Thank you.

MR. McBRIDE: Thank you.

John Vigoren. Theodore Oleson.

MR. OLESON: Thank you for the opportunity to speak here today. My name is Ted Oleson. I'm a representative of the American Friends Service Committee, Reno area program. The American Friends Service Committee or AFSC is a Quaker-based organization founded in 1917 which has worked both nationally and internationally to promote peace and justice.

At its March 28, 1983 meeting the Reno area committee for the AFSC approved the following statement:

"The Reno area committee for the American Friends Service Committee thoroughly endorses the efforts of Citizen Alert and other groups to see that the problems of radioactive waste disposal, whether in Nevada or elsewhere, are given fair and full public discussion. The disposal of radioactive wastes represents an extremely dangerous and long-range problem, and the public must demand that any competent persons be allowed access to relevant plans and structures for examination and criticism. The nationwide AFSC concern for simple living

and for public responsibility for conservation relates naturally to our support of every effort to develop alternative energy sources and to slow down the present rate of growth and consumption of energy."

I would just like to expand on that, that the primary consideration that we had was that relevant outside independent experts be allowed complete access to all plans, facilities and operations which the Department of Energy undertakes in its examinations and in its study for this potential site. That was our primary concern, and I would just like to repeat it now, so thank you very much.

MR. McBRIDE: Thank you.

Dagmar Thorpe?

I'll go back to the beginning here. Kristin Pfanku?

Glenn Miller?

Evelyn Summers?

MS. SUMMERS: I'm glad to see that the minister is not here. My remarks perhaps would not be in keeping with his profession.

Members of the Panel, ladies and gentlemen, my name is Evelyn Summers, and I am voicing objection to the location of any nuclear waste disposal site in the

State of Nevada.

Nuclear waste generation is a process that very few of us have been able to voice an opinion on prior to its development. The fact that we are now able to participate in this illusory process of decision making now serves to illustrate the point that we are shutting the barn door after the horse has escaped. Further, the decisions made during this generation will impact all future generations who will take no part in the events of this decade.

I was not personally fortunate enough to be born into a nuclear-free world, and the events in my lifetime have caused me to pass a terrible legacy on to my own children. During my childhood I lived about 30 miles from Reno, and because of the awareness of the dangers of radiation, my father would not permit me to be outside during rainstorms and would not permit me to play in the snow. Not everyone has such aware parents, and during the 1950's I personally watched a little girl die over a period of a few months of leukemia. She was permitted to play in the rain during a storm which had come north following an above-ground nuclear test.

Because of continued nuclear testing, the constant increase in the production of nuclear weapons and the commitment of the Reagan Administration to the furthering

of nuclear power plants through the use of the breeder reactor development, I feel it would be criminal on my part if I did not advise my own children to not have children. This I have done. The risk to their progeny from radiation exposure is too great.

To quote from a recent speech given in Reno by Julian Bond, "Under the Reagan Administration life begins with conception and ends with birth."

The commitment to nuclear development is proof positive that Julian Bond was correct. The only solution to the problem of a nuclear waste is to stop generating it. This means an end to uranium mining, construction of nuclear power plants and stopping the production of nuclear weapons.

It is interesting to note that the supposed neutral DOE is charged with production of nuclear weapons, for which 30 percent of its budget is spent, and yet they are also charged with these hearings. I wonder how much impact those opposed to all forms of nuclear development can have. In fact, how do you explain that among those organizations participating in NNWSI, at least three are also involved with nuclear waste generation through the development of nuclear weapons and the sale of nuclear power plants? Just as the Nazis of World War II would have been tried with crimes against humanity, so, too, should

the profiteers and proponents of nuclear development be charged with crimes against humanity. In the final analysis, the damage caused to humanity by nuclear development will be far more than that caused to humanity by the Nazis.

It is not only the physical danger that is of concern, although that will be with us for half a million years. The current social cost is important also for it takes food from the current generation and condemns the future generations to numerous health problems or possible extinction.

Aside from the initial government outlay that could have been better-spent social programs, there is the capital cost which has been passed on to the consumer along with tidy profits. The cost of decommissioning the power plants and nuclear weapons following the use or obsolescence has not been considered, and will Nevada receive them? The clean up of accidents has not been considered, and those are considerable as private insurance will not fully insure a nuclear power plant. So the government makes up the difference, again, at a cost to the poor.

Further, our very democratic system is in danger because of the security problems involved with the constant risk of sabotage, terrorism and the possibility of a nonnuclear nation waging nuclear war by bombing a

nuclear power plant. Israel demonstrated that.

So instead of placing a nuclear waste repository in Nevada, may I suggest that the DOE take all nuclear waste, form it into suppositories and appropriately implant it into the anatomies of the proponents and profiteers of nuclear energy.

Those of the government have been dishonest to the public regarding the dangers. Proponents go into our schools and try and brainwash our youth. DOE would prevent the possible pollution of the planet in the destruction of all life. Proponents of nuclear development are criminals and should be treated as such. It is not humanity that profits from nuclear waste, so let those who profit personally attend to the problem of nuclear waste as I have suggested previously, and let them be isolated from the rest of the population, perhaps in a prison of lead.

Thank you.

MR. McBRIDE: Thank you.

Is Janice D. Whitefeather here?

MS. WHITEFEATHER: Good afternoon. I'd like to say that I appreciate this time. You know, it's the first time that something like this has happened, that the people have been able to come and tell the government how we feel about radiation, how we feel when they plan to

bring it into our homeland here.

I speak for my little grandchildren. A lot of them haven't been born yet. The first one, the eldest, my nephew, I was just holding him this morning, and there will be many more who come after him; and my little grandson, he has two legs, and he has two arms, and he has five fingers on each hand, and he's got five toes, and he's healthy. And I want to see the rest of my grandchildren and their grandchildren the same way.

The reason that I came is because I think it's really important that we speak up about these things that we're concerned with our people. We're concerned about our future generations.

When I cross over, when I go on and go into spirit world , I want to be able -- when I walk up to Creator, I want to be able to tell him I tried to help, I said something, I didn't stand there and let them destroy the ones who come after me, the ones who are going to suffer from this thing, that I stood there and I told them what would happen and I warned them, and that I would stand up for them.

You know, a lot of things have happened over the past years, even within my lifetime. I've only learned what radiation can do to you in about the past five years. I've seen the monster movies, the Incredible Hulk

and things like that, but they make it look like something that just happens over in an obscure laboratory somewhere, that it doesn't happen for real and that people can't be hurt by radiation.

You know, we're given X-rays every time we walk into the hospital, every time we go to the dentist. So it looks like radiation is okay, but it's not.

I used to live in the Bay Area, and we didn't live that far from Lawrence Livermore Laboratory, which I heard so prestigiously talked about a little while ago. Lawrence Livermore, about two years ago they had an accident with plutonium-contaminated water where it was dumped into the water system of the south counties of the Bay Area. And there was this little article about that big in there. You know, we were living in those south counties, and when I found out about it, that made me outraged. How can they do this to the water we drink, the very essence of our lives? How can people knowingly do that and cover it up and tell us that it's safe?

It reminds me of the nuclear tailings, the uranium tailings down in the southwest. I visited a lot of my friends down there on Navajo Reservation, and some of their relatives worked in the uranium mines, and some of their relatives are very sick. They have a really large daycare center in Tuba City, and in that daycare center

they have a special class for handicapped kids, kids with no arms and no legs. They have a large tailing there that was left about 20 years ago. These kids are getting it now.

