

7888 S. Galileo Lane
Tucson, AZ 85747
November 28, 2007

EIS Office
U. S. Department of Energy, Office of Civilian Radioactive Waste Management
1551 Hillshire Drive
Las Vegas, NV 89134

Dear Sir/Ms,

We are responding to your invitation to comment on the Draft Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain. We have been studying the nuclear waste disposal issue for a number of years and are the coauthors of a recent book on the subject, "Nuclear Waste Stalemate: Political and Scientific Controversies". Our comments all refer to the Summary and are referenced by page number to that document.

- 1 [p. S-10 Second paragraph. The proposal to "age" waste on the surface may be in conflict with the Congressional prohibition of interim storage at Yucca Mountain.]
- 2 [p. S-20 4th paragraph. Perhaps as important as armed security experts would be a federal radiological accident response team to accompany shipments. The plan to call on each state to provide response to an accident seems impractical.]
- 3 [p. S-39 There are some editorial slips in the last paragraph. The first sentence of this paragraph ends "respectively", although there is only a single value given in the sentence. In the next sentence 0.2 percent should be replaced by 0.3 (rounding error: $.98/350 \times 100 = 0.28$, rounds to 0.3).]
- 4 [p. S-40 I do not think it is "conservative" to assume that a drilling intrusion could not occur before waste package failure, estimated to be 200,000 years after closure. Waste package performance is based on enormous extrapolation of material performance and is very uncertain. It can be seen from Fig. 5-8 that the estimated dose associated with human intrusion increases very rapidly with decreasing time of intrusion relative to closure.]
- 5 [p. S-44 The second paragraph needs improvement. The first sentence would read better if "if" was replaced by "of". The circumstance for the estimates in the third sentence presumably refer to a truck cask, as the fourth and fifth sentences refer to rail casks. One should mention "truck cask" in the third sentence. It would be helpful to give an example of what is meant by a "high energy density device".]
- 6 [p. S-51 The last sentence of the second paragraph of Conclusions states "There would be no adverse health effect to individuals from these projected doses". This is incorrect- unless you want to invoke a controversial threshold effect for radiological consequences. A threshold hypothesis is contrary to the generally accepted linear hypothesis and if invoked needs to be

justified. The discussion of radiological impacts on p. S-30 implies a linear relation between dose and latent cancer fatalities.]

7 [General comment on treatment of radiological effect in the post-closure period. The treatment of this period stops at estimation of dose to RMEI at various times. The radiological impact depends on the number of people exposed to varying amounts of radiation, ie, the product of dose and the affected population. An exercise to determine this impact was presented in Chapter 5 of the Final Environmental Impact Statement, Vol. I, where population estimates of the number of people exposed to varying levels of radiation were used to calculate the total impact. Although this particular exercise was flawed by an erroneous assumption about the hydrology and hence the effect on the population the Pahrump basin, it is the type of calculation required to assess the impact of the repository. It is of course very difficult to project human populations so far in the future.]

Sincerely,



Robert Vandenbosch



Susanne E. Vandenbosch