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Oral Testimony also submitted as written testimony.
Caliente, Nevada
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Thank you for the opportunity to address the Department of Energy regarding the DRAFT ENVIRONMENTAL IMPACT STATEMENT ON THE NUCLEAR REPOSITORY AT YUCCA MOUNTAIN.

My name is Larry Wissbeck. I reside at 101 Clover Street in Caliente, Nevada. My mailing address is Post Office Box 156, Caliente, Nevada 89008.

I would like to direct my comments to the transportation section of the Draft Environmental Impact Statement. Pages J-1 through J-119.

9 **My first observation is rather general. The Draft Environmental Impact Statement is an extremely unusual DEIS because it is limited by the Nuclear Waste Policy Act to consider only the Yucca Mountain site for the Nation's nuclear waste repository. The Congress has forbidden you from considering a better alternative to a site that is porous, on an earthquake fault, and certain to leak deadly poisons into groundwater outside the boundaries of the repository. I am sure you have been embarrassed as you were forced to apply Band-Aid after Band-Aid in an attempt to overcome the obvious flaws the Yucca Mountain site has presented.**

1... **One area where politicians have not tied your hands is in the safe transportation of deadly nuclear waste to wherever it is to be deposited. Yet the transportation section of the Environmental Impact Statement shows very little scientific thinking, or thinking of any sort, about how this deadly cargo might be safely transported. Section J.2 of the DEIS says you will transport nuclear waste by some sort of truck over some sort of road system or perhaps by rail over some sort of rail system or perhaps by some combination thereof.**

A major flaw in this transportation plan is that the DEIS locks in the transportation of nuclear material to these limited methods. Once the DEIS is approved progress on the safe transportation of nuclear material stops. If it could be proven (and it probably can) that shipment by air is less risky than by rail and/or truck the Department of Energy need not, and perhaps cannot, consider this option. Likewise, any new transportation technology, either in the pipeline or developed after the DEIS approval, need not be considered. The listed transportation options also discourage further scientific thinking about transportation, much the same as the selection of Yucca Mountain has halted further consideration of safer alternatives.

Section J.1.2.1 of the DEIS says, on the one hand, that the DOE cannot accurately predict the mix of rail and truck transportation ten years in advance of the projected start of the transportation project. On the other hand, the DOE is

1 cont. **perfectly willing to limit the options to truck and rail with no necessity for a re-examination of options and environmental impacts that will exist ten years hence.**

I have some specific observations from the transportation section of the DEIS.

2 **In two places (Page J-52 in a box entitled POTENTIAL EFFECTS OF HUMAN ERROR ON ACCIDENT IMPACTS and again in Section J.1.4.2.2 *Methods and Approach for Analysis of Nonradiological Impacts of Transportation Accidents.* on page J-63) it is indicated that utilizing only trained, qualified and aware personnel would reduce accident risk. This ignores the real risk of adding tens-of-thousands of shipments and millions of trip miles to the national transportation system. As you draw from the pool of experienced drivers it will create a vacuum in the over-all system to be filled by new, inexperienced, less aware and safety conscious drivers. In a head on collision, for instance, between a nuclear waste carrier and a gasoline tanker the relative skill and experience of the two drivers is reduced to the lowest common denominator.**

3 **The impact on the national transportation system is further underestimated in the DEIS by the failure to include the fact that re-usable shipping containers (casks) and the trucks or trains that deliver them to Yucca Mountain are going to have to return for another load. This means that Tables J-11, J-12, J-13 and much of the information extrapolated from them is going to have to be revised upwards. Table 2-7 indicates that normal traffic accident risks are very high, relative to the radiological risks (95%.) Therefore if the number of miles traveled doubles the estimates of transportation risks will almost double without regard to the casks being empty or full.**

4 **As high-level waste traffic routes are established, they will certainly be followed by tens of thousands of shipments of low-level nuclear waste shipments traveling the same highways. This will double and perhaps redouble the risks of highway accidents. While the DOE DEIS may not be required to assess this additional risk, it is a cumulative impact that should be acknowledged by someone.**

5 **To touch briefly on the transportation casks, though scarcely less briefly than they are dealt with in the DEIS. The design of this important aspect of transportation safety, as it is discussed in the DEIS, shows little more sophistication than would be produced by a ninth grade science class on a piece of newsprint with a #2 pencil. They are apparently going to be big, heavy, cigar-shaped, metal things can surely withstand anything foreseeable that could happen to them. There is no indication that scientists have been asked for any new design characteristics, new materials applications (See Rice University scientists discovery or development of C-60 nanotubes, called Buckminsterfullerene, which is hundreds of times stronger than steel.), nor is there an indication of financial commitment to further research on this or any other aspect of transportation safety.**

6 **The risks listed in the DEIS throughout section J, list only fatalities as a consequence of transportation. A responsible risk assessment should also include maiming, permanent, partial and long-term disabilities, illness, lost workdays etc., as they are surely part of the risk the nation will assume as you undertake this project.**

7 **Many of the safety factors discussed in the transportation of high-level waste depend on the assumption that low levels of radiation are not particularly dangerous. The science of determining low level radiation risk involves some of the most difficult measurements that any scientist or group of scientists can undertake. Radiologically induced cancer and genetic mutations may occur decades after exposure. Exposure to a given dosage may have different affects on different individuals. Sources of radiation, both natural and otherwise, are so numerous that cumulative exposures over a lifetime cannot be determined. Along with a myriad of other factors, the classic double-blind study so useful in science is almost impossible to establish as a way for measuring the affects of low-level radiation. (One scientific study that has been accepted was done on the harm caused by X-rays to fetuses. Fetal X-rays can double the risk of Leukemia. Even after the study was done and the results verified it took 30 years for physicians to stop X-raying pregnant women. Many scientists were dumbfounded that such a tiny dose of radiation would have a measurable affect.) While the DEIS assumption that small doses of radiation (fractions of natural exposure) are safe may seem reasonable, it ought to be acknowledged that all those tables and mathematical formulas are not science but rather assumptions. Garbage in—Garbage out, in the lexicon of the nineties.**

A conclusion and a Post-Script:

8 **You have a congressionally mandated time line to get the Yucca Mountain Environmental Impact Statement considered. No such time line exists for the transportation of high-level nuclear waste. The issues ought to be considered separately. More than a decade has gone into the study of the suitability of Yucca Mountain for storing waste. No study has been done on the problems of transportation, only a broad statement that you'll get it done somehow. The devil is in the details and the details are worthy of a separate Environmental Impact Statement when those details get worked out.**

Here are two reality checks for you:

10... **The first you can do right now. You are sitting just a few meters from the railroad tracks over which you propose to transport high-level nuclear waste. Now, transport yourself back in time to New Years Eve 1910. Floodwaters would be twisting those railroad tracks into pretzels. Millions of tons of rock would be raining down from the hillsides onto the railroad. You would be sitting up to your necks in mud the consistency of pancake batter.**

10 cont. **The second should wait until tomorrow as you commute back to Las Vegas. Try to envision making the trip on that narrow, curvy road between here and Alamo in a truck that's 270 feet long, has forty wheels, two engines and two drivers, and weighs almost 300 thousand pounds.**

Then go back to Washington DC and tell someone they need to re-think their transportation plan.

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