The Indian people, we've been the first of the nuclear fuel cycle. We felt it first. Those people are my relations, and I can see what's happening to them. And I know these same things happen here, they happen in Moapa, they happen to the people of Las Vegas. But because you can't see it, you can't touch it, you can't smell it, you can't see that it's there, you don't realize it. It's not a reality in our minds. It's not a reality that this is something that can hurt you. It's only out of comic books.

Hanford waste disposal, they've had several slipups, dumping waste into the Columbia River. The people, they fish out of that river, the Indian people up there, and I've heard them talk about their fish. That's what keeps them alive is that fish, and yet they're contaminated. Those people are going to die. There's many ceremonies that they have concerning the salmon because the salmon has always kept them alive, and if they don't have that, their people are gone. That's genocide. That's what that is, that's genocide. What's happened to the people on Navajo, that's genocide.

I've heard someone talk about Minnesota

dumping their tailings down here. There's a granite shelf right in the area, goes across Minnesota into Wisconsin into Michigan, and, as they say, it's a pretty big piece there, and they wanted to put the tailings there. My father's family comes from Red Lake, Minnesota. Just north of that area, that's my homeland, those Great Lakes, part of that. The rest of it is down here in Nevada. And I see everyone dumping their shit, dumping their shit, their waste in my land, in my home territory, places where we were created.

We didn't walk across no ice land. We were created here. This is my land. I love this land. I love those mountains near my home. I know who is buried in those mountains. They're not buried in the cemeteries with the crosses and all that. They're buried in crevices in the old way. That's how long our people have been here. We don't have anyplace else to go. The rabbits, they don't have nowhere else to go. The water, where can it go? All of that, it has life and it's all part of our lives.

There was a waste spill at Crown Point, New Mexico, and I would think that the EPA would have something to say about that, you know, to this day they haven't begun to clean that up. Oh, they've been going to court, but they still haven't cleaned it up. And what's really funny, the end result isn't just the people living

at Crown Point because it went down the wash, it went down the wash into the little Colorado River and then into the big Colorado River and eventually into L.A. That's where that waste went to. So the people of L.A. should also be outraged, outraged because the regulations are so lax that these things still happen to us.

There was a leakage -- I heard a man talk about the leakage at the Farallon Islands, but he neglected to mention that mutants have been showing up in that area, that the life forms living in that area outside of the bay have already become different. You know, either they're bigger, or maybe some part of their anatomy is different than what they were. I don't want my grandchildren to be different. I want them the way that we were created. We were created just like Great Spirit, and I don't want them to be any different than that.

Those who live in the east who say they should bring all this waste over here, I feel sorry for them because they think that they're saving themselves, but they're not because the same thing that happens to our grandchildren will happen to theirs eventually, and no one, no one because of money, because of status, is safe from radiation. It can penetrate anything. It goes beyond color. It goes beyond education. No one is safe. If you continue to poison the world that we all live in, there's

not going to be any world for us any more. Everything is going to be dead.

I talked once before about spirit world, and when I go over I'm going to have a good time there because I'm going to see all my -- all the people, my dad, everyone that has gone on. And I'll be able to go over there because I thought, I tried to be as honest as I could. And I pray that those who are acting in a dishonest way, I pray for you because you're going to be stuck here in a living hell. It's not going to be like this. You won't be able to talk to the mutant people here because you're stuck here in limbo. When you go on you're stuck here because you're not at peace with yourself because you lied to someone, because you hurt the people. I pray, I pray that you'll change.

The reason I talk like this, you know, saying that there are people like that, because what I've seen or what I've heard about the EPA, what I've heard about the government, the Department of Interior, about the administration, all come from a long history of distrust. And I put that on your heads, and I pray that in these next few weeks that you'll see and that maybe you will begin working towards the betterment and protection of our people, not just Indian people, not just Asian people, not just white people, not just black people, but

the four roads that come together, to come together and walk together for the betterment of all of our people.

A VOICE: Mr. Chairman, Kris Pfanku is here now.

MR. McBRIDE: Okay. If she would step up right now.

MS. PFANKU: This morning and afternoon we've heard the problems with high-level nuclear waste disposals spelled out by concerned, informed citizens, and I want to talk to you now about the same problem from a slightly different prospective, military nuclear wastes.

This is more a problem now than ever before with the Pentagon planning for at least 17,000 nuclear weapons in the 1980's. I am convinced that the U. S. can do without more nuclear weapons. Bombs are dangerous enough in themselves, but what to do with high-level waste from their production is a danger that must be confronted immediately. It's sad enough that we've spent billions of dollars on nuclear bombs that threaten to destroy human civilization, but also depressing is that those same billions have also bought us the monumental problem of safely disposing of nuclear wastes that threaten human health and lives.

Ninety-nine percent by volume of all high-level wastes in the U. S. have come from nuclear

reactors for military purposes. Seventy-five percent of low-level nuclear wastes have also come from military-related activities. For 35 years nuclear wastes have come from military programs. Only recently, however, has much attention been paid to the permanent storage of those wastes. Wastes were stored temporarily, and the problems of final disposal were always put off until tomorrow. Tomorrow is here.

From my point of view it would be ideal if we would stop making superfluous bombs and kill at least two birds with one stone, reduce the risk of nuclear devastation and halt the vast increases in high-level nuclear wastes from weapons production. But even if all nuclear reactors were shut down today and not another hydrogen bomb produced, we would still have a mountain of nuclear waste that must be kept from harming future generations. Yet we are far from ending the production of new military nuclear wastes. It is estimated that under current Pentagon plans over 17,000 new nuclear missiles will be made in the U. S. over the next 10 years. If the Reagan Administration further expands nuclear weapons programs, the number could be even higher.

Although nuclear materials from dismantled weapons will be used in some of the new weapons, the plutonium processing plants will have to step up production

to meet the new demands. These plants will produce more nuclear wastes as will nuclear power plants.

Meanwhile the Federal Government has still not been able to decide on how and where nuclear wastes will be permanently stored. Several facilities related to nuclear bomb manufacturing have had serious and unresolved problems. At the Savannah River plant 13 steel tanks had to be built to replace old tanks in danger of leaking. But removal of the waste from old tanks is not easy. Much of the material has caked or formed sludge inside the tanks and cannot simply be pumped out. Two additional nuclear production reactors and three experimental reactors have been shut down and will sooner or later have to be treated as nuclear waste.

At Idaho National Engineering Laboratories there is 388,000 cubic feet of high-level nuclear waste. Thirteen reactors there have been shut down. All of these reactors will someday have to be dealt with as nuclear waste.

At the Hanford Reservation in Washington 422,000 gallons of liquid waste have leaked into the soil as of 1973. More than one-third of the oil tanks were either leaking or about to leak. Not only have leaks occurred, but the storage tanks themselves pose a disposal problem. Since the sludge remains highly radioactive,

no one has yet figured out how to get it out safely for permanent isolation. And in addition to the main power reactors at Hanford, there are 10 reactors that have been shut down. These must be treated as nuclear waste.

Reactor shutdowns are numerous. Nuclear Fuel Services Plant in New York shut down in 1972. At Oakridge, Tennessee five reactors shut down. At Los Alamos, New Mexico seven reactors shut down.

