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POOR QUALITY PAGES

Dr. William Kerr
Chairman, Subcommittee on GETR
Department of Nuclear Engineering
University of Michigan
Ann Arbor, MI 48109

Dear Dr. Kerr:

This is a summary of my observations and conclusions from the Subcommittee meeting of June 16 and 17.

Faulting. That the topographic elevation behind the GETR is produced by faulting is now widely accepted. I made this point in my letter of December 12, 1979. It should also be emphasized that the fault strands at the base of the hill north-east of the GETR have orders of magnitude greater cumulative displacement than any of the strands southwest of GETR, for the latter have relatively negligible topographic displacement.

Old photographs of the GETR foundation show fairly strong evidence against any existing faults under the foundation. This reinforces evidence from the nearby trench. Future slips beneath the foundation are highly unlikely as shown by the probability analysis.

Elements of conservatism in the assignment of a 1-meter seismic slip for design purposes include (1) the neglect of aseismic slip or creep in producing offsets observed in trenches and (2) our inability (in the trench geology) to resolve multiple events that may have produced what we assume is a single earthquake offset. The error bars in this sort of measurement tend to be highly unsymmetrical.

Evidence from the geology and seismic focal mechanisms supports a straightforward tectonic model for the Livermore Valley, which I won't take space to outline here. It is important to note, however, that this kind of tectonic setting is not unusual in basins along the San Andreas fault zone, contrary to claims made in the meeting. The model (and direct evidence) indicates that the USGS (Brabb) is incorrect in inferring left-lateral slip on a Pleasanton fault. Putting the picture together shows that the San Fernando comparison is inappropriate, at least in the scale of the hazard.

Landsliding. The tectonic setting is one of thrustfaulting, modified at the upper toe of the thrust by a topographic load. In addition, like most California hillslopes, this one is characterized by creeping soil and minor shallow landslides. Any attempt to monitor a hypothetical major slide will be hopelessly bogged down in the 'noise' of creeping soil. On the other hand, the hillslope should be analyzed for small superficial slides in relation to the safety of the emergency water reservoirs and piping.

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Conclusion. In my judgement the staff recommendations for design accelerations and offset are appropriate and conservative.

Sincerely,

George Thompson
Geophysicist

Original to 6/1/50