

ACRS-2212

PROPOSED MINUTES OF THE  
COMBINED ACRS SUBCOMMITTEES MEETING  
EXTREME EXTERNAL PHENOMENA AND DIABLO CANYON  
MAY 24, 1984  
LOS ANGELES, CALIFORNIA

**CERTIFIED**

PDR 062185

The ACRS Subcommittees on Extreme External Phenomena and Diablo Canyon Units 1 & 2 met on May 24, 1984 in Los Angeles, CA at the Airport Holiday Inn. The purpose of this meeting was to review matters related to Chairman Palladino's April 13, 1984 request for comments on Diablo Canyon. Chairman Palladino's April 13, 1984 letter requested that the ACRS comment on: (1) a proposed license condition which would require PG&E to develop and implement the state-of-the-art program to evaluate the seismic design basis for Diablo Canyon, (2) the technical paper by J. Crouch, et al, which recharacterizes the Hosgri fault, (3) the appropriateness of PG&E taking the lead in the management of the proposed seismic reevaluation. The ACRS Subcommittees heard presentations from representatives of NRR, PG&E, and Dr. J. Crouch.

A copy of the notice of the meeting is included as Attachment A; the list of attendees is included as Attachment B; the schedule of this meeting is included as Attachment C; and the handouts from this meeting are included in the ACRS files. The meeting began at 8:30 A.M. on May 24, 1984 with a short executive session in which Dr. Okrent, the Subcommittee Chairman, summarized the objectives of the meeting. The meeting was adjourned at approximately 6:00 P.M. and conducted in open session. Dr. R. Savio and Mr. J. McKinley were the Designated Federal Officials for this meeting.

DISCUSSION OF THE DIABLO CANYON SEISMIC LICENSE CONDITION (J. Knight, S. Brocoum, S. Israel, D. McMullen, R. Rothman, and R. Jackson, NRC Staff)

Messrs. Knight, Brocoum, Israel, McMullen, Rothman, and Jackson discussed the NRC Staff's position on the proposed seismic license condition for Diablo Canyon. The Commission has voted in favor of requiring that PG&E develop and implement a state-of-the-art program to reevaluate the seismic design basis used for Diablo Canyon. The intent of requiring this seismic reevaluation is that the information which has been developed since the last ASLB hearing in

1979 be reevaluated in a systematic fashion. A program plan and implementation schedule is to be developed by PG&E by January 30, 1985 and the evaluation program is to be completed in a final report submitted to the NRC by July 1, 1988. The NRC Staff has developed a general plan for this reevaluation program (see Attachment D, May 7, 1984 letter from R. Jackson to R. Vollmer). The plan which the NRC Staff has developed has three basic elements. They are: (1) that PG&E review all relevant geologic and seismic information that has become available since the 1979 ASLB hearing and evaluate the impact of this information on the design basis ground motion; (2) that PG&E perform a seismic PRA to determine which structures, systems, or components are important in preventing core melt; and (3) that PG&E, as necessary, determine the seismic margins which are associated with these critical structures, systems, and components. The NRC Staff has proposed that PG&E take the lead in managing this seismic reevaluation and that the NRC Staff perform a independent, but more limited, assessment which would be geared toward the review of the PG&E work. The NRC effort would involve assistance from the the USGS, selected national laboratories, and Dr. Slemons. It is proposed that the ACRS be involved in the review of both the PG&E and NRC Staff efforts. The NRC Staff proceeded to outlined the fundamental elements of their proposed PG&E and NRC Staff evaluation plans. These are summarized on pages 1-7 of Attachment D.

There was some discussion of the nature of the PRA to be performed in conjunction with this seismic reevaluation. Representatives of PG&E indicated that it was PG&E's intention to perform a "full scope" PRA (as opposed to a simple seismic PRA) and to use contractors to perform a state-of-the-art evaluation. It was noted that, to the extent practical, as built, rather than generic, Diablo Canyon fragilities would be used in this evaluation.

#### NRC WORKING GROUP ON DESIGN MARGINS COMMENTS (R. Jackson)

Mr. Jackson noted that an internal NRC working Group had been set up to guide the NRC in the establishment of a seismic design margins program. The Working Group is chaired by Messrs. Jackson and Richardson and includes representatives

from the probabilistic risk assessment, licensing, and research areas within the NRC. A panel of experts has been assembled to aid in the formulation of an NRC program.