Those who think we need more nuclear weapons, those who think we have too many, those who want more nuclear power plants and those who want to shut down the existing ones should all be able to agree on one thing. We need to find the safest possible means of disposing of the nuclear waste that already exists. Research and testing have so far produced no definite answer, and it does not seem that one is coming.

Many questions still need to be answered. What form should the waste be converted to for disposal? What sort of containers can be used that won't leak? Where should it be buried, or should we launch it into space? None of these crucial questions have been answered, and no one can begin to propose sites for a nuclear dump until those questions have been researched and answered accurately. Specifically each potential location has to be studied carefully for possible future geologic changes

that might disturb the wastes and make more likely their spread into the environment. The flow of ground water past the area must be understood and predictable so that wastes are not dissolved and carried away. It is also absolutely essential that a variety of geological experts not connected with the government be consulted and have access to relevant information. Further, there should be independent oversight and regulation of all Department of Energy activities, including the management of military-related nuclear waste.

The danger now, however, is that the government will rush into a decision before all the facts are in. The nuclear waste we have now has to be put somewhere, but nowhere near enough effort has gone into studying, testing and debating the problems. At the very least we do not know yet whether we can store high-level nuclear waste safely yet or not. Until that is determined, Yucca Mountain in Nevada or anyplace else in the United States must not be used as a dump for high-level nuclear waste.

Thank you.

MR. McBRIDE: Thank you.

Is Glenn Miller here?

John Vigoren?

Dagmar Thorpe?

Jim Buckley?

MR. BUCKLEY: My name is Jim Buckley. I am a student at UNR and have lived in Nevada for five years. I am concerned about the potential siting of a high-level waste repository in Nevada. I have family and friends in Las Vegas, and I would like to continue visiting Southern Nevada. I believe that Yucca Mountain is an unsuitable site to place a repository.

Las Vegas has a population of over 500,000 people. If a large-scale accident or sabotage attack occurred near the test site, Las Vegas could have extremely adverse effects.

The tuff zones underlying Yucca Mountain where wastes may be buried are densely fractured and faulted. These faults could provide pathways for water to enter into the repository, instigating cannister corrosion and providing a carrier vehicle for the resultant radioactive leachates to ground water supplies. Ground water contamination would render underground water bodies in this region unusable for thousands of years.

If Yucca Mountain does become the site, bore holes they have on top of Yucca Mountain would have to be sealed to prevent water intrusion into the repository.

Tuff regions under Yucca Mountain are of two types: Nonwelded tuffs, which may contain 10 to 25

percent water; and welded tuffs, which releases water vapor when exposed to repository temperatures. The water content of the tuff could add to the potential for cannister corrosion and eventual ground water contamination.

Atomic weapons testing has occurred at Yucca Mountain. These explosions have created considerable stress on the tuff formations, created additional fractures and added to the site's geologic and hydrologic unpredictability.

Geologic waste repositories currently under study utilize ventilation systems. If and when radionuclides leak from their cannisters, they may produce radioactive gases. These gases could find their way to the biosphere via the vents. Any accidents or sabotage attacks inside the repository prior to burial could result in radioactive releases, which also could be emitted through the ventilation system. These releases from the facility could pose health hazards to downwind residents.

I am concerned with the limited authority Nevada may potentially have if the waste repository is to be located at Yucca Mountain. The State of Nevada, under current law, would have limited or no authority over the transportation of high-level wastes in the state and their eventual burial in Nevada's soil. Nevada would have little or no say on the approval of shipment routes. Unless Nevada, if it is chosen as the site, is permitted some authority

over transportation, the routes of high-level waste shipments could pass through Reno or Las Vegas. Establishment of new routes could prove impracticable to the Nuclear Regulatory Commission and the Department of Transportation. Nevada may not receive advance notice of these shipments. If they don't receive advance notification, it seems that an emergency situation might not be adequately dealt with.

Nuclear reactors' waste would be shipped commercially as the Federal Government will not take responsibility for commercial waste until it reaches the repository site. The only governmental bodies receiving advance notification of high-level waste shipments are NRC and DOT; shippers have to comply with their regulations.

In my mind, commercial shipments would be less secure than federal shipments against sabotage. Commercial shipments would necessitate a small army of heavily armed guards against potential saboteurs. Giving such power to a commercial industry could be hazardous to Nevadans. The Price-Anderson Act limiting nuclear reactor's financial responsibility to not exceed 560 million dollars must be expanded to at least pay for one-half of cleanup cost in the event of an emergency, especially if commercial shipments are to be handled by the nuclear industry.

The shipping casks currently in use for transporting high-level wastes and expected to be used in the

future are supposed to be tested by the Department of Transportation.

Mr. Vieth, in your movie on cask testing did the casks that actually transported high-level waste from Florida to the Nevada Test Site undergo such thorough testing as you implied in the film? I'm talking about the casks that were first shown in the film.

MR. McBRIDE: We'll get to that when you finish. Okay?

MR. BUCKLEY: The Department of Transportation has not subjected these operational casks to full-scale realistic tests. It is unknown how safe these casks are, and the consequences of an accident or leak are great. Sandia Laboratories studies indicate that a shipping accident could cost up to 700 million dollars to decontaminate accident sites, and a successful sabotage attack could cost up to two billion dollars. Scores of people could die and hundreds of latent fatalities could result. Studies done by independent professional health physicists indicate that in the event of a successful sabotage 1300 people could immediately die and hundreds of thousands of latent fatalities could develop. These accidents or sabotage attacks have the potential of contaminating vast regions that could never be completely decontaminated. Hundreds and even thousands of people might die.

The Environmental Protection Agency has stated that normal exposure in transportation would be in direct radiation to persons near shipments; radioactive materials could be released only due to accidents. According to this statement, if shippers stopped anywhere in Nevada, their casks would pose a health hazard to any persons nearby. The Department of Energy sets standards for permitted levels of radioactive emissions from casks. Shipments of high-level waste would be emitting radiation in Nevada as soon as they entered its borders. Studies have shown acceptable levels of radiation to be grossly underestimated. In my opinion these shipments through Nevada would have adverse health effects on Nevada's citizens even though complying with existing regulations.

The Hanford Reservation buried low-level waste contaminated with plutonium in a shallow, backfilled trench. In 1972 the Atomic Energy Commission concluded that the plutonium concentrations at the bottom of the trench could be great enough to cause a spontaneous reaction and even a low-order nuclear explosion. They ordered the site to be excavated.

High-level wastes stored in geologic repositories could have similar disastrous consequences. If and when wastes escape through eroding cannisters, they would migrate towards a ground water source. Radionuclides

migrate at different rates; plutonium is a relatively slow migrator and could concentrate in the uppermost layers of the radionuclides. There is a possibility that the plutonium could attain critical mass and set off a nuclear explosion. Nevada residents in the vicinity could have serious health problems if they were still alive.

A Department of Energy official once said that those who share in the benefits of nuclear power should help pay its costs. Nevada has no nuclear power plants and should not be forced to accept reponsibility for nuclear wastes. The Department of Energy told the General Accounting Office in 1979 that prior nuclear activities in Nevada have resulted in a de facto commitment of the Nevada Test Site for long-term nuclear uses. Past irresponsibilities at the Nevada Test Site should not become the basis for Nevada's potential host-state status.

I believe that the exposure standards to radiation workers and the general populace should be extensively reviewed by the Environmental Protection Agency. Exposure standards should be based on all radionuclides that have the potential for release into the biosphere, and critical-organ doses and whole-body doses should be based on exposure to all of the concerned radionuclides instead of a select few.

