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Chief, Regulatory Publications Branch
Division of Freedom of Information
and Publications Services
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Review comments on NRC Draft Technical Position on Methods of Evaluating the Seismic Hazard at a Geologic Repository. (54 Fed. Reg. 35266)

Dear Sir:

These comments on the above-referenced document are submitted by the Edison Electric Institute/Utility Nuclear Waste and Transportation Program (EEI/UWASTE). EEI is the association of the nation's investor-owned electric utilities. UWASTE is a group of electric utilities providing active oversight of the implementation of federal statutes and regulations related to radioactive waste management and nuclear transportation.

First, EEI/UWASTE endorses the content of the September 20, 1989 letter from Mr. Gordon Appel (DOE) to Mr. John L. Linehan (NRC). Second, our remaining comments fall into two areas: a) differences among facilities, and b) designing for seismic hazards -- both of which, in EEI/UWASTE's opinion, lead to the conclusion that 10 CFR Part 100 Appendix A does not apply to geologic repositories. These comments are amplified below.

Differences Among Facilities

The Technical Position "considers differences that may exist. . .among the surface facilities and the underground facility" of a repository, but it is silent on what those differences are. Moreover, the Technical Position does not acknowledge the very significant difference between repositories on the one hand, and nuclear power plants, spent-

fuel storage facilities, and tailings ponds/dams for uranium mills on the other. In the latter context, the Technical Position offers some very weak justification for applying 10 CFR Part 100 Appendix A (Seismic and Geologic Siting Criteria for Nuclear Power Plants) to repositories.

If a seismic event exceeds the design basis for a nuclear power plant, there are high energy forces present within the plant that may result in release of radionuclides to the accessible environment. On the other hand, if a seismic event exceeds the design basis for a repository, the resulting interaction of the geologic and engineered-barrier systems is so complex that release of radionuclides to the accessible environment is not immediate, if ever, and not necessarily catastrophic as determined by performance assessment and probability analyses. Yet, this Technical Position specifically excludes addressing probabilistic seismic-hazard analysis. The Technical Position should directly acknowledge these differences and permit the use of probabilistic analyses.

Investigation vs. Design for Seismic Hazards

It may be appropriate for this Technical Position to describe the nature and scope of investigations into potential seismic hazards for repositories. However, Appendix A is sorely out-of-date with seismic-hazards knowledge and investigatory techniques. The Technical Position should require state-of-the-art investigations and not be limited to those that evolved in the 1960s and early 1970s when 10 CFR Part 100 Appendix A was promulgated.

The Technical Position states, "The term seismic hazard. . .is meant to encompass the hazard due to either vibratory ground motion or coseismic faulting, or both, that can affect the design and performance of the geologic repository." The Technical Position also states that design criteria require "structures, systems, and components important to safety be designed so that their safety functions are preserved under the impact of the most severe, adverse natural phenomena." "In addition," it says, "the methodology outlined in this Technical Position can be used in developing seismic and geologic bases for earthquake design criteria. . ." And finally, it introduces 10 CFR Part 100 Appendix A, and says that for a repository as for a nuclear power plant, "the determination of a need to design for faulting" is applicable. And yet, Appendix A implies that a facility can be designed for both vibratory ground motion and faulting.

When the above statements are considered in the context of 10 CFR Part 100 Appendix A, they translate into a requirement that faulting-potential be investigated and either: 1) avoided by a setback distance, or 2) that the repository may be designed to accommodate faulting. However, the history of AEC/NRC licensing of nuclear power plants has established the precedent of absolutely rejecting designs to accommodate fault-

ing (e.g., Bodega Bay, California, of Pacific Gas and Electric; and Malibu, California, of Los Angeles Department of Water and Power).

Without specifically acknowledging the ability and the acceptability of accommodating fault displacement in design, the Technical Position is perpetuating a misleading impression given by 10 CFR Part 100 Appendix A. Furthermore, the Technical Position should indicate the criteria by which setback-distance from faults, and designs to accommodate faulting will be judged by the NRC staff.

Recommended NRC Actions

This technical position should be carefully reconsidered, especially with respect to its implementation of 10 CFR Part 100 Appendix A as discussed above, and in DOE's letter of September 20, 1989.

In addition, since the establishment of seismic design and acceptance criteria is critical to the ultimate licensing and construction of the nation's first geologic repository for the disposal of civilian high-level waste and spent nuclear fuel, EEI/UWASTE strongly recommends that NRC develop a regulation for a generic repository and supplemental Regulatory Guides on this topic. Regulatory Guides will provide the technical rigor that is appropriate for development of regulatory requirements and guidance in this area. In addition, requirements and guidance provided by regulations are durable and legally binding on all parties in any licensing proceeding.

We appreciate the opportunity to comment on the subject Draft Technical Position. If you have any questions, or desire additional information regarding our comments, please contact Mr. Christopher J. Henkel, EEI/UWASTE Program Manager for high-level waste at (202) 778-6693.

Sincerely yours,

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DLS/chm
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