PG&E PRESENTATIONS (J. Hoch, H. A. Cornell, R. Kennedy, and D. Brand)  
Mr. Hoch, Dr. Kennedy, Dr. Cornell, and Mr. Brand discussed PG&E position on the proposed NRC plan for a seismic reevaluation. PG&E agrees with this plan and will formulate a detailed plan for implementing the NRC Staff's proposal by January 30, 1985. PG&E will augment this work by performing a full PRA rather than a seismic PKA and expects to work closely with the NRC Staff in this program.

SUMMARY OF THE CROUCH PAPER (J. Crouch, NEXTON, Inc.)  
Dr. Crouch summarized a recent paper by J. Crouch, S. Bachman, and J. Shay entitled, "Post-Miocene Compressional Tectonics Along the Central California Margin." This paper presents a interpretation of a number of high resolution seismic reflection profiles which were obtained offshore in the Santa Maria Basin, northern Santa Barbara Channel, and Point Conception areas. These seismic reflection profiles reveal major post-Miocene thrust faulting in the offshore central California region. These thrusts can be recognized on lines both normal and parallel to the regional structural grain. On lines normal to the grain, they commonly imbricate and curve asymptotically downward to a basal sole thrust fault. On lines parallel to the grain, they appear as a band of nearly horizontal reflectors that truncate tightly folded strata above the thrust fault.

PG&E PRESENTATION (D. Hamilton and S. Smith)  
Messrs. Hamilton and Smith presented the PG&E comments on the paper by Crouch, Bachman, and Shay. PG&E indicated that they believe that the interpretation presented in this paper by Crouch, et al, was generally consistent with the data and interpretations that were submitted and reviewed previously in connection with licensing studies for Diablo Canyon. They noted that this gives further evidence of the unlikelihood of a large earthquake being

generated on the Hosgri fault. They additionally noted that they believe that the fault dips under and passes below the plant site at distances greater than 6 kilometers.

NRC STAFF PRESENTATION (R. Jackson, R. Rothman, and S. Brocoum)

Messrs. Jackson, Rothman, and Brocoum summarized the Staff's interpretation of the paper by Crouch, et al. They noted that they have completed a preliminary review of the paper and have concluded that the work described therein is of high quality and bears serious consideration within the Diablo Canyon seismic evaluation. They believe that the paper should be reviewed within the context of other information which has become available over the past years. The Staff noted that the distance to which the fault approaches the plant foundation and the differences in the nature between the near-source motion generated by strike slip and thrust fault should be considered. It was noted that if the Hosgri is indeed a thrust fault, the observed lack of sea floor offset would indicate a longer recurrence interval for a major earthquake than if the Hosgri were a strike-slip fault. It was also noted that if the Hosgri was a thrust fault it would raise the possibility that small faults observed near the plant site would be splays of the Hosgri.

The NRC Staff discussed these estimates as to what difference in ground motion might be expected between strike slip and thrust faults. They noted that mechanisms for ground motion were not well quantified and were still the subject of some speculation. The NRC used techniques and data published by R. Campbell (1983) to obtain the following estimates for ground motion.



Magnitude	Distance (Km)	Fault Type	Average PGA (g)	84% PGA (g)
7.5	5.8	Strike Slip	0.42	0.61
7.5	5.8	Thrust	0.59	0.86
7.5	2.5	Thrust	0.74	1.08
7.0	5.8	Thrust	0.52	0.75
7.0	2.5	Thrust	0.69	1.02
6.5	5.8	Thrust	0.44	0.65
6.5	2.5	Thrust	0.64	0.93

The comparisons of vertical and horizontal ground acceleration were also made. These estimates were also taken from work by Campbell and the results appeared to be dominated by data taken on soil sites.

Magnitude	Distance	Fault Type	Average PVA (g)	84% PVA (g)	PVA PHA
7.5	5.8	Strike Slip	0.51	0.77	1.21
7.5	5.8	Thrust	0.73	1.09	1.23
	2.5	Thrust	1.1	1.6	1.5

The NRC Staff stated that they were currently negotiating a contract with the USGS for a continuation of Dr. Campbell's work.