I feel the Hanford Reservation should be

used as it has suffered greater radioactive damage than the Nevada Test Site. Hundreds of thousands of gallons of liquid high-level waste have already leaked into the soil. Solidification and vitrification attempts thus far have proven ineffective on a large-scale basis. I was also wondering if the Department of Energy plans to accept liquid high-level waste at Yucca Mountain.

If reprocessing of commercial waste is going to occur in the future, all consumers of nuclear-produced electricity must be notified that they are inadvertently paying for the production of nuclear weapons.

Thank you.

MR. McBRIDE: I have two questions here I'd like to read for the record. One is from Allen Peters.

In the event the Department of Energy should be dismantled through legislative mandate, who will bear state responsibility for overseeing the site characterization process and other concurrent activities?

Mr. Loux, could you speak to that? Could you come up to the microphone and speak to that?

I'll read it again in case you didn't get it.

In the event the DOE should be dismantled through legislative mandate, who will bear state responsibility for overseeing the site characterization

process and other concurrent activities?

MR. LOUX: Mr. McBride, the proposal that was put forth by the Assembly Ways and Means Committee I think identified the director's office of the Department of Human Resources.

MR. McBRIDE: Thank you.

We have another question from Jeri Robinson.

What studies have been made regarding the containers' integrity within the repository vis-a-vis corrosive or thermal activity?

Mr. Vieth, would you please answer that?

MR. VIETH: Generic research, that is, the understanding of the materials that would be used to build the waste packages, have been conducted by Littell in Columbus, Ohio. They have had a number of subcontractors, including people such as Rockwell, Lawrence Livermore Laboratory and a few other organizations, looking at the materials that would go into the construction of waste packages. In addition, Westinghouse has been responsible for developing conceptual designs of what a waste package would look like and selecting materials or recommending materials that would be compatible with corrosive environments in which they are located.

I hope that answers the question.

MR. McBRIDE: The second question is, how

far from a fault area or other seismic activity area is considered safe?

MR. VIETH: I really don't know how to answer that question in view of the fact there are a number of various things in terms of how big the fault is, what is the maximum amount of ground motion that might be generated by the fault and so on. So I mean there's no simple answer to that kind of question.

MR. McBRIDE: Regarding the NRC licenses, are the licenses open-ended, or does it limit and describe which material might be deposited?

MR. VIETH: You mean the license for a repository?

MR. McBRIDE: Yes.

MR. VIETH: The license that we will receive from the Nuclear Regulatory Commission would be a license to receive radioactive material and to place it in the ground. That license would be effective until the Nuclear Regulatory Commission shows to determine that the repository was full. I believe at that time it would be assumed that the repository could be sealed with its contents, and at that time the license would be terminated.

MR. McBRIDE: There's another question.

How was it determined that certain sites on the test range would be precluded from further

consideration due to the proximity of potential nuclear testing areas and that Yucca Mountain could not be affected by these same criteria?

MR. VIETH: I believe between 1977 and 1978 a panel of people from the weapons community looked at that situation, and the weapons community decided that the area of the southwest corner of the test site, based upon an understanding of ground motions from weapons tests, would not represent a limitation on the content of weapons test.

MR. McBRIDE: Thank you.

Is Glenn Miller here yet, Glenn C. Miller?

I'm going to break here for 10 minutes because we're ahead of program, and some of these other people may not be here yet.

(A recess was taken.)

MR. McBRIDE: Ladies and gentlemen, I ask you again -- those that have been here this morning with us, bear with me -- I'll repeat for the newcomers so that you understand who we are and what we are trying to do.

On my left is Bob Revert. He's the County Commissioner from Beatty, Nevada and a lifetime resident of the State of Nevada. On my right is Dr. Peter Krenkel. He's the Dean at the School of Engineering at UNR, and I am presently Chairman of the Board of Regents.

We are not connected in any way with DOE.

We are public panel members. Our purpose is to hold this open hearing to receive your comments regarding the site, regarding a proposed Environmental Assessment Plan and a Site Characterization Plan which will be developed.

We have a number of people that are still on our program, and we will be here until 7:00 o'clock this evening. If by any chance you have any additional data you would want to furnish in writing, it will be received by the DOE offices in Las Vegas. The address is outside at the registration desk. They can give you that address. The written comments will be received through April 25. If you have anything to say, we encourage you to submit those.

Mr. Buckley had a question which I asked him, so we'd have it for the record, to have typed up, and we have it here, and I'd like to read it.

I'll read you a question, Mr. Vieth, that Mr. Buckley has submitted, so you can stop by the podium to answer it, if you will, please.

Will high-level liquid radioactive waste be accepted at Yucca Mountain?

MR. VIETH: No high-level liquid radioactive waste will be accepted at Yucca Mountain. As a matter of fact, the regulations make specific requirements for waste from a reprocessing plant that requires that the waste can

only be maintained in liquid form for five years after reprocessing, and that it can only be maintained on the site of the processing plant as solid waste for another five years. It is required that waste delivered to a repository be in the solid form.

MR. McBRIDE: There's another part of the question.

Were casks used in the actual transportation of high-level wastes from spent fuel tests subjected to the same thorough testing as the casks in the film?

MR. VIETH: The casks in the film, I believe, met the requirements of the test that NRC uses to license the cask. There's a four- or five-step process that the Nuclear Regulatory Commission uses to establish whether or not a cask can receive a license. The cask that we use for the transport of the spent fuel elements was licensed by the Nuclear Regulatory Commission.

MR. McBRIDE: Does that answer your question?

MR. BUCKLEY: Not really.

MR. McBRIDE: I think what he meant was, did it go through the same testing procedure.

MR. VIETH: It was not put on the back of a truck and run into a wall at 80 miles an hour, and it was not run over by a train going 80 miles an hour prior to reusing the shipment of spent fuel.

MR. McBRIDE: But it met the same specifications?

MR. VIETH: It met the same specifications that NRC uses to license casks.

MR. McBRIDE: Is Glenn Miller here yet?

MR. MILLER: I apologize for not being here when I was scheduled to be here. I support that way of doing things because it makes it a lot easier.

My name is Glenn Miller. I'm Chairman of the Toiyabe Chapter of the Sierra Club. The Sierra Club is most interested in this issue and, as you might expect, is interested nationally, and the comments I would make largely, I believe, reflect current Sierra Club policy.

High-level waste is certainly a most complicated issue, and it's one that the public doesn't understand all that well. There are good uses -- medical uses, research uses and nuclear power -- for those, I think, that support nuclear power, and then there are all the adverse effects from radiation, including cancer and the various adverse health effects that occur. I think Nevadans have probably and Utahans have probably received more adverse effects from nuclear radiation than any other single area in the country. The testing program in the 1950's has come back to haunt us in the last several years, and particularly over the last year it's been the subject

of lawsuits in Utah. So I think it's fair to say that a large part of the population across the country, but particularly in Nevada and Utah, have great concerns about radiation, and these very concerns, I think, are something that should be considered when siting a high-level waste repository.

Whether they be real or imaginary, they are concerns that manifest themselves in adverse health effects. Such things that people may be very concerned about -- people being very nervous, health effects that are caused simply by psychosomatic effects -- maybe not due -- probably not due -- to radiation itself, but certainly due to the idea of having a nuclear waste repository in the area. In fact, those somewhat imagined effects are in fact, however, a result of radiation, and those should be considered. They may not be due directly to radiation itself, but they are an indirect effect that probably will have the greatest source of adverse health effects.

