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MR. HADDER: My name is John Hadder and I work for an organization called Citizen Alert. I've submitted comments before. We'll submit written comments. I'm always finding something out, and there's a few things I want to follow up on.

1 I submit that this document fails in its charge by NEPA and by the Nuclear Waste Policy Act in a couple of important areas, and I'll give some specific examples. [The National Environmental Policy Act stipulates the need for an action to protect the health and safety of the public and the environment in the future and that action taken should not jeopardize the current measure of public health and safety. So regardless of what its level is, it should not make the situation any worse than it is already. And that is one of the problems with the action is that we believe that it makes the situation worse.]

2 In fact, if you look at the analysis in here, so I guess [I challenge the conclusion a little bit in terms of no action. While the Department of Energy states that both no-action alternatives are not feasible and wouldn't be done, nevertheless, the actual health impacts from the long-term scenario 2 would actually be less than the Yucca Mountain repository by their own calculations, even though I suppose it's not considered reasonable. So that implies to me that there must be something in between there that's much more reasonable and much better for the health and safety and should be addressed.]

3 [The transportation issue is another one. I think there have been a lot of comments on that. It's really important, I think. We challenge the risk analysis in that it's unclear that there's a clear connection between real-life scenario accidents and the impacts of those, the testing and all the models that are out there on cask designs and have yet to be built, so we challenge the risk analysis based on incomplete data.]

4 [I'd like to give an example of something else, too, in terms of another way I think this document needs to be revised, redone is in the area of communication. I stated back in Las Vegas that the table of contents doesn't read real easily, and it would have been nice, especially with the scope of a project like this, to have an index.]

5 So many people are involved. [We would think that it would be important for public process that the document be made as easy to read and as clear to find information as possible, and this doesn't seem to really be the case.

I want to give an example. Page 277 of Volume 1 gives a table. This same table is duplicated in the summary document as well. And so this table is, in my opinion, an important part of what people will look at first in looking at the document. I want to point out something, some inconsistencies here.

First of all, there's a section in the table which indicates accidents. Doesn't say transportation, but it seems like that's the intent here. And there's categories under accidents. I'm going to focus on the category called Public, and there is Public Radiological, and bracketed it says LCF, which is latent cancer fatalities. So that should mean the number of fatalities in my reading of this document.

Under that category there are two sections, one called MEI, which is the maximally exposed individual, and the other is called Population. Okay. So if we go to the proposed action and we look under transportation, transportation column, I notice that the LCF number is lower for the maximally exposed individual than it is to the general population on the average. There's a range there, but the numbers would - - average number would definitely be lower. This doesn't really make any sense to me. I don't understand why the maximally exposed individual would be less likely to receive cancer than the general population.

Further, I attempted to find out why this might be the case in the document, and I noticed something else rather interesting. Under the maximally exposed individual, if you go back on page 67, it does report -- the number is reported in the document as the -- under the mostly legal truck scenario, there's a range there.

And it does report in this document 31 latent cancer fatalities to the exposed population. The number that's reported in the document and on the table here under maximally exposed individuals is .002 to .013. And in the document it appears as though that represents the probability and not an actual latent cancer fatality number. Above it appears as though the actual latent cancer fatality number is more in the range of 31. So what are we reporting in this table? It's not really clear to me.

Further, it's interesting to me that in other places in this table actual whole numbers are recorded, and they seem to be consistent with the LCF described in the document and not a probability. So I find it odd that it may have been reported as a probability in this particular spot in the table.

One other thing that leaves me a little bit suspicious is, if you go over to the column under the no-action scenarios, of course there's no impact under transportation. So it almost appears to me as though there was an attempt to minimize the appearance of fatalities under transportation by using a figure which is a probability and not an actual latent cancer fatality number. So I'm kind of concerned about that, that we're not really communicating on a first glance what's there.

How is the MEI, the maximally exposed individual calculation done? Well, here again, on this table on page 277, I tried to find the figure for the LCF under the population, the .02 to .07. I tried to find that in the document. I had a lot of trouble with it. I've looked in the Appendix J under that section. I've looked in the section where it talks about transportation impacts for accidents. I'm not really finding any. But actually there is a number here that looks like it might be pertaining to it, and then I try to find a calculation for this.

And I want to point something out right here. I teach chemistry, I teach science myself, and in my class, my 101 class I tell the students, whenever you report a number in a table, you need to show clearly how you calculate that number. And this is the idea of communicating information. This is always a very important aspect of science. In my opinion, this is not clearly communicating what's happening. It took me in the past 45 minutes an hour trying to find this figure and where it came from. Not too easy. I know eventually I'd be able to figure it out.

But I'm thinking in terms of the average public that maybe has a little less experience working with figures. It should be a lot more clear. There should be a simple calculation so people can see exactly where the number came from. That is not communicated to the public. That's frustrating to the public. If I were not someone who is more into numbers, I would probably give up on it. And to me, that fails in what the charge of this document is supposed to do.

This is only one example of this. There are many examples which will be in the written comments on this. But this is where I feel the document really fails. As an instructor, it's insulting. I tell my students, you've got to report your numbers. You've got to show your calculations. It should be clear to a man on the street. And yet here it is here. It's like my teachings are being countermanded publicly.

So in a way I'm kind of insulted by that. I wish it were better communicated. And I think that's a very important principle. Everybody needs to understand the basics of this document, and that table is really significant because it's in the summary. A lot of people only look at the summary. It's very important. I think we need to address that.

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I will close with just a couple more comments very briefly. On the cancer calculations, it has been pointed out earlier about the no threshold concept. I wish to state for the record that there is a supralinear theory out there where actually the curvature from high level to low level bends above the linear extrapolation, and there's also a theory that goes below. This has not been clearly decided in the health physics community. It's still up for grabs.

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And I think that what has happened over the years is that radiation standards have been lower and lower and lower over the years. My interpretation of that is, as the body of knowledge increases we're beginning to see more and more ways that radiation impacts us. This document does not address that part of it, either. Over time I think it will become more and more important.

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So I believe that we really need to take the radiation health effects very seriously. One important point, the radiation impacts that are different than maybe some other options is that there's a possibility of genetic implications which could carry on to future generations that I think is a very important thing that's underaddressed in a lot of these discussions.

Thank you very much for the time, and we'll see you next time.