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Enclosed are several of my objections to the US Department of Energy Draft Environmental Impact Statement (DEIS) of the proposed Yucca Mountain Nuclear Waste Repository. As a senior science major at the University of Notre Dame, I have been exposed to many scientific and technical reports and experiments. However, I have never seen a document filled with such "bad science" as this one. Based on this DEIS, the building of Yucca Mountain should not be allowed to proceed.

- 1 [There are numerous inconsistent, incomplete, and incoherent claims made throughout this proposal for the Yucca Mountain Repository. These logical fallacies and flaws have severe ethical and moral consequences not only for today's world, but also for future generations. It is my hope that you will view these objections and concerns with utmost concern and decide to support the numerous scientists, researchers, and citizens in their goal to stop the building of this dangerous facility.] Thank you.

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Objections to the Draft Environmental Impact Statement (DEIS) for the Yucca Mountain
Waste Repository

The Draft Environmental Impact Statement of the Yucca Mountain Waste Repository contains numerous problematic issues in regard to the way the study was performed. There are many incomplete, inconsistent, and incoherent claims made in this document, all of which lead one to disagree with the DOE's conclusion that the site is safe and suitable. In the following points, I address several of these claims and raise objections to what I believe is "bad science." I hope that these examples alone serve as a basis from which to further critique the Yucca Mountain study and object to the building of the waste repository.

- 2 1. The Draft Environmental Impact Statement is incomplete with regard to the definition of the "maximally exposed individual." The definition did not take into account differences in age, gender, and physical characteristics and also assumed that current lifestyles in the exposed area would remain consistent over the next 10,000 years. First of all, if the intent of the study is to determine protection for future generations, the maximally exposed individual should not be a person of mean or average lifestyle because it automatically results in some people (namely the old, young, sick, etc.) being less protected. In addition, while it is certainly not possible to know future lifestyle patterns, one cannot assume that characteristic conditions today will remain intact for thousands of years in the future. Therefore, the DEIS is wrong to rely on current averages to determine future levels of safety from the repository (DEIS, p. 5-26).
- 3 2. The DEIS is incomplete in various sections of the overall study when it discusses different radiation effects from the repository only over a 10,000 year time period. For example, in the analysis of the water-borne radiological consequences (Section 5.4), dose rates to individuals using groundwater were only estimated for the first 10,000 years after repository closure. When one considers that the serious effects of the waste could last for one million years (due to the extensive lifetime of many of the toxic materials in the repository), the DEIS is not fully reporting the radiation consequences of Yucca Mountain to the public (DEIS, p. 5-25).
- 4 3. The DEIS is inconsistent when it states that water flows at highly variable rates through the saturated zone of Yucca Mountain because it states earlier that the amount of water affected would be minimal due to the low rate of flow (Section 5.2.3.1). By assuming a low flow rate (despite mentioning later that rates were variable), the DEIS underestimated the potential amount of seepage that could occur into the repository (DEIS, p. 5-10).
- 5 4. The DEIS is incomplete in its discussion of human intrusion because it admitted the possibility of intrusion when it described a potential event, but then did not further discuss the impact of such an intrusion in its final results (Section 5.2.3.5). While it is difficult to predict future human activity, one cannot completely dismiss the discussion of possible consequences that could occur through human impact simply because exact scenarios are not known. By not including the possible consequences of human intrusion, the DEIS fails to fully consider the potential radiological impacts that could occur from the building of the repository (DEIS, p. 5-16).
- 6... 5. The DEIS is incomplete in its analysis of the proposed casks for use at the waste repository because it did not include failure rates under extreme conditions (when there is actually the highest potential for failure). In section 5.2.3.4, it reports that package failures

6 cont. would occur periodically over hundreds of thousands of years (a questionable prediction itself considering the fact that casks are still in the design phase and modern technology has not even existed for that long!). However, it then neglects to state what failure rates might be if disruptive events, such as an earthquake, were to occur. Since information regarding the low failure rates under normal conditions was provided, potential rates of failure from disruptive events should be included as well (DEIS, p. 5-15).]