#### PRESENTATION BY MEMBERS OF THE PUBLIC

Mr. B. Campbell, Ms. S. Silver, Ms. A. Rich, Ms. J. Evered, and Mr. S. Mendes spoke as members of the public. All of these persons opposed the operation of the Diablo Canyon Nuclear Power Plant. The adequacy of the seismic design, the adequacy of the quality control used in the construction of the plant, and the integrity of the review process were the principal issues that were raised. Material was provided by the speakers and is included as Attachment F.

#### GENERAL DISCUSSION

The Staff's proposal for a seismic reevaluation and the paper by Crouch, Bachman, Shay were discussed at some length. It was generally concluded that the paper by Crouch, et al, was high quality work and represented a significant advance in the interpretation earthquake mechanisms in central California. A number of proposals were made for specific elements that should be included in the seismic reevaluation. These were: (1) a state-of-the-art inelastic analysis of the as-built structures at Diablo Canyon; (2) a thorough review of proprietary oil-well drilling data; (3) the use of free-field and in-plant seismograph data that has been obtained at Diablo Canyon during recent earthquakes; (4) reconsideration of the nature of the on-shore faults in light of the possibility of the existence of an underlying thrust fault; (5) reexamination of the postulated connection of the Hosgri fault with the San Gregorio and San Simeon faults.

ATTACHMENT A

*Agency Clearance Officer:* Herman G. Fleming. (202) 357-9421

*OMB Officer:* Carlos Teliez. (202) 395-7340

*Title:* Survey of Utilization of University-Industry Cooperative Research Centers: A Practice Manual *Affected Public:* Individuals, State or local governments, business, nonprofit institutions, and small businesses or organizations

*Number of Responses:* 1,500 responses; total number of burden hours—375

*Abstract:* NSF prepares and distributed in 1982 a manual providing practical guidance on planning, organizing and implementing university-industry cooperative research centers. User feedback is needed from the manual's individual recipients in industry and academia on how well the manual has served their needs, and what might be done to improve it and NSF's continuing role in fostering better university-industry research collaboration.

Herman G. Fleming

*OMB Clearance Officer*

April 30, 1984

U.S. DEPARTMENT OF COMMERCE

BUILDING CODE 7550-01-W

## NUCLEAR REGULATORY COMMISSION

### Advisory Committee on Reactor Safeguards

#### Combined Subcommittee on Diablo Canyon Nuclear Power Plant Units 1 and 2 and Extreme External Phenomena: Meeting

The ACRS Subcommittee on Diablo Canyon Nuclear Power Plant Units 1 and 2 and Extreme External Phenomena will hold a public hearing on May 24, 1984 at the Hollywood Inn Airport, 9901 S. La Cienega Blvd., Los Angeles, CA. The Subcommittee will review matters related to Diablo Canyon as requested in an April 10, 1984 letter from N. Palladino to J. Flowers. This letter requested the ACRS review (1) a proposed license condition which would require Pacific Gas and Electric to do a seismic study to evaluate the Diablo Canyon design basis; (2) the appropriateness, if this study was done, of Pacific Gas and Electric taking the lead on this project; and (3) matters relating to the Hesperia fault as discussed in a paper entitled "Post-Miocene Compressional Tectonics Along the Central California Margin" by J. K. Crouch, et al.

In accordance with the procedures outlined in the Federal Register on

September 28, 1983 (48 FR 44291), oral or written statements may be presented by members of the public; recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the Cognizant Federal Employee as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements.

The entire meeting will be open to public attendance.

The agenda for subject meeting shall be as follows:

**Thursday, May 24, 1984—8:30 a.m. Until the Conclusion of Business**

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the Pacific Gas and Electric Company, NRC Staff, their consultants, and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant Designated Federal Employee, Dr. Richard Savio (telephone 202/395-3457) between 8:15 a.m. and 5:00 p.m. EST.