Secondly, from a land-use prospective we have always been under the assumption that when a high-level waste repository was being discussed, it was being discussed for the test site. And this morning I saw the slides, the teardrop that was expressed primarily off the test site, and my question is, why, why can it not be put on the test

site itself where the contamination has occurred? You're getting off the site, taking more land in Nevada for projects related to nuclear and/or military projects, and it's one that I think Nevadans have had it up to their ears with. I'm sure you may or may not be aware of a new proposal in Central Nevada for a Navy expansion, but that's a great concern for Nevadans.

Could I ask that question, why could it not be sited on the test site entirely? Is that acceptable, to ask a question?

MR. McBRIDE: I'd like to save those until when we're finished.

MR. MILLER: Okay. That's one question I'd like to ask.

And if it can be put back into the test site, I think that would be better since that land is already quite contaminated.

Second, I think the question of transportation has been covered over and over again, but I just think it's important again to consider the relative merits of transporting across country from the heavy center of nuclear energy on the east coast out here all the way to the west and compare that in relation to some of the areas in the midwest and east that are closer to most of the sites.

I think hijacking is one that should be

considered. Once a high-level repository is on line, if it is going to be on line, there's going to be a very great concentration of vehicles going across the country. The potential is not necessarily that of having a weapon itself, putting together the radionuclides as a weapon, but simply having some of the spent fuel rods and having the threat of driving through a city and dropping them off on each block, I think, would be enough to cause people concern. So that problem of hijacking is one to be considered and the length the trucks would have to go to get to Nevada.

The last comment has to do with the area of Ash Meadows in the Amagarosa Desert. I would like very much if the EIS would consider the potential of water moving into that area. There is 29 species of fish and plant life in that area that exist nowhere else in the world, and if these were to be contaminated, I think it would be a major loss. I have some background in water movement and soils, and I have some understanding of how extremely difficult it is to predict those things, and I think it should be at least analyzed in as much depth as possible to determine how far they will be transported. Ash Meadows is in the basin, I believe, of at least one side of the Yucca Mountain.

Thank you.

MR. McBRIDE: Mr. Miller, if you would have

the girl out there type out that question, then we will have a record of it, and we will answer it later.

DR. KRENKEL: Are these rare and endangered species?

MR. MILLER: Two of them are listed. There's -- they are rare and endangered very definitely. There is a lot of controversy right now about those species. They meet all the criteria for rare and endangered species. Two of them are in current emergency listing, and there's some degree of hope anyway that they will be made permanent. But they exist nowhere else in the world, and they satisfy all the criteria for rare and endangered species.

MR. McBRIDE: John Vigoren?

MR. VIGOREN: Good afternoon. My name is John Vigoren. I've been in Nevada for 22 years now. I'm a carpenter, and I was on the fire department for 12 years, so I have a little bit of experience with hazardous materials. I only have two points to make here.

My first point is, I think the people that are producing this waste have a moral obligation to keep it where they make it, and I think that would maybe help them solve the problem of storing it, which has not been solved at this point.

My other point is that transportation of these wastes, on our highways basically or any way they

come into the state, leaves us a lot of problems to deal with, accidents, and we don't have anyone, no one, who can deal with those problems. And I don't know where the crews are, but they're a long way from here. And if you get some of these cannisters turned over on an interstate highway, you're going to have a real problem here. If we do become equipped to deal with this, we're talking about a cost to the state that is going to be very high, to deal with radioactive-waste proximity suits, crews that can be available on short notice and be flown anywhere in this state wherever an accident happens to occur. It's a big cost and a big danger to the people of the state, and I think the people that are producing the wastes are morally responsible to handle it themselves. I think Nevada has done more than their share in dealing with the nation's atomic energy needs. Since the test site has been working for so long, I think the states who are benefiting from the nuclear power should deal with their own waste.

Thank you.

MR. McBRIDE: Thank you.

Mr. Schofield hasn't arrived yet, has he?

Dagmar Thorpe?

How about Alyce Williams?

MS. WILLIAMS: My name is Alyce Williams, and I am representing the United Paiutes, Incorporated

today.

For the organization we are going on record as opposing the site on Yucca Mountain for a dump site because of the many reasons stated today, that we do not wish to have added any more poison than that already in the area, that we support a moratorium on all nuclear waste generating devices until such time as science finds the means to dispose of these wastes in a fast and safe manner.

We will have to add an endangered species of Southern Nevada if this does go into effect. And being an American Indian, I will say that we almost got snuffed out with small pox. Now, do we have to worry about it again with radiation?

Thank you.

MR. McBRIDE: Dr. Fred Rogers?

How about William Rosse.

MR. ROSSE: My name is William Rosse, Sr. I'm the Chairman of the Shoshone Tribe here in the State of Nevada. We are very close to the area they're talking about with this waste site, and we don't feel it a very good thing.

What I want to state first is, you know, years ago my people lived in this country here, and they lived here for several thousand years. And the European people came into this country, there was a change. When

the first Europeans came into this country, you could see the country the same as it was at the beginning. Everything was there. My people never destroyed anything. They lived with the environment, everything was there for each other. And then civilized man came into this country, and then you see things are being destroyed, everything is paved. They come in with such weapons as this atomic energy weapon and stuff another, yet they're called civilized. And our people were not called civilized, our people were called heathens because we were so dumb that we couldn't do anything for ourselves, but we managed to live with the environment, not damaging anything that was there. And when we left, everything was clean just like when we came. And civilized man, everything he comes in touch with seems like it has changed considerably. They pave all they can and create all of these here fancy arms to fight their wars with. Us poor people, we fought with bows and arrows, knives and sticks and whatever we could get ahold of. And now civilized man has created something here that needs something done with it. It was created to help a civilized man in their wars to win their wars and without a thought of the future, no thought of what they're going to do with the waste that was created by this stuff, and this is what we're faced with now.

Now, take here in the United States. We are

looking for a place to dump all this waste, and likely the Federal Government has a mental block because the only place they can see is the State of Nevada as one and possibly Utah, these western states. We are supposed to be their garbage disposal, and it appears like this is what's expected from us. We don't need anything like that around here. We feel the people that need to live with this type of environment, that feel they're secure with this atomic electricity-powered plants and stuff another like that, should take care of their own waste. Or else maybe if they had to take care of their own waste, they would think twice on producing those power plants or any of the other power situations.

Now, there's been a lot of studies done to try to find a place to put this radioactive material and low radioactive material and all this stuff, yet it's piling up and they haven't found any place.

It looks like some of that time should be turned into time trying to figure out a way to counteract this radioactive waste that we have to live with. There should be a way that they can decontaminate it like they would decontaminate anything that is exposed to radiation. There should be some way that they can come up with an idea. Science is so far advanced right now, they say, that they should be able to come up with the things. We can go

to the moon and everything else, yet there is nothing set out to figure how to do away with this radioactive waste, and it's something that really needs to be done here.

The other thing I forgot to mention, I am a member of the Citizen Alert group too. I mean I'm speaking for them right now, but hopefully -- our people, we didn't have such a thing as Citizen Alert group or any organization to let us know what's happening in this world, and we kind of lost our ways because we didn't have nobody to help us to realize something was happening to us, and we didn't act, and we all sat back. And looking through the building here now -- I've been here practically all day since the meeting started, and I would say maybe there's 250 people came through here -- I know that don't represent not even a portion of Reno itself. And I think a lot more people ought to take the interest in it and put out their input for this idea of putting this radioactive waste here in our state. We have contributed more than our share to the war efforts and everything else so far. Apparently Nevada is the most highest contributing state in the union.

