

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
PACIFIC GAS AND ELECTRIC COMPANY) Docket Nos. 50-275 O.L.
(Diablo Canyon Nuclear Power Plant,) 50-323 O.L.
Units Nos. 1 and 2))

INTERROGATORIES PROPOUNDED TO
PACIFIC GAS & ELECTRIC COMPANY
BY SEVERAL INTERVENORS

REGARDING GEOLOGY, SEISMICITY QUALIFICATION

Under the authority of 10 C.F.R. §2.7406, 10 C.F.R. Part 2 Appendix A, and the Federal Rules of Civil Procedure, Intervenor SCENIC SHORELINE PRESERVATION CONFERENCE, SAN LUIS OBISPO MOTHERS FOR PEACE, SANDRA SILVER, ECOLOGY ACTION CLUB, and JOHN J. FORSTER ask that Pacific Gas and Electric Company, their attorneys or other duly authorized agents or employees answer in writing, under oath, and within fifteen days from the receipt hereof, the interrogatories contained herein:

DEFINITIONS

1. As used herein, "you" and "P.G.&E." shall mean the Pacific Gas and Electric Company, applicant in the above-entitled proceedings, and any employees of, contractors or consultants to, or other agents of said company.

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2. As used herein, "magnitude" and "M" shall mean the measure of earthquake magnitude according to the Richter scale.

3. As used herein, "items" shall mean structures, systems, components, and parts of the Diablo Canyon Nuclear Generating Station.

4. As used herein, "DCNGS" shall mean the entire Diablo Canyon Nuclear Generating Station.

5. As used herein, "SSE" shall mean Safe Shutdown Earthquake as defined in 10 C.F.R. Part 100 Appendix A, III (c).

Interrogatory No. 1

What magnitude earthquake on the Hosgri fault near the DCNGS do you contend constitutes a proper, conservative value for use in evaluating the seismic safety of the DCNGS? Please state each and every fact upon which you base this contention.

Interrogatory No. 2

What ground acceleration from a 7.5M earthquake on the Hosgri fault do you contend constitutes a proper, conservative value for use in evaluating the seismic safety of the DCNGS? Please state each and every fact upon which you base this contention.

Interrogatory No. 3

What reductions in the response spectra for the various buildings of the DCNGS, due to the large foundations of these buildings, constitute proper, conservative values for evaluating the seismic safety of the DCNGS? Please state each and every fact upon which you base this contention.

Interrogatory No. 4

What value for structural damping for DCNGS do you

contend constitutes a proper, conservative value for use in evaluating the seismic safety of DCNGS? Please state each and every fact upon which you base this contention.

Interrogatory No. 5

Do you contend that the Hosgri fault is not linked to the San Gregario fault to form one fault system? If so, please state each and every fact upon which you base this contention.

Interrogatory No. 6

Do you contend that the Hosgri fault is not linked to the San Simeon fault to form one fault system? If so, please state each and every fact upon which you base this contention.

Interrogatory No. 7

Where do you contend is the location of the southeasternmost or downcoast end of the Hosgri fault? Please state each and every fact upon which you base this contention.

Interrogatory No. 8

What amount of strike-slip movement do you contend has occurred on the Hosgri fault since the Miocene geologic time period? Please state each and every fact upon which you base this contention.

Interrogatory No. 9

Do you contend that the strong (7.3M) earthquake recorded near the central California coast on November 4, 1927 did not take place on the Hosgri fault? If so, please identify the fault on which you contend this earthquake did take place and state each and every fact upon which you base this contention.

Interrogatory No. 10

Has P.G.&E. conducted geologic mapping of the Piedras-Blancas region? If so, please state:

- (a) The identity of the person or persons who actually conducted such mapping;
- (b) The professional qualifications and experience of such person or persons;
- (c) A detailed description of the results of such mapping.

Interrogatory No. 11

Do you possess or are you aware of any studies, reports, data or other information which relates in any way to the age of the non-marine rocks in the Piedras-Blancas range? If so, for each such report, study, piece of data, or other item of information, please state the following:

- (a) The identity and professional qualifications of the persons who conducted the study and/or gathered the data;
- (b) The dates during which the study was conducted and/or the data was gathered;
- (c) The type of data that supports the study and/or the type of data itself (e.g., radiometric dating, rock samples, etc.);
- (d) A detailed explanation of the findings of the study and/or the age determinations such data supports.

Interrogatory No. 12

Do you possess or are you aware of any studies, reports, data or other information which relates in any way to the age of any materials in Standard Oil Company's Oceana well, including without limitation the age of the sediments in such well? If so, for each such report, study, piece of data, or other item of information, please state the following:

(a) The identity and professional qualifications of the persons who conducted the study and/or gathered the data;

(b) The dates during which the study was conducted and/or the data was gathered;

(c) The type of data that supports the study and/or the type of data itself (e.g., radiometric dating, rock samples, etc.);

(d) A detailed explanation of the findings of the study and/or the age determinations such data supports.

Interrogatory No. 13

Do you possess or are you aware of any trace element studies or data relating in any way to the non-marine red beds near Breaker Point? If so, for each such report, study, piece of data, or other item of information, please state the following:

(a) The identity and professional qualifications of the persons who conducted the study and/or gathered the data;

(b) The dates during which the study was conducted and/or the data was gathered;

(c) The type of data that supports the study and/or the type of data itself (e.g., radiometric dating, rock samples, etc.);

(d) A detailed explanation of the findings of the study and/or the age determinations such data supports.