Dated: April 24, 1984

John C. Hoyle

*Advisory Committee Management Officer*

U.S. NUCLEAR REGULATORY COMMISSION

BUILDING CODE 7550-01-W

[Dockets Nos. 50-321 and 50-366]

Georgia Power Company, et al. (Edwin I. Hatch Nuclear Plant, Units Nos. 1 and 2); Exemption

I

The Georgia Power Company (GPC or the licensee) and three other co-owners are the holders of Facility Operating Licenses Nos. DPR-57 and NPF-5 which authorize operation of the Edwin I. Hatch Nuclear Plant, Units 1 and 2 (Hatch or the facilities) at steady state reactor power levels not in excess of 2436 megawatts thermal for each unit. The facilities are boiling water reactors

located at the licensee's site in Appling County, Georgia. The licenses are subject to all rules and regulations of the Nuclear Regulatory Commission (the Commission).

II

On November 19, 1980, the Commission published a revised 10 CFR 50.48 and a new Appendix R to 10 CFR 50 regarding fire protection features of nuclear power plants (45 FR 76602). The revised § 50.48 and Appendix R became effective on February 17, 1981. Section III of Appendix R contains fifteen subsections, lettered a through O, each of which specifies requirements for a particular aspect of the fire protection features at a nuclear power plant. One of these fifteen subsections, III G., is the subject of this Exemption. Specifically, subsection III G.2 requires that one train of cables and equipment necessary to achieve and maintain safe shutdown be maintained free of fire damage by one of the following means:

a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier.

b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area or

c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

III

By letters dated July 1, 1982, as supplemented by letters dated April 1, May 27, November 16 and 30 and December 20, 1983, the licensee requested an exemption from the requirements of subsection III G.2 of Appendix R in 26 areas of the Edwin I. Hatch Nuclear Plant, Units 1 and 2. The acceptability of the exemption request for each of these 26 areas is addressed below. More details are contained in the Commission's related Safety Evaluation.

IV

*Areas:*

4160V Transformer Room—Unit 1

West 600V Switchgear Room—Unit 1

ATTACHMENT B



SUBCOMMITTEE MEETING: COMBINED EXTREME EXTERNAL PHENOMENA & DIABLO CANYONLOCATION: Holiday Inn, Los Angeles, CA

May 24, 1984

ATTENDANCE LIST**PLEASE  
PRINT**

NAME	AFFILIATION
1. D. OKRENT	CHAIRMAN EEP SUBCOMMITTEE ACRS
2. C.P. SIESS	CHAIRMAN DIABLO CANYON SUBCOMMITTEE ACRS
3. W. KERR	ACRS MEMBER
4. M. CARBON	" "
5. J. EBERSOLE	" "
6. H. ETHERINGTON	" " (EMERITUS)
7. B. PAGE	ACRS CONSULTANT
8. G. THOMPSON	" "
9. J. MAXWELL	" "
10. M. TRIFUNAC	" "
11. E. LUCO	" "
12. R. SAVID	ACRS Staff DFE
13. J. MCKINLEY	" "
14. C.A. Cornell	CAC, Inc.; consultant to PG&E
15. RR Fray	PG&E
16. John B. Hoch	Diablo Canyon Project - PG&E
17. D.A. BRAND	PG&E
18. PARSONS S LEW	Diablo Canyon Project - PG&E
19. HOWARD FRIEND	" " " - Bechtel
20. George A. Maniatis	Pacific Gas & Electric Co.
21. Thomas C. Esselman	Westinghouse
22. Chi-Wen Lin	Westinghouse
23. John W. Call	Diablo Canyon Project - Bechtel
24. W.H. White	" "

WORKING COMMITTEE MEETING: COMBINED EXTREME EXTERNAL PHENOMENA & DIABLO CANYON

LOCATION: Holiday Inn, Los Angeles, CA

May 24, 1984

ATTENDANCE LIST

PLEASE  
PRINT

	AFFILIATION
R. V. BETTINGER	P. G. and E.
D. H. Hamilton	E. S. A.
F. W. BRADY	P G & E
John Howland	P G & E
M. J. ADAM	BECHTEL
E. M. Burns	WESTINGHOUSE
F. SCAPELLATO	WESTINGHOUSE
Tadine Pierce	KPFK Radio Los Angeles
HARLAN C. SHAW	PACIFIC GAS & ELECTRIC Co.
Richard F. Locke	PACIFIC GAS & ELECTRIC Co.
Joseph Donohue	L A. DAILY NEWS
Otto Stenhardt	PACIFIC GAS & ELECTRIC Co.
Robert P. Kennedy	Structural Mechanics Assoc.
James K. Granch	Nektar Inc.
GERALD FRAZIER	Science Applications
Bruce Norton	Norton, Burke, Berry & French, P.C.
MAURICE SIMERVILLE	URS BLUME / BERKELEY
Paul D. Smith	Lawrence Livermore Nat. Lab.
RANDY BAKER	KSBY-TV, SANTA BARBARA, S.C.O.
DAVID W. OGDEN	PG & E
R. P. DAVIN	P G and E
Alberta L. Rich	C. C. P. A. S.
STANLEY H. MENDES	STR'L ENG.
CRAG STERBINS	KUEC - S.L.O.