And that is about all I have to say right now. Thank you very much for letting me speak.

MR. McBRIDE: Thank you.

Dagmar Thorpe?

MS. THORPE: My name is Dagmar Thorpe, and I'm representing Native Nevadans for Political Education and Action, which is an Indian and environmental advocacy and research organization.

We vehemently oppose siting of a high-level radioactive waste repository at Yucca Mountain or at any other location within the State of Nevada. We refuse to permit Nevada to become the national sacrifice area for the hazardous waste and filth generated in this country.

Nuclear power and its resulting waste is a crime against humanity and against the natural world. Do we as human beings have the right to cover the earth with our filth and, in return, expect her to provide us with nourishment so we can live? Do we as human beings have the right to leave the next several thousand generations with the result of our inexcusable stupidity?

The issues involved in nuclear power and radioactive waste are more than a check list of technical problems of transportation, hydrology, air quality, economic development or socioeconomic impact. These issues involve the entire spectrum of life on this planet.

The entire nuclear process, from mining and its residual mill tailings, its use in military weapons and power generation, its transportation and ultimately its radioactive waste, is an industry of death. The questions

involved are the most profound issues which human beings must deal with in the twentieth century. The question cannot be avoided by dumping this filth inside the earth like an ostrich hiding its head in the sand and hoping the problem will go away. This is one problem which will not go away if we try to ignore it.

The use of nuclear power should not have been developed until the full ramifications of its use were explored. To proceed any further with this technology of death is to invite disaster upon the earth. It is time that we assume responsibility for our actions on this planet. It is time that we no longer permit technology to run away with itself uncontrollably. We continue to create technological monstrosities,some of the impacts which may not be known for decades.

Witness the impact of aerosol sprays on the earth's ozone layer, the impact of fossil fuels and resulting acid rain, and the ultimate destructive force, the impact of nuclear power on the future health of our planet and our people. What other technological horrors are presently being devised?

When the native people of the Iriquois confederacy make decisions concerning the future of their people, they must consider the impact seven generations ahead. When the United States makes decisions with its

myopic vision, it looks only at its immediate objectives. If we as human beings are to survive on this planet, we must move very cautiously with these manmade technologies, examine our actions and the full impact on the natural world, and stop any technology which is inherently destructive.

Why worry about protecting the United States from nuclear war when we are in the process of committing suicide?

MR. McBRIDE: Thank you.

I now have a question from Glenn Miller which I'd like to have you answer for us, if you would, please, Mr. Vieth.

Why is the proposed area primarily off the Nevada Test Site?

MR. VIETH: With geologic disposal you have to accept what Mother Nature gives you and where it is. The formation of Yucca Mountain, that portion which we believe has a formation below the surface that has the characteristics that are suitable for disposing of radioactive waste, happens to be located in that piece of land mostly to the west of the test site. In my view it would be very nice if it was more on the test site than it is, but that happens to be where that set of rock is.

MR. McBRIDE: The second part of that

question, which you may have already answered, why not keep the repository exclusively on the test site?

MR. VIETH: In 1977-78 when we began to look at the southwest corner -- that 245 square miles that the weapons community felt that if we were to locate the repository in that area, it would not represent a threat to the weapons test program or a limitation on it -- we looked at a number of formations in that area. The one that appeared to have the characteristics that would potentially have the highest probability of providing a repository was Yucca Mountain. That's simply why we did it. There were a number of other formations we looked at, but the one that looked like it would work was Yucca Mountain.

MR. McBRIDE: Thank you.

MR. MILLER: Can I make a quick response to that?

I recognize the scientific validity. I don't disagree with that. But what I do have a problem with is the reason that was expressed this morning and has continued to have been expressed over the last several years, that Nevada is a primary site consideration because the test site is already contaminated, and now you're proposing an off-site and noncontaminated area. I think the record should reflect and the decision making should

reflect that Nevada then is no different than any other state, that it's a separate area from the test site, that the area to be considered is not contaminated at this point. Maybe it's closer to the contamination, but it's not contaminated now. So consideration for Nevada should be no different than any other state. And I've gotten the feeling over the last few years that Nevada has been considered predominantly because of the test site, and that reason no longer, I think, is valid.

MR. McBRIDE: How about Joseph Griggs?

Jo Anne Garrett?

MS. JOHNSON: Joseph Griggs nor Jo Anne Garrett will be here today. Their car broke down.

MR. McBRIDE: Dr. Fred Rogers?

Robert Henry?

MR. HENRY: My name is Robert Henry. I'm representing myself. I don't belong to any particular organization. However, I have a few comments I would like to make.

First of all, I am not opposed to nuclear power. However, I am opposed to a high-level radioactive waste disposal site here in Southern Nevada for a couple of reasons.

Primarily one reason is because I'd just as soon have somebody else have it instead of us because

of how much we've already done so far for nuclear power, and the other reason -- another reason being that, in my own opinion, nuclear waste disposal is being handled in the wrong way.

A typical power reactor to produce electricity, its efficient useful life is expended so only about three percent of the material has been used. Right now all that remaining 97 percent of the material is currently just being -- trying to find a disposal site to get rid of it. With reprocessing about 90 percent of that remaining material can be recovered and used again. Why try to dispose of the material that's perfectly good and usable again? You can then reprocess the spent fuel rods, put them in another core and use them over again. This process can continue until only about 10 percent of the total amount of the original cannot be used again. So strictly from the aspect of conservation, if we're going to use nuclear power for fuel, there is only a finite amount of nuclear fuel available, and somebody else is going to run out too. So with reprocessing you can use virtually all the fuel over and over again until the final result, only a very small amount cannot be recovered for reuse.

As far as disposing of that which cannot be used at all again, it is very expensive. However, my own opinion, strictly from a health and welfare standpoint,

the best way to get rid of it is to put it in rockets and fire it into the sun. Now, I realize that's a very expensive method because of the amount of nuclear waste generated over the years. However, from the standpoint of trying to protect people, from my standpoint that's the best way to get rid of it. For all practical purposes, all that was there wouldn't have any adverse effects on the earth whatever except for the cost, which I realize would be expensive.

That's all I have to say.

MR. McBRIDE: Thank you very much.

Since there are no other speakers waiting to speak at this time, we will stand recessed until someone appears that wants to speak to the group. I reiterate, we will be here as published until 7:00 o'clock this evening. If you have any friends that are getting off work that want to come by, we will be happy to listen to them. We'll give them 10 minutes just like everybody else. So we will come back when somebody comes by and says they wish to speak.

Thank you.

(A recess was taken.)

MR. McBRIDE: I would like to read a statement into the record that has been submitted by Jim Buckley.

"The Department of Energy has two roles, one of promoting nuclear power and one of disposing of its waste. I believe that this agency should be dissolved and two different agencies could be established. The agency in charge of disposal would be composed of individuals with no affiliations with the nuclear industry."

Dr. Fred Rogers?

DR. ROGERS: I didn't realize that I would be delaying your proceedings by appearing at 5:10 instead of 5:50. I apologize for that.

I'd like to thank the DOE for making a chance for me to speak, although my request got in a little bit late.

