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NOV 16 1999

4 MR. HALSTEAD: For the record, I am Bob
5 Halstead, transportation advisor for the Nevada Agency
6 for Nuclear Projects. I have prepared remarks today.
7 Copies are available. I'd ask that my prepared
8 statement be put on the record as if it had been read
9 in its entirety so I can diverge from some of the
10 formalities in talking about these issues today.
11 As many of you know, following the
12 hearings, each of the hearings, the State of Nevada has
13 picked a particular aspect of transportation to address
14 in our statement. That is done partly for getting
15 those issues in the record and partly because we
16 learned from the discussions that occurred in each of
17 these meetings.
18 The past statements that we've prepared
19 are available on the Web at our website. The address
20 is in my statement.
21 Today we want to talk about one very
22 specific issue. That's the radiological
23 characteristics of the spent nuclear fuel and
24 high-level waste that DOE proposes be shipped to the
25 repository. I have three major points today.

1 1 The first is that the draft EIS provides
2 insufficient information on the radiological
3 characteristics. We find this particularly galling
4 because we spent a lot of time during the scoping
5 process in 1995 specifying what we thought should be in
6 the draft EIS.
2 7 Now, I will give DOE credit. In some
8 areas they did a very good job in a very difficult
9 task. So many different types of highly radioactive
10 materials are being shipped to the repository to come
11 up with a few good reference ones you can meaningfully
12 manage the analysis of is quite difficult.
13 For those of you who are concerned about
14 the DOE defense cleanup, I particularly recommend
15 looking at the part of the EIS in Appendix A around
16 page 23. A very good job was done, in my opinion,
17 picking a representative DOE spent nuclear fuel waste
18 form.
3.... 19 In other areas, unfortunately, the DEIS
20 did not do such a good job. Indeed, I will say they
21 did a good job on the noncontroversial areas, and it's
22 in the areas of radiological impact that they fell
23 down. I'll also say, as in most draft EISes prepared
24 under time pressure, there are lots of places you find
25 information has been omitted, inconsistent, or there's

3 cont. a particularly galling detail in Table J14 where the radionuclide modeling by different rail casks are addressed and there's some mistakes in there. Hopefully we'll be able to correct those in the draft EIS where the details are at issue.

My major concern is DOE's tendency to shy away from talking about radiation and radiation health effects.

4 Point No. 2, the entire radiological impact analysis in the EIS is incorrect because of incorrect assumptions about cooling time. I could spend my whole five minutes and I wouldn't be able to explain this adequately.

My point is, we believe this is an area DOE should have used a bounding analysis and said, suppose the spent fuel is five years old, suppose the spent fuel is 26 years old, what are the high and low value. They choose to use one specific value, and they chose the one that gave the lowest radiological impact. We can could speculate as to why that is the case.

In particular, they did not look at the recent NRC decision that says that very hot, very radioactive fuel could be shipped by truck to the repository. That should be their basis for worst-case analysis.

5.... 1 Point No. 3, the harshest thing I have to
2 say today is that the Department of Energy just doesn't
3 want to admit how deadly spent nuclear fuel is. I
4 don't make a point about talking about this, but I was
5 put on the spot by a citizen activist in my state, why
6 don't you talk about how dangerous it is? Everyone who
7 works on this knows. Let me try to.
8 Do I have two minutes left?
9 MR. BROWN: Yes.
10 MR. HALSTEAD: That's what I have by my
11 count.
12 How do we determine how dangerous spent
13 nuclear fuel is? There are a number of different ways
14 to approach this technically in the language of the
15 health physics profession where we quote outputs from
16 the origin to risk by computer codes. We'll try to
17 speak plainly today.
18 DOE should have taken a conservative
19 approach to radiological health by basing its
20 evaluation on transportation of fuel that was only five
21 or ten years out of the reactor. They choose, instead,
22 26-year-old fuel, which is considerably less dangerous.
23 But even the fuel they have chosen is extremely
24 dangerous.
25 My best example for you is one that I'm continue

5 cont.

1 never comfortable using, but I think it's technically
2 correct, and I think it should give us all a reason to
3 pause and ask about why we have all the safety
4 requirements, ask about why so many people die in the
5 No Action alternative. It's because spent fuel is very
6 dangerous.
7 Like this: In the time I've spoken
8 already, if I had a spent nuclear fuel assembly here,
9 to reference one from the EIS, I would have already
10 gotten what in the business is known as an LD50 dose, a
11 dose that gives either a cancer or radiation death to
12 50 percent of the exposed population. You have a lot
13 of cesium and strontium generates a gamma radiation
14 field. There are other contributors to the dose as
15 well.
16 If you were to stand next to, immediately
17 next to the spent fuel assembly, which we believe has a
18 surface dose rate of about 10,000 rem per hour -- and
19 we're trying to be conservative. We'll bottle it down
20 to a 100 rem per minute exposure -- how does your body
21 react to that?
22 After a minute, mild symptoms of radiation
23 sickness. After two minutes, vomiting, blood changes
24 that wouldn't be immediately apparent, nor the doubling
25 of the cancer risk.

continue

5 cont.

1 After six minutes, you'd expect vomiting
2 within three hours, hair loss, 50 percent probability
3 of death in two months, and after 10 minutes or more,
4 you'd be at the point where you'd expect an 80 to
5 90 percent probability of death within two months, and
6 the survivors would have a hard time.
7 It's harsh to say these things. That's
8 why it's important that the Department of Energy be
9 challenged not to fall into the easy business of
10 thinking that they have made this process of
11 transporting waste safe.
12 I think the single greatest problem is
13 what we used to call arrogance, and what social
14 scientists now call, in highfalutin terms, the
15 organizational atrophy of vigilance. We need to remind
16 ourselves just how dangerous spent nuclear fuel is to
17 make sure that whatever is done in its handling,
18 storage, and disposal is done in recognition of just
19 how dangerous the materials are. Thank you.
20 MR. BROWN: Thank you. Our next speaker
21 is Byron White. There are some copies of Mr. White's
22 statements and some additional materials available,
23 which I'll put in the back.