U.S. AIR FORCE RECORDS. COMBINED EXTREME EXTERNAL PHENOMENA & DIABLO CANYON

LOCATION: Holiday Inn, Los Angeles, CA

May 24, 1984

### ATTENDANCE LIST

PLEASE  
PRINT

[illegible]

ATTACHMENT C

5/10/84

PROPOSED AGENDA FOR THE  
DIABLO CANYON AND EXTREME EXTERNAL PHENOMENA  
SUBCOMMITTEE MEETINGS ON THURSDAY, MAY 24, 1984

- |  |                       |                   |                  |
|--|-----------------------|-------------------|------------------|
| 1. Executive Session   | C. Siess<br>D. Okrent | 15 Min.           | 8:30 - 8:45 am   |
| 2. Status of licensing activities<br>on Diablo Canyon  | NRC Staff             | 15 Min.           | 8:45 - 9:00 am   |
| 3. Discussion of issues raised in<br>April 13, 1984 Letter from<br>N. Palladino to J. Ebersole |                       |                   |                  |
| a) Discussion of proposed seismic<br>reevaluation  |                       |                   |                  |
| 1) Discussion of NRC Staff<br>proposal for a seismic<br>reevaluation                           |                       | 1 Hr &<br>30 Min. | 9:00 - 10:30 am  |
| ***** BREAK *****  |                       | 15 Min.           | 10:30 - 10:45 am |
| 2) Comments from NRC Working<br>Group on Seismic Design<br>Margins                             |                       | 30 Min.           | 10:45 - 11:15 am |
| 3) PG&E Comments   |                       | 30 Min.           | 11:15 - 11:45 am |
| 4) General discussion and<br>ACRS Consultant's comments  |                       | 60 Min.           | 11:45 - 12:45 pm |
| ***** LUNCH *****  |                       | 1 Hour            | 12:45 - 1:45 pm  |
| b) Discussion of technical paper<br>by J. Crouch, et al  |                       |                   |                  |
| 1) Presentation by J. Crouch   |                       | 30 Min.           | 1:45 - 2:15 pm   |



2) Discussion of NRC Staff position as to the impact on the design basis ground motion	60 Min.	2:15 - 3:15 pm
***** BREAK *****	15 Min.	3:15 - 3:30 pm
3) USGS comments	30 Min.	3:30 - 4:00 pm
4) PG&E comments	60 Min.	4:00 - 5:00 pm
5) General discussion and comments by the ACRS Consultants and J. Crouch	60 Min.	5:00 - 6:00 pm
4. Summary, conclusions and future actions	C. Siess D. Okrent 30 Min.	6:00 - 6:30 pm
**** Adjournment ****		6:30 pm

ATTACHMENT D

1

B. CONDITION 1 - UPDATE GEOLOGY & SEISMOLOGY

1. REQUIREMENTS

- A. EVALUATE POST-1979 ASLB HEARING INFORMATION
- B. REEVALUATE SELECTED PRE-1979 DATA THAT MAY BE NEEDED TO FILL IN GAPS IN THE NEW DATA, USING NEW REPROCESSING TECHNIQUES

2. PURPOSES

- A. CONFIRM CHARACTER OF HOSGRI AT DEPTH
- B. CONFIRM OVERALL LENGTH OF HOSGRI IN LIGHT OF THRUSTING HYPOTHESIS
- C. CONFIRM REGENCY OF LAST MOVEMENT & DETERMINE RECURRENCE
- D. CONFIRM THAT THERE ARE NO SIGNIFICANT THRUST SPLAYS CLOSER TO SITE