I do want to emphasize that I am speaking as an individual, and I would like to respond to Item 2 under the purposes of the hearing in the statement of the presiding officer. I have one paragraph roughly followed by four recommendations that I would like to submit for your consideration.

Professionally I am involved in the measurement of and the characterization of small particles in the atmosphere -- and when I say "small," I mean one micron or smaller typically -- and I'm also recently

involved in the measurement of their retention in the human lungs. So my concern mainly or my recommendations stem from an understanding of respiration and the way that particles and gases are retained in the lungs.

I'd like to just briefly point out that for much the same reasons in each case, there's a whole class of particles which are very hard to retain in any sort of container. I've seen time and again in laboratory work that they will very disobediently go through any sort of crack or pore in the container very easily. And again, for much the same sorts of reasons, particles in this size range are adept at remaining suspended in the atmosphere for extended times. For the most toxic radioactive particles, I would say that it's out of the question that even a few respirations could result in the retention in the lungs of a mass, a retained mass that could result in significant tissue damage. But let's be conservative and speak of something like 100 respirations, and most of us can perform 100 respirations in a few minutes.

I want to conclude this sort of background paragraph, though, by stating two areas that are unknown to myself, and certainly my recommendations go along with this admission, that there are two very important unknown areas as far as my own involvement is concerned. I've made a brief attempt to find data in the literature. I've had

very little luck, and I suspect there isn't too much.

The first area I would say is, what does the past experience with the packaging of high-level waste show? For example, are there measurements of released gases or released aerosols, and size distributions brought me to go along with the aerosol measurement.

The second unknown area is simply, how is the venting in the waste chamber accomplished? I would presume that any exhaust flows pass through high efficiency filters, but, again, I don't know. I frankly don't know what the situation is. It's a little harder to trap gases in exhaust flows.

I'd like to conclude, then, with four recommendations that I would like to pass on for consideration.

The first is, I suggest consideration of the extent to which one micron and smaller radioactive particles are released during the deposition operation and then, as a separate issue, during long-term storage.

Two, I think it would be highly recommendable to provide an on-site monitoring system capable of identifying radioactive particulates and especially those of a few microns and smaller in size and, at the same time, their concentrations.

Three, passing on the question about gasing

or release of gases by containers. Again, I don't know if this has been done, perhaps it has. I would recommend that there be some provision for the possibility that gases could be released through rupture or other failure of the packaging.

And four, then again and parallel to the recommendation for particulates, a separate means of radioactive gas monitoring.

Again, I want to emphasize that I am speaking as an individual, and these recommendations are simply made as a private citizen with some professional background.

Thank you very much.

MR. McBRIDE: Thank you. That's the kind of suggestions we need.

Do you have any new speakers?

Another 20-minute break, then, or until somebody shows up.

(A recess was taken.)

MR. McBRIDE: Our next speaker will be Mr. Jim Schofield, who is Speaker Pro Tem of the Nevada State Assembly.

MR. SCHOFIELD: Thank you, Mr. Speaker.

Members of the hearing panel, my name is James Schofield, State Assemblyman from Assembly District

12 in Clark County, Nevada, Las Vegas. Thank you for the
65 opportunity to address you on this most important issue this afternoon.

I'd like to discuss three major topics with you: First, the Assembly Joint Resolution, which I have introduced in the Nevada State Legislature in this 1983 session, which urges Congress to prohibit storage of high-level radioactive waste at the Nevada Test Site; second, the impacts; and third, their mitigation.

In introducing this Assembly Joint Resolution along with several other legislators, because of the number of concerns I have over the designation of Yucca Mountain as a national high-level radioactive waste repository, primary among them being the health and the safety of the citizens of the State of Nevada. The reasons for the resolution include the following:

Number one, the United States Department of Energy has already been investigating, evaluating and examining areas at the Nevada Test Site for the purpose of construction of a facility for retrievable storage of high-level radioactive waste or a repository for high-level radioactive waste;

Number two, the State of Nevada has for more than 30 years been subjected to the surface and subsurface testing of nuclear devices, and for more than

66

19 years a burial site has been provided for low-level radioactive wastes near Beatty, Nevada;

Number three, after reviewing and evaluating the Environmental Impact Statement which was prepared by the Atomic Energy Commission, the State of Nevada made recommendations to the U. S. Department of Energy and proposed certain conditions that should be met by the Department before any further consideration is given to the Nevada Test Site as a possible site for the storage of high-level radioactive waste. Among the conditions were the following:

A. Air cooling would be used at the storage facility;

B. Rail transportation avoiding the Las Vegas metropolitan area would be established to the site;

C. Appropriate state agencies and local governments could cooperate in and contribute to the development of the administration's site specific Environmental Impact Statement;

D. It would be satisfactorily demonstrated that adequate radiation safeguards for storage and transportation can be developed and will be implemented;

67

And E, that public hearings will be held at least in four counties in the state prior to choosing a specific site for the facility;

Item 4, the United States Department of Energy has not acknowledged the receipt of those recommendations or complied with the conditions proposed by the State of Nevada. For these reasons, the Nevada Legislature, upon adoption of Assembly Joint Resolution 11 of the 1983 session, issues the Congress of the United States to prohibit the construction of a temporary or permanent storage facility or repository of high-level radioactive waste at the Nevada Test Site.

Furthermore, if the Nevada Test Site, over the objections of the legislature and the governor, is chosen as a temporary or permanent site for storage of such high-level radioactive waste, the United States Department of Energy should:

Number one, provide sufficient flexibility in its schedule for the siting of a temporary or permanent storage facility or repository to allow a thorough evaluation by the State of Nevada of the Department's activities relating to the storage of such radioactive waste. If such action results in any serious concerns over siting or other activities of the Department and its subcontractors,

all such activities should cease until those concerns have been resolved;

Item two, hold public meetings in the vicinity of the site at least twice each year to solicit comments and to inform the residents of the area in which the site is located off the Department schedule for the siting of the facility or repository and related construction activities;

Three, pay for all costs incurred by the State of Nevada for the evaluation and mitigation of the adverse social, economic and environmental effects of those activities upon the state and its residents;

And four, ship all radioactive waste by rail transportation to avoid the metropolitan area of Las Vegas.

As you can see, this resolution encompasses a great deal. I think that upon its adoption the sentiment of the Nevada Legislature would be obvious.

If Yucca Mountain should be designated over our objections, there are measures I feel could and should be taken to mitigate both short-term and long-term impacts of site development. Among the impacts is the likely accelerated highway deterioration from increased heavy vehicle use. Additionally, if traffic accident rates remain constant, increased truck traffic will mean an

increased number of accidents. In the former case highway funds will have to be provided, while in the latter more traffic safety response will be necessary. There can also be depression of the Southern Nevada economy due to the stigma of high-level radioactive waste repository nearby. Not only will tourists think twice about vacationing in Southern Nevada, but business and potential employees will have the disincentive for locating in the Southern Nevada area. There will, of course, be numerous social and economic dislocations associated with the construction phase.

At a minimum we must have both short-term and long-term impact assistance. There is already precedence in several other areas, for instance, in New Mexico, related to the WIPP development. Furthermore, over the long-term, federal dollars for economic development, perhaps 50 million per year initially, should flow to Nevada for the life of the repository.

I also recommend the expenditure of at least a quarter of a million dollars by the Federal Government to study the potential for the development for research laboratories, an engineering school whose program focuses on those aspects of radioactive waste management underway at the Nevada Test Site.

