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MEMORY COMMITTEE ON
REACTOR SAFEGUARDS, U.S.N.R.C.

29 May 1984

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AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

Dr. David Okrent
Dr. Richard Savio
ACRS, NRC, Washington, DC

Dear Dave and Dick:

The following remarks pertain to the findings of Dr. James Crouch et al., as presented at the meeting held in Los Angeles on May 24, 1984.

Main conclusions:

1. I think the staff's draft elements for the Diablo Canyon License Condition are very good indeed. They appear to provide logical procedures for dealing with the seismotectonic problems that are now arising and those that may arise in the future. There will surely be a nearly continuous inflow of data.

2. At the present moment, the latest findings (published by Crouch et al.) regarding the Hosgri and other offshore faults do not necessarily increase the maximum ground motion that might be experienced by the Diablo Canyon plant, and do not necessarily increase the frequency of strong earthquakes. As more information is acquired, the implications could be either more favorable or less favorable to the perceived safety of the plant.

Further comments:

If the offshore Hosgri fault dips landward beneath the Diablo Canyon plant, the vertical distance from the site to the fault could be either greater or less than the horizontal distance from the plant to the surface trace of the fault, depending on the curvature of the fault profile, which has not been established.

In any case, it is highly unlikely that a strong earthquake would be generated at a depth less than 8-10 km, as a certain amount of confining pressure is required. If the Hosgri fault were to pass under the plant at a vertical distance of 3 km, say, it would be totally unrealistic to postulate a strong earthquake stemming from the fault directly beneath the plant.

The moderate to inconspicuous disturbance of the uppermost strata near the Hosgri fault, as seen in Dr. Crouch's reflection profiles, would argue for very infrequent (or very small) slip-events if the Hosgri fault is largely a thrust fault. However, we must not be too optimistic, as we still do not know for sure what the size and recurrence interval are for slip-events on the fault.

A downward-flattening, thrust-like configuration would make it highly

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unlikely that the Hosgri fault has accrued 80-150 km of strike-slip. The fault would be characterized by predominant thrust- or oblique-slip, and the vibratory motion might differ somewhat from that which has been envisioned for the Diablo Canyon site. Whether the SSE and the ground motion would be more severe or less severe remains to be seen. It may turn out that, if all other factors were equal, an SSE from a thrust fault would be more severe than an SSE from a strike-slip fault. However, if the Hosgri fault is really a thrust fault, the "new" Hosgri may be shorter than the "old" Hosgri fault. It may not be a part of the San Gregorio zone, after all. It may not have a history of large slip-events. So, the various factors, when combined, may give a result compatible with the earlier postulations.

Sincerely,

Ben M. Page

Benjamin M. Page

Copies sent to each addressee.