C. CONDITION 2 - REEVALUATE THE SSE

1. REQUIREMENTS - MAGNITUDE OF SSE

- A. FAULT LENGTH
- B. RUPTURE LENGTH
- C. SLIP RATE
- D. MAXIMUM DISPLACEMENT FROM SINGLE EVENT
- E. HISTORICAL SEISMICITY
- F. OTHER APPROACHES SUCH AS AREA OF FAULT PLANE TO ESTIMATE MAGNITUDE

2. REASONS

- A. NEW DATA ON GEOLOGY AND TECTONICS OF COASTAL CALIFORNIA THAT MUST BE TAKEN INTO ACCOUNT
- B. NEW TECHNIQUES FOR ESTIMATING MAGNITUDE FROM GEOLOGICAL RECORD
  - (1) LENGTH OF FAULT
  - (2) LENGTH OF RUPTURE DURING SINGLE EARTHQUAKE
  - (3) SLIP RATE
  - (4) MAXIMUM DISPLACEMENT FROM SINGLE EARTHQUAKE
  - (5) AREA OF RUPTURE SURFACE DURING EARTHQUAKE

D. CONDITION 3 - REVALIDATE GROUND MOTION AT THE SITE

1. REQUIREMENTS

- A. REGRESSION ANALYSIS - HORIZ. & VERT. SPECTRAL VALUES FOR SITE SPECIFIC CONDITIONS
- B. SITE SPECIFIC SPECTRA (VERT. & HORIZ.)
- C. EARTHQUAKE NUMERICAL MODELLING STUDY USING MODERN TECHNIQUES
- D. SOIL-STRUCTURE INTERACTION EFFECTS

2. REASONS

- A. MORE RECENT NEAR-FIELD RECORDINGS THAT SHOULD BE TAKEN INTO ACCOUNT
- B. MODELLING STUDY ALLOWS FOR SENSITIVITY STUDY
- C. SOIL-STRUCTURE INTERACTION ANALYSIS TO EVALUATE THE EFFECT OF STRUCTURES ON THE GROUND MOTION



4

E. CONDITION 4 - ASSESS THE SIGNIFICANCE OF THE RESULTS OF  
CONDITIONS 1, 2 & 3 WITH RESPECT TO DESIGN &  
CONSTRUCTION

1. REQUIREMENTS

- A. SEISMIC PRA
- B. IF NECESSARY - DETERMINISTIC ESTIMATES  
OF SEISMIC CAPABILITY OF SELECTED STRUCTURES  
SYSTEMS, OR COMPONENTS

2. REASONS

- A. ASSESS SIGNIFICANCE OF ANY DIFFERENCES BETWEEN  
EXISTING SEISM. DESIGN BASIS AND THAT  
RESULTING FROM PREVIOUS 3 CONDITIONS
- B. LIMITED DETERMINISTIC ANALYSIS CAN BE USED TO  
BETTER DEFINE SPECIFIC SEISMIC MARGINS

5

III. PARALLEL STAFF EFFORTS

A. CONDITION 1

1. REVIEW DATA PROVIDED BY PG&E
2. SOME ANALYSIS OF INDEPENDENTLY ACQUIRED DATA
3. USGS AND DR. SLEMMONS, ADVISORS

B. CONDITION 2

1. REVIEW OF PG&E ANALYSES
2. INDEPENDENT ASSESSMENT OF SSE MAGN.
3. ADVISORS - USGS & DR. SLEMMONS

C. CONDITION 3

1. REVIEW PG&E ANALYSIS
2. ADVISORS - NATIONAL LAB'S & USGS

D. CONDITION 4

1. REVIEW PG&E'S PRA
2. ADVISORS - NAT'L LABS & USGS

E. SENIOR ADVISORY REVIEW PANEL, OR PANELS, TO REVIEW RESULTS

IV. PROGRESS REPORTING AND SCHEDULING

A. PROGRESS REPORTS

1. QUARTERLY PROGRESS REPORTS
2. SEMI-ANNUAL MEETINGS IN BETHESDA

B. SCHEDULE

1. PG&E SUBMIT PROPOSED PROGRAM - JAN 30, 1985
2. PROGRAM COMPLETED AND FINAL REPORT SUBMITTED  
3 YEARS AFTER APPROVAL BY THE NRC STAFF