Monitoring, enforcement and perpetual care

and maintenance costs must be born by users of the potential site, and this should be in the form of a gamut tax, that is, a tax on the basis of level of radiation, which proportionately poses hazard to Nevadans.

Alternatives are, of course, volume or weight to determine taxes on disposal. A portion of these revenues can be dedicated to the operating costs of the above-mentioned laboratories and engineering school.

It is my intent to introduce a gamut tax bill. I'm in the process of writing that bill in the Nevada State Legislature at this time. There is considerable research necessary before we approach legislation to that effect, but I would like to urge the Federal Government to do everything in their power as far as the copperation between the State of Nevada for this site to be chosen and themselves on the aforementioned subjects of mitigation, and the cooperative effort on their part would be certainly beneficial to the state were this to come about.

Although I have many other concerns on various aspects of this subject, time certainly would not permit me to carry on, but I hope you will carefully consider these remarks along with those of other persons who have testified these last two days in Las Vegas and Reno.

I will close by reiterating my primary

concern on this issue, that you consistently consider and remember the health and safety of the citizens of the State of Nevada.

Thank you for this opportunity to address your group and put these comments in the Federal Register.

It's my concern as a citizen of this state for 45 years and of the Southern Nevada area for 45 years watching the development of the test site as it is today, and hopefully you will bear in mind these considerations that I have requested.

Thank you very much.

MR. McBRIDE: Thank you, Jim.

Jim, I would like to introduce my fellow panel members here.

Dr. Peter Krenkel is the Dean of Engineering at UNR, and Bob Revert, who is the County Commissioner from Nye County. He lives in Beatty.

MR. SCHOFIELD: I did include some additional extemporaneous comments in this presentation, but I would like to leave this.

MR. McBRIDE: Thank you.

MR. SCHOFIELD: One thing, if I might -- I don't think anyone is pressing right at the moment to talk -- as unaccustomed as I am to public speaking, I would like to go back over in your Yucca Mountain Information Document.

72

It was very interesting to note over here that under 960.4-2 on the Consultation with States and affected Indian tribes, it does look like you have at least given in or, under this act, have given into addressing two points that I think are very important with the Indian tribes that could possibly be involved in the State of Nevada as well as the state. I appreciate that portion of this particular law, and I would further emphasize that I certainly would urge you strenuously to look into the situations that I brought up, and, hopefully, with the research efforts that I'm doing on this gamut tax base, it might prove to be a possibility where the State of Nevada is chosen for this particular siting, that it could develop into a tremendous economic situation.

In the first place, we may not be able to stall or at least prohibit the dumping at that site, but if it is dumped there, I think that something like this or an approach like this -- as long as we're going to be the dump site of high-level radioactive waste, I think in the respect of further research and development and possible resource recovery in the fusion of the breeder reactors, there would be a possibility for the State of Nevada to at least, if we're going to have to accept it, benefit something by it.

Thank you.

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12

MR. McBRIDE: Thank you.

MR. REVERT: Mr. Schofield, I have a question. On your gamut tax are you figuring Nye County in for a piece of that?

MR. SCHOFIELD: Yes, sir.

MR. REVERT: Thank you.

MR. SCHOFIELD: Actually, you know how we're prohibited from the Constitution from direct legislation dealing with any specific county. It is my intent on the gamut tax to certainly spread it around the state in conjunction with a number of areas.

MR. McBRIDE: John Vieth, would you like to make a comment? Introduce yourself to our Assemblyman so he'll know who you are.

MR. VIETH: I'm John Vieth, Director of the Waste Management Project Office.

I'd just like to respond to a point raised by Mr. Schofield which I think may represent a misunderstanding. You referred to the Environmental Impact Statement, the comments on the Environmental Impact Statement for the RSSF, the Retrievable Surface Storage Facility, which was proposed back in 1974, and you intimated that the Department did not respond to the comments raised by the State of Nevada.

The point that I'd like to make is that

after that Environmental Impact Statement was put out for public review, the Environmental Protection Agency at that time commented that the proposal for temporary storage of high-level waste was begging the issue to the finding of a solution for the permanent disposal of the waste. And based upon those comments from the EPA, Mr. Seamans, then director of the Energy Research and Development Administration withdrew that Environmental Impact Statement, and the proposal to pursue retrievable storage as a method of dealing with the handling of high-level waste was then withdrawn as an official position by the administration. So we were sort of caught in between. It was not that we were not prepared to deal with the questions raised by the State of Nevada with regard to the RSSF. It just became a point that when considered by a larger group of people throughout the country, that that proposal was not considered to be a viable one, and it was withdrawn. So I just wanted to make sure that we were not blamed for something we could not legally or really respond to.

I just wanted to clarify that.

MR. SCHOFIELD: Thank you, I appreciate that. And I did want to make it a matter of the record, in the 1975 State Legislature on Assembly Joint Resolution No. 15, which I was a co-sponsor of, we encouraged the development of this, knowing full well it was there, knowing

full well we had the problem, and we encouraged this with five particular conditions, which I related to in the early part of my testimony. I do want to say that I followed this quite thoroughly. I do happen to sit as the Assembly representative on our proposed Rocky Mountain Compact that we're trying to get through. There is legislation before the State Legislature right now on that compact for the low-level. But I do appreciate your comments, and I certainly apologize if I alluded to something that wasn't. This is one of the points I'm trying to make about the cooperation that we are requesting and have been requesting. I have sat in a number of meetings both in -- not only in Las Vegas, but Reno as well as Denver, concerning this very thing, and it did come up, concerning that cooperative effort on that part. But I thank you for pointing that out to me, sir.

MR. McBRIDE: Thank you.

Do we have anyone else that wishes to speak?

We will stand adjourned until the next speaker shows up. We will be here until 7:00 o'clock to entertain anyone that gets off work late. We will reconvene until someone else comes.

(A recess was taken.)

MR. McBRIDE: Are there any individuals in the room that wish to speak? Has everyone had an opportunity

to speak?

There being none, I will now close our proceedings and turn it over to the presiding officer.

MR. NELSON: Thank you, Jack.

For the record I'd like to thank everyone who participated. I think the Department certainly benefits from these kind of hearings and will have a big job in answering all of the questions raised. And having no other business, I'd like to declare the meeting closed at 7:00 o'clock.

-o0o-

STATE OF NEVADA, )
) ss.
COUNTY OF WASHOE. )

I, MARGARET A. BAKER, a notary public in and for Carson City, State of Nevada, do hereby certify:

That on Thursday, the 31st day of March, 1983, at the hour of 10:00 a.m. of said day, at Reno, Nevada, I was present and took verbatim stenotype notes of the hearing held in the within-entitled matter, and thereafter transcribed the same into typewriting as herein appears;

That the foregoing transcript consisting of pages 1 through 194, is a full, true and correct transcription of my stenotype notes of said hearing.

DATED: At Reno, Nevada, this 23rd day of April, 1983.

MARGARET A. BAKER
Notary Public - Nevada
Carson City
My Appointment Expires Jan. 20, 1987

ENVIRONMENTAL ASSESSMENT FOR NEVADA SITE CHARACTERIZATION
Reno, Nevada
March 31, 1983

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**ENVIRONMENTAL ASSESSMENT FOR NEVADA SITE CHARACTERIZATION**
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**March 31, 1983**

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| Mike Bennett | Private Person | 565 Linden Reno 89502 | | | | | |
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