Interrogatory No. 14

Do you possess or are you aware of any studies, reports, data or other information relating in any way to the age of the volcanic rocks in the Lospe formation south of Point Sal and/or in the Lospe formation north of San Simeon? If so, for each such report, study, piece of data, or other item of information, please state the following:

(a) The identity and professional qualifications of the persons who conducted the study and/or gathered the data;

(b) The dates during which the study was conducted and/or the data was gathered;

(c) The type of data that supports the study and/or the type of data itself (e.g., radiometric dating, rock samples, etc.);

(d) A detailed explanation of the findings of the study and/or the age determinations such data supports.

Interrogatory No. 15

Do you possess or are you aware of any studies, reports, data or other information relating in any way to the age of the

tertiary shale beds (Monterrey rocks and younger) both north of San Simeon and south of Point Sal? If so, for each such report, study, piece of data, or other item of information, please state the following:

(a) The identity and professional qualifications of the persons who conducted the study and/or gathered the data;

(b) The dates during which the study was conducted and/or the data was gathered;

(c) The type of data that supports the study and/or the type of data itself (e.g., radiometric dating, rock samples, etc.);

(d) A detailed explanation of the findings of the study and/or the age determinations such data supports.

Interrogatory No. 16

Do you possess or are you aware of any studies, reports, data or other information relating in any way to the Lopse formation at Brown Road in the Point Sal area? If so, for each such report, study, piece of data, or other item of information, please state the following:

(a) The identity and professional qualifications of the persons who conducted the study and/or gathered the data;

(b) The dates during which the study was conducted and/or the data was gathered;

(c) The type of data that supports the study and/or the type of data itself (e.g., radiometric dating, rock samples, etc.);

(d) A detailed explanation of the findings of the study and/or the age determinations such data supports.

Interrogatory No. 17

Have you compared the lithologies in the Brown Road Lospe formation wiht similar rocks near Breaker Point in San Luis County? If so, please furnish a detailed explanation of the results of such comparison.

Interrogatory No. 18

Has P.G.&E. implemented document and change control procedures of factory and field changes in seismic design? If so, please describe such procedures in detail.

Interrogatory No. 19

Please describe in detail how decisions regarding changes in the seismic design of Class I components and equipment have been documented, transmitted, executed, monitored and/or verified.

Interrogatory No. 20

Was any equipment for DCNGS manufactured, seismically qualified, and shipped to you by equipment vendors before such vendors received specific floor response spectra from you? If so, please explain how equipment vendors qualified such equipment before receiving specific floor response spectra and identify the documentation for such qualification.

Interrogatory No. 21

With regards to Category (Class) I structures, systems and components, please state the following:

(a) Whether an exhaustive list of the seismic qualification status of all such Class I items exists and, if so, its location in your company's files;

(b) Which such items have been qualified to the current seismic criteria by analysis;

(c) Which such items have been qualified to the current seismic criteria by test and the nature of such tests;

(d) Which such items have been qualified to the current seismic criteria by other means;

(e) Which such items have not yet been qualified to the current seismic criteria;

(f) The plan and schedule for qualification to the current seismic criteria of all items identified in (e) above;

(g) The location in your company's offices and files of documentation of seismic qualification of Class I items.

Interrogatory No. 22

Did you prepare a detailed audit check list for the turbine building pursuant to discussions with the Nuclear Regulatory Commission during their April, 1975 audit of DCNGS seismic design? If so, please state its location in your company's offices and files.

Interrogatory No. 23

What is the effect on stress and design margins of using normal material strengths in turbine building calculations as opposed to as-built material strengths?

Interrogatory No. 24

Has Westinghouse provided you with any data or information for incorporation in the detailed seismic audit checklist for steam generators and reactor cooling pumps and/or for the support structures and systems of said steam generators and reactor cooling pumps? If so, please state the following:

- (a) A detailed description of such data or information;
- (b) Where documents which record, report or in any way relate to such data or information may be found in your files.

Interrogatory No. 25

Have you done any seismic tests to verify the validity of the analytical techniques used to seismically qualify Class I control panels and associated equipment to current seismic load requirements? If so, for each such test, please state the following:

- (a) A detailed description of the nature and/or methodology of each such test;
- (b) A detailed description of the results of each such test;
- (c) Where documents which record, report, or in any way relate to such tests may be found in your files.

Interrogatory No. 26

With regard to diesel generators, please state and/or provide the following:

- (a) A detailed description of all actual seismic testing that has been conducted to date to verify their

seismic qualification to current seismic load requirements;

(b) A detailed description of and time schedule for each and every seismic test presently planned for the deisel generators to insure that they meet current seismic load requirements;

(c) Whether the diesel generators are required to meet the SSE and if not, why not;

(d) The response spectra for the diesel generators at their location at DCNGS.

. Interrogatory No. 27

With regards to all Class I valves, please state the following:

(a) The analysis you have done to show the actual response spectra and seismic loads, both horizontal and vertical, that the SSE would produce at the location of each Class I valve;

(b) The analysis done to insure that the valves are qualified to withstand the seismic loads, both vertical and horizontal, that the SSE would produce;

(c) The identity of all documents reporting, recording, describing or in any way relating to the subject matter of (a) and (b) above, including without limitation documentation of the comparability of the expected seismic loads at each valve location and the seismic qualification of each valve;

(d) The location in your offices and files of all documentation identified in (c) above.

Interrogatory No. 28

Regarding the U-bend region of the steam generators, please state the following:

- (a) The total stress in this region under full design pressure and full SSE;
- (b) The total stress in the region under the condition of a Loss of Coolant Accident (LOCA) and an SSE;
- (c) In determining the stress levels developed during the combined load levels in (a) and (b) above, whether assumptions were made to include the effects of U-tube corrosion on such stress levels. If such assumptions were made, please describe such assumptions in detail;
- (d) The identity of all documents recording, reporting or in any way relating to the subject matter of (a-c) above, the location of such documents in your offices and files.

Dated: March 22, 1977

Respectfully submitted,

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