

From minutes of meeting, April 20-21, 1967
between PG+E, AEC, Westinghouse

R. S. Boyd.

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Seismic Design

The first topics discussed included the basis for the magnitude of earthquake acceleration proposed and the associated design response spectra. J. Blume detailed the approach used to obtain the earthquake magnitude. Basically, two methods are applied which are based on empirical studies and take into account measured conditions at the site such as shear velocity and density of the underlying material. The results were compared with a third method proposed by Housner. The overall results predicted an average of 0.13g with a worst case extreme of 0.25g for the "B" earthquake proposed, which would govern the containment design. W. Hall commented that the methods used for this extrapolation were only studies and were not intended for design use. Dr. Blume agreed but believes that they do represent a realistic approach to assigning earthquake magnitudes.

For the close in (or "D" earthquake) Dr. Blume predicts an acceleration of 0.2g; however, the design response spectrum proposed peaks in the short period range such that it does not govern the containment design. Mr. Murphy stated that he would prefer that this earthquake not be considered to be so close to the site but should be located further away since it originates as an after shock of an earthquake some distance from the site. Mr. Murphy does agree with the 0.2g acceleration, however, he does not believe that the response spectrum would be much different than the "B" spectrum (which governs containment design).

An important point which Dr. Blume continued to reiterate was that the foundation material is good bedrock which is generally believed to result in less amplification of seismic waves. In his opinion, if the plant were founded on alluvium the spectrum could well be amplified by a factor of 2 or 3.

In summary, it was agreed that the acceleration should be 0.2g for design and a maximum of 0.4g, but that the response spectrum proposed would need to be modified. Dr. Blume stated that he would consider proposing a revised spectrum. We indicated that we would continue to study this problem in light of the material received at this meeting.

Geology

The applicant was requested to present a plot of the plant layout, locating the trenches and the known faults in relation to plant structures. Dr. Jahns said that upon inspection of the trenching he had identified some minor faulting in the vicinity of the proposed location for the containment foundation. He does not believe that these faults will reduce the strength of the bedrock as foundation material. Both Drs. Jahns and Coulter believe that these faults are inactive and are more than 100,000 years old. We

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discussed the significant fault exposed at the seawall and established that it did not appear in any of the trenching in the vicinity of the foundation. In Dr. Jahns' opinion, this larger fault does not run through the site but probably passes to the northwest; the visible smaller faults in the trenches could be branch faults of this larger one but are not of concern to him.

It was established that if the containment were relocated (to move off of the small faults) it would probably lie on similar faults in the new location. Thus, Dr. Jahns concludes that the present proposed location is adequate. They do not intend to do further trenching at the risk of uncovering geologic structures which could lead to additional speculation and possibly delay the project. It was suggested that the exposed fault at the seawall be traced by further trenching to establish its exact location in relation to the containment. The applicant stated that they did not believe this was necessary and that further information of this type would only complicate a contested hearing.

Dr. Jahns stated that none of these faults was similar to the Bodega or Malibu faults. Dr. Coulter agreed with the statements and findings made by Dr. Jahns.

Tsunami

The applicant's consultant on tsunami (Dr. Horrер) presented his method of estimating the maximum high and low water levels resulting from tsunami generated both close in and at great distances. He stated that the particular characteristics of the small Diablo cove and ocean bottom would not amplify a tsunami. These characteristics are based on calculations and measurements of natural wave periods observed at the site. Diablo cove was compared with that at Avila, a few miles south, where fairly large changes in water level have been observed. It was found that the response characteristics of Avila would result in amplitudes 3 to 10 times greater than Diablo cove. In summary, Dr. Horrер stated that in most cases large tsunamis can be explained by studying the characteristics of the coastline. He does not believe that Diablo cove has characteristics which could cause a water level in excess of 18 feet above the mean low water level or a rundown of more than 9 feet in the event of a tsunami.

Mr. Murphy spoke on this topic and presented comments submitted by Gaylord Miller, a tsunami expert of the USC&GS. Dr. Horrер stated that he could respond to all of Mr. Miller's comments if desired. We stated that Mr. Miller's comments would be submitted in a request for additional information.

Structural Design

Dr. Hall and F. Schauer discussed the design of the containment and other structures with the applicant. A list of 15 comments submitted by