ACNWR-0148
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON NUCLEAR WASTE
WASHINGTON, D.C. 20555-0001

January 20, 2000

The Honorable Richard A. Meserve
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Meserve:

SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR YUCCA MOUNTAIN

The Advisory Committee on Nuclear Waste (ACNW) received a copy of the Draft Environmental Impact Statement (DEIS) for the proposed Yucca Mountain repository in August 1999. We heard briefings by the Nuclear Regulatory Commission (NRC) staff on their preliminary review of the DEIS at our 114th meeting in November 1999, and from the Department of Energy (DOE) at our 111th and 115th meetings in July and December 1999, respectively. The Committee also had the benefit of comments on the DEIS from stakeholders during the 113th meeting held in Las Vegas, Nevada, in October 1999.

The Committee provides the following comment and recommendations:

1. The Committee remains concerned about the general unresolved issue of how comparisons and trade-offs should be made among real exposures in the near term and calculated exposures in the long term.

2. The Committee recommends that no additional work should be done to support the no-action scenario.

3. The Committee recommends that the final EIS should provide more detail on impacts and mitigation of alternative transportation scenarios.

DISCUSSION:

Radiological Impacts

The material in the DEIS with which the ACNW is most familiar is that related to the calculated long-term radiological effects following closure of the repository. The basis for the consideration of postclosure impacts in the DEIS is essentially DOE's Viability Assessment (VA). As DOE notes in the DEIS, "this EIS describes and evaluates the current preliminary design concept for the repository." The ACNW previously commented on the VA, and the NRC staff has conveyed

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to DOE the views of the ACNW as well as its own on issues that are unresolved in the VA. Any significant changes that are made in the postclosure analysis resulting from design changes will ultimately have to be reflected in the final EIS in a form appropriate for the National Environmental Policy Act (NEPA). In accordance with the Council on Environmental Quality (CEQ) requirement, Section 1502.9 requires that if any significant changes are made in the analyses because of design changes or otherwise, the changes have to be reflected in supplements to either the draft or the EIS. These changes have to be reviewed by the NRC staff.

The DEIS describes radiological impacts of pre-closure activities, as well as impacts following closure. The calculated impacts are based on the VA design, including the same thermal loadings. After the DEIS was issued, DOE has recently moved to a lower temperature design for the repository. There is a possibility that pre-closure exposures to radioactivity could increase under the low-temperature design as a result of increased handling of fuel, for example, if blending of fuel of different ages were required to control the heat load to the repository. Although we recognize that calculations can be made to satisfy the formal requirement of the NEPA in this instance, the ACNW remains concerned about the general unresolved issue of how comparisons and trade-offs should be made among real exposures in the near term (e.g., to workers from increased handling of fuel) and calculated exposures in the long term (e.g., to a hypothetical critical group 10,000 years in the future from ingestion of contaminated ground water). The DEIS is not the vehicle for resolving the issue, but we believe that such trade-offs should be explicitly made[1].

The No-Action Alternative

In the case of the DEIS for Yucca Mountain, the Nuclear Waste Policy Act specifically exempts DOE from having to present alternatives to geological disposal and alternative sites for a repository. DOE chose to include in the DEIS a no-action alternative. The no-action alternative consists of two scenarios intended to provide a baseline for comparison for the proposed alternative, which is described as construction, operation, and closure of a repository at Yucca Mountain. The no-action scenarios are open to criticism because of their lack of realism. In our opinion, there is <u>no</u> realistic "no-action" alternative for the long term. The realistic alternative is likely to be deferral of a decision on a repository for, say, 100 years. No-action in the sense considered by DOE in the DEIS (i.e., leaving fuel in dry-cask storage at reactors) may be of interest for 100 years, but it is not credible for 10,000 years. We believe that DOE may already have spent more effort than is worthwhile in analyzing the no-action scenarios. Effort spent on exploring more fully the site-specific analyses for Yucca Mountain would be a better investment than additional efforts spent on providing more detail for a 10,000-year no-action alternative.

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[1]We recognize that the question of how to handle issues of intergenerational equity is vexed (e.g., see P.R. Portney and J.P. Weyant 1999, **Discounting and Intergenerational Equity**, Resources for the Future, Washington, D.C.). Nevertheless, we think that explicit reporting of relatively certain exposures to radiation in the near term separate from highly uncertain exposures calculated for the long term would provide the information in the clearest format in the EIS.

Transportation

One of the major concerns expressed by stakeholders is that the transportation analyses in the DEIS are deficient. A main point of these concerns is that DOE failed to choose a preferred route and a preferred mode of transportation. DOE defends its decision to not specify mode and route on the basis that it is premature to select a route, and that they want public input to play a significant role in making a final choice. DOE believes that "the EIS provides the information necessary to make decisions regarding basic approaches" and that "follow-on implementing decisions, such as selection of a specific rail alignment, would require additional field surveys, state and local government consultation, environmental and engineering analyses, and NEPA reviews." DOE considered different options but not in detail; therefore, meaningful comparisons among the impacts and mitigation strategies of different options cannot be made. Hence, the proposed alternative of the DEIS is incomplete.

The ACNW sees the lack of detailed analyses of impacts and mitigation strategies, especially those stemming from the incomplete specification of transportation routes and modes, as a deficiency of the DEIS. We anticipate that the risks from radiological exposure[2] will be very small for any route, but we can envision the possibility of considerable differences among alternate routes and modes in terms of traffic risks, land-use impacts, and other items. The NEPA process is designed to expose impacts of alternative actions for projects that fall under the purview of the act and to present mitigation strategies for the alternatives so that valid comparisons can be made[3]. Thus, we conclude that the final EIS should provide more detail on impacts and mitigation of a transportation scenario and alternates to it.

Sincerely,

B. John Garrick
Chairman

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[2]DOE reports impacts of radiological exposure in the DEIS as latent cancer fatalities. These are calculated using the linear, no-threshold hypothesis (LNTH) in association with very small dose rates collectively to some target population. As we noted in our letter of June 4, 1999, on the LNTH, we think that expressing potential effects of very low doses, especially collective doses, in terms of cancer fatalities is a poor choice from a scientific perspective.

[3]Sections 1502.14 of the CEQ and Sections 102(2)(c)(i),(ii),(iv), and (v) of NEPA require that comparisons be supported by analyses.