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EDISON ELECTRIC INSTITUTE

March 1, 1991

Mr. David L. Meyer
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: NRC Staff Technical Position on Investigations to Identify Fault Displacement and Seismic Hazards at a Geologic Repository (54 Fed. Reg. 35,266); Revised Public Comment Draft.

Dear Sir:

By letter dated October 23, 1989, the Edison Electric Institute/ Utility Nuclear Waste and Transportation Program (EEI/UWASTE) responded to the NRC's Draft "Technical Position on Methods of Evaluating the Seismic Hazard at a Geologic Repository" (54 Fed. Reg. 35,266). The NRC has now issued a Revised Public Comment Draft "Staff Technical Position on Investigations to Identify Fault Displacement and Seismic Hazards at a Geologic Repository," dated January 1991. EEI/UWASTE participated in a Technical Exchange held on February 20, 1991 concerning this latter document. We wish to emphasize four points raised during the course of that Exchange.

Edison Electric Institute (EEI) is the association of the Nation's investor-owned electric utilities. Its members generate approximately 75% of all the electricity in the Nation. The EEI/Utility Nuclear Waste and Transportation Program (EEI/UWASTE) is a group of electric utilities with nuclear energy programs that seeks to ensure that radioactive waste management and disposal, and nuclear materials transportation systems, are maintained or developed in a safe, environmentally sound, publicly acceptable, cost effective and timely manner.

First, the Department of Energy (DOE) argued during the Technical Exchange that the term "susceptible" is vague, prejudicial and misleading within the context of the STP; we agree. More descriptive, generic phraseology, such as "candidate fault for detailed characterization," should be used instead.

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Second, on page six of the Staff Technical Position (STP), a "susceptible" fault is defined as one that:

> (a) has had movement within the Quaternary Period; or (b) has seismicity, instrumentally determined with records of sufficient precision, that suggests a direct relationship with the fault; or (c) is oriented such that it is subject to failure in the existing stress field; or (d) has a structural relationship (i.e., movement on one fault could cause movement on another) to a fault that meets one or more of the aforementioned criteria. (Emphasis added.)

The first criterion (movement within the Quaternary Period) should be the threshold. Faults that do not displace Quaternary material should not also require additional consideration under criteria (b), (c), or (d). In addition, the Quaternary Period of two million years is, itself, unnecessarily conservative. A more appropriate cutoff for identifying a "candidate fault for detailed consideration" would be one million years or, perhaps, less. To date, for all large construction projects that have required them, fault displacement analyses have incorporated thresholds that vary from tens of thousands of years to no more than five hundred thousand years. Extending this requirement to two million years is in conflict with widely accepted engineering and geologic practice.

Third, as noted on page 14 of the STP, "All faults that are susceptible to displacement are not equally hazardous." Accordingly, the STP provides, on the same page, that "the level of investigation can vary." The potential relevance of a fault to waste isolation, however, should be factored into the process for identifying faults initially. An STP addressing fault displacement hazards should specify thresholds (e.g., in terms of the nature, and/or size, and/or proximity of the fault), such that faults not meeting the threshold need not be investigated in detail.

Fourth, given the importance of seismic considerations to the ultimate licensing, construction, and operation of the nation's first geologic repository for the disposal of high-level waste and spent nuclear fuel, EEI/UWASTE continues to urge that the NRC develop a generic regulation addressing the matter. Requirements and guidance provided by an STP are subject to change and not obligatory. Regulations, however, are both durable and legally binding on all parties and adjudicators in any license proceeding. In addition, the regulation should be comprehensive and address not only investigations for fault displacement and seismic hazards (as does the subject Draft STP) but analysis of fault displacement and seismic hazard, the use of tectonic models, and the application of fault displacement and seismic hazard to repository design, as well.

EEI/UWASTE trusts that these comments are helpful as NRC prepares the next draft of this technical position. If you have any questions, or require additional information, please call me or Mr. Christopher Henkel (202/508-5510), EEI/UWASTE Program Manager for High-Level Waste.

Sincerely,

Steven P. Kraft
Director, Nuclear Waste
and Transportation

cc: J. Linehan, NRC
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