### III. PARALLEL STAFF EFFORTS.

#### A. CONDITION 1

1. REVIEW DATA PROVIDED BY PG&E
2. SOME ANALYSIS OF INDEPENDENTLY ACQUIRED DATA
3. USGS AND DR. SLEMMONS, ADVISORS

#### B. CONDITION 2

1. REVIEW OF PG&E ANALYSES
2. INDEPENDENT ASSESSMENT OF SSE MAGN.
3. ADVISORS - USGS & DR. SLEMMONS

#### C. CONDITION 3

1. REVIEW PG&E ANALYSIS
2. ADVISORS - NATIONAL LAB'S & USGS

#### D. CONDITION 4

1. REVIEW PG&E'S PRA
2. ADVISORS - NAT'L LABS & USGS

#### E. SENIOR ADVISORY REVIEW PANEL, OR PANELS, TO REVIEW RESULTS

ATTACHMENT E





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D. C. 20555

May 31, 1984

MEMORANDUM FOR: ACRS Members  
FROM: R. Savio, Senior Staff Engineer  
SUBJECT: PRESENTATIONS BY MEMBERS OF THE PUBLIC AT  
THE MAY 24, 1984 JOINT MEETING ON EXTREME  
EXTERNAL PHENOMENA AND DIABLO CANYON

Mrs. B. Campbell, Ms. S. Silver, Ms. A. Rich, Ms. Evered, and Mr. S. Mendes made presentations as members of the public at the May 24, 1984 meeting of the joint subcommittees on Extreme External Phenomena and Diablo Canyon. All of these speakers opposed the operation of the Diablo Canyon Plant. The written material which was provided by these persons is attached to this letter.

Enclosure: As stated

cc w/o encl: M. Libarkin  
G. Quittschreiber

ACRS-2012

PROPOSED MINUTES OF THE  
COMBINED ACRS SUBCOMMITTEES MEETING  
EXTREME EXTERNAL PHENOMENA AND DIABLO CANYON  
MAY 24, 1984  
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Messrs. Knight, Brocoum, Israel, McMullen, Rothman, and Jackson discussed the NRC Staff's position on the proposed seismic license condition for Diablo Canyon. The Commission has voted in favor of requiring that PG&E develop and implement a state-of-the-art program to reevaluate the seismic design basis used for Diablo Canyon. The intent of requiring this seismic reevaluation is that the information which has been developed since the last ASLB hearing in

May 24, 1984

1979 be reevaluated in a systematic fashion. A program plan and implementation schedule is to be developed by PG&E by January 30, 1985 and the evaluation program is to be completed in a final report submitted to the NRC by July 1, 1988. The NRC Staff has developed a general plan for this reevaluation program (see Attachment D, May 7, 1984 letter from R. Jackson to R. Vollmer). The plan which the NRC Staff has developed has three basic elements. They are: (1) that PG&E review all relevant geologic and seismic information that has become available since the 1979 ASLB hearing and evaluate the impact of this information on the design basis ground motion; (2) that PG&E perform a seismic PRA to determine which structures, systems, or components are important in preventing core melt; and (3) that PG&E, as necessary, determine the seismic margins which are associated with these critical structures, systems, and components. The NRC Staff has proposed that PG&E take the lead in managing this seismic reevaluation and that the NRC Staff perform a independent, but more limited, assessment which would be geared toward the review of the PG&E work. The NRC effort would involve assistance from the the USGS, selected national laboratories, and Dr. Slemons. It is proposed that the ACRS be involved in the review of both the PG&E and NRC Staff efforts. The NRC Staff proceeded to outline the fundamental elements of their proposed PG&E and NRC Staff evaluation plans. These are summarized on pages 1-7 of Attachment D.

There was some discussion of the nature of the PRA to be performed in conjunction with this seismic reevaluation. Representatives of PG&E indicated that it was PG&E's intention to perform a "full scope" PRA (as opposed to a simple seismic PRA) and to use contractors to perform a state-of-the-art evaluation. It was noted that, to the extent practical, as built, rather than generic, Diablo Canyon fragilities would be used in this evaluation.

NRC WORKING GROUP ON DESIGN MARGINS COMMENTS (R. Jackson)

Mr. Jackson noted that an internal NRC working Group had been set up to guide the NRC in the establishment of a seismic design margins program. The Working Group is chaired by Messrs. Jackson and