

JAN 13 2000

MR. BERNHARDT: My name is David Bernhardt. I thank you for the opportunity to provide comments on the proposed "Geological Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nevada."

I'm a certified health physicist and have over 35 years' experience in radiation protection and waste management. I worked for the U.S. Environmental Protection Agency radiation programs for over 20 years, and subsequently worked for Rogers and Associates Engineering in Salt Lake City. While with the E.P.A. I worked in Las Vegas, Nevada for over 17 years, primarily related to the Nevada Test Site off-site safety program. I am now semi-retired and am speaking as a private citizen.

1... The U.S. has taken a long, torturous journey and is now approaching the threshold of a high-level waste repository. I believe, and the draft EIS makes the case, that it is highly desirable that there be a common repository versus storage at numerous sites around the U.S. The draft EIS, in the no-action alternative, denotes a cost incentive of a common repository at Yucca Mountain versus storage at the 70 some sites in the U.S. The cost incentive becomes even clearer if the additional cost for future remediation and health and safety at the 70 sites are included, especially if there is not adequate long-term maintenance and control at the 70 sites.

The Yucca Mountain site is in one of the most technically desirable areas of the U.S. for waste disposal. It is an extremely arid area where evapotranspiration prevents infiltration because evaporation is roughly a factor of ten times greater the precipitation. With proper design, there would be essentially no infiltration.

The geological formations provide for stability and isolation of the materials disposed there. The Nevada Test Site, Nellis Air Force Range, and Bureau of Land Management holdings provide excellent isolation at the site. I would say the primary favorable attributes are the geology and the climatology. The land isolation is supplemental.

2... The draft EIS provides a reasonable assessment of the risks associated with the implementation of disposal at the Yucca Mountain site. It recognizes that there are risks and impacts, and it quantifies them. I believe in many cases, due to the efforts to be conservative or err on the high side, it significantly overestimates the risks.

3 The estimated doses comply with proposed U.S. Nuclear Regulatory standard of 25 millirem per year, which I suggest is reasonable. Even the conservatively high dose estimates in the draft EIS appear to indicate compliance with what I would say is a conservatively low U.S. EPA proposal for high-level waste published August 27th, 1999, which contain both a dose criterion of 15 millirem and a separate ground water criterion.

2 cont. I suggest several items for the redraft of the EIS. The major radiation risk to the off-site population in the next thousands of years is from the release of natural radon-222 from the repository formation. Yes, the development and operation of the repository may cause a slight increase in the release of radon-222 from this immediate area, but the overall impact will be minimal and not due to the radioactivity in the waste. This should be stated very clearly. It is stated very clearly.

4 In the summary, page S-48 identifies doses from ingestion of groundwater at about a million years after closure, at a distance of five kilometers from the repository. It should be clarified that the five-kilometer location is well within the boundary of the repository, and if controls are maintained would not be a viable point of access. This is clarified in the base document in Table 5-6, but is still subject to interpretation. The summary is provided as a standalone document and should be complete.

- 5 [ The summary should also provide clear information on the size and the general dimensions. Figures should include scales of distance to help readers assess the information.
- 2 cont. [ The dose estimates should focus on realistic scenarios for both operations and accidents. The focus should be on best-estimate doses, with I believe reduced emphasis on upper range doses and extremely low comparability accidents.
- 6 [ I commend the DOE on providing a comprehensive EIS] and [strongly support proceeding with the characterization and, hopefully, further implementation of Yucca Mountain for the disposal of high-level waste.] 1 cont.
- 7 [ I guess I might note that I could, in reading the draft EIS, perceive of the impacts of transportation on the state of Utah.