

UNITED STATES
CLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

file

NOV 14 1975

Docket Nos. 50-275
and 50-323

Pacific Gas and Electric Company
ATTN: Mr. John C. Morrissey
Vice President & General Counsel
77 Beale Street
San Francisco, California 94106

Gentlemen:

We recently revised our schedule for the safety review of your operating license application for the Diablo Canyon Nuclear Power Plant Units 1 and 2. The changes in the schedule were necessitated by delays in your submittal of required geology and seismology information.

The revised schedule contains the following principal milestones:

Issue SER Supplement on Geology/Seismology	10/31/75
ACRS Full Committee Meeting Complete	12/05/75
Issue SER Supplement	01/02/76
Licensing Effort Complete	04/14/76
(Following hearings and ASLB decision)	

This schedule was based upon the assumption that we would receive complete and acceptable responses to the geology and seismology questions (forwarded by our letter of February 13, 1975) in time for us to complete our review and publish the SER Supplement on October 31, 1975.

Although you responded to some of the questions in August and September, your responses were not completed until October 31, 1975 and our preliminary review indicates that these responses are not adequate. Additional information will be required. The additional information that will be required, based on our preliminary review to date, is described in the enclosure.

We do not know at the present time when you will provide complete responses to the items in the enclosure or how long it will take us to complete our

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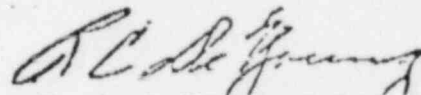
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evaluation of them. However, it appears that the schedule described above will be delayed by at least three months due to this matter. In light of your estimated date of February 1976 for completing construction of Unit 1, we cannot stress too much the importance of your submitting complete and adequate responses as soon as possible.

In addition, we are unable to reach final conclusions on the environmental impact of heated water discharge from the plant or to develop satisfactory environmental technical specifications to guard against potential damage from this heated water until a complete analysis of the thermal model studies, performed during August 1975, is submitted. The preliminary information submitted in October 1975 is not sufficient for these purposes. Unless you can submit complete information (as previously discussed with your personnel) on this matter by mid-January, 1976, we do not believe that we can make our final conclusions on environmental technical specifications in time to proceed to environmental hearings by May 1976. If the environmental hearings cannot be started by May 1976, this matter could become the critical path item in completing the licensing effort. Again, in light of your estimated fuel loading date, we cannot stress too much the importance of submitting a complete and adequate analysis of the thermal model experiments as soon as possible. In addition, very prompt resolution of this matter might permit holding hearings on environmental issues and some safety issues prior to hearings on geology and seismology, which in turn could save time on the critical path to completion of the licensing effort.

Please contact us if you have any questions or comments concerning these matters.

Sincerely,



R. C. DeYoung, Assistant Director
for Light Water Reactors Group 1
Division of Reactor Licensing

Enclosure:
Request for Additional
Information

cc: See page 3

Pacific Gas and Electric
Company

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2.0

SITE CHARACTERISTICS

2.22

The distance from the plant site to the main body of the Hosgri fault is important in determining the maximum acceleration at the plant site due to an earthquake on the Hosgri fault. In Appendix 2.5E to the FSAR you have stated distances and depths you used in your calculations. However, you have not submitted any data which directly demonstrate what the distances and depths are. Therefore, we do not consider your supporting documentation to be adequate. We will need migrated and unmigrated seismic profiles which demonstrate what the depths and distances are. These should include at least the pertinent seismic profiles obtained by Western Geophysical Company in the vicinity of the plant site and which your personnel have stated would be provided to us. Your response should include a thorough technical description of the methods used to fix the survey ships' positions and the accuracy and reliability of those methods. You should also describe the velocities of the layers used in the migration process.

ENCLOSURE NO. 1

REQUEST FOR ADDITIONAL INFORMATION

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON, UNITS 1 AND 2

DOCKET NUMBERS 50-275 AND 50-323

You have used the SAM III procedure developed by John A. Blume to calculate the peak site acceleration due to an earthquake on the Hosgri fault. You noted that this procedure is new and, as yet, has not been published in the technical literature. Following our informal request for further justification of this procedure you expanded your discussion of the procedure in Appendix 1A to Appendix 2.5E to the FSAR (Amendment 36).

This discussion, however, is not adequate to enable us to verify the validity of your approach. In order for us to give credit for your method of calculating the peak site acceleration your submission will have to be at least as detailed as the original technical paper describing S.M. I and should include a discussion of differences between SAM I and SAM III and a careful and thorough technical description of the reliability and statistical parameters concerning the values obtained using the SAM III procedure. The submittal should fully compare the results obtained by the SAM III procedure and results obtained by procedures derived and published by other investigators, e.g., Trifunac and Brady (1975) and Schnable and Seed (1973). Any differences in results should be explained in technical detail. If you cannot provide this information in the detail described above, we and our consultants will not be able to approve your procedure for calculating the peak site acceleration.

2.24

You have stated in Appendix 2.5E to the FSAR that attempts to obtain source mechanism solutions for the 1927 event rule out a predominantly strike slip movement. In order to evaluate this statement we will need a detailed analysis of the published literature which you have cited with respect to alternative focal mechanisms supported by the data and the unpublished study by Smith to support this conclusion. You should include a discussion of the range of fault strikes and slip vectors permitted by the data for each of the incomplete fault plane solutions cited. You should also submit copies of all seismograms used in the analysis, including calibration data, if available, and direction and orientation markings for each seismogram.

2.25

The problems involved in evaluating the southern termination of the Hosgri fault and the relationship of the Hosgri fault to the San Simeon fault on the north are such that we and our consultants will need to review all available seismic profiles. Therefore, you should submit all such profiles which you have not yet submitted, including those obtained by Western Geophysical Company south of latitude 35°N and north of latitude $35^{\circ}40'\text{N}$.

2.26

It is our position that the facility should meet the requirements of Appendix A to 10 CFR Part 100 where the maximum earthquake associated with the Hosgri fault is considered to be a safe shutdown earthquake. (We consider this to be a separate matter from your original proposed Double Design Earthquake, which we also consider to be a Safe Shutdown Earthquake under the requirements of Appendix A to 10 CFR Part 100).

You have proposed a peak site acceleration of 0.5g for the maximum earthquake associated with the Hosgri fault (which we consider to be a Safe Shutdown Earthquake) and you have submitted the results of abbreviated structural analyses of the effects of this earthquake. You considered the results of these abbreviated analyses in conjunction with the complete analyses of the effects of the Double Design Earthquake and concluded that the plant design is adequate. We do not disagree with this general approach.

However, you have not submitted any information concerning the plants' ability to withstand an Operating Basis Earthquake with a peak acceleration of 0.25g (as opposed to the original Design Earthquake with a peak acceleration of 0.2g). Appendix A to 10 CFR Part 100 requires that the plant be designed to withstand an Operating Basis Earthquake with a peak acceleration of at least 1/2 the peak acceleration of the Safe Shutdown Earthquake.

Accordingly, as we have previously informed your personnel informally, it is our position that you must either demonstrate that the facilities are adequately designed for an Operating Basis Earthquake with a peak acceleration of 0.25g or else justify, as an exception to Appendix A to 10 CFR Part 100, the acceptability of an Operating Basis Earthquake with a peak acceleration of 0.2g (which corresponds to your original Design Earthquake) for this site. In the event you choose to justify the 0.2g value you should also describe the basis for your conclusions regarding the adequacy of the design for an Operating Basis Earthquake at 0.2g using the spectrum you have proposed for the maximum earthquake on the Hosgri fault. Justification of exceptions to Appendix A to 10 CFR Part 100 is discussed in Section II of that document. Justification of Operating Basis Earthquake acceleration levels is discussed in Section II.8 of Standard Review Plan 2.5.2, "Vibratory Ground Motion".

2.27

You have not described, in Amendment 37 to the FSAR, the response of the turbine building, the intake structure or safety related tanks to the maximum earthquake on the Hosgri fault. As we have previously informed your personnel informally, the turbine building and the intake structure contain important safety related components and the basis for protecting these components has been analyses demonstrating that structural failure would not occur (for the Double Design Earthquake at 0.4g). In addition, safety related tanks are important to safety. Therefore, it is our position that you should submit the results of analyses for these structures similar to those you have submitted for the containment building and auxiliary structure showing the effects of the maximum earthquake on the Hosgri fault. If stresses exceed allowables you should discuss the amount and the basis for your conclusions regarding adequacy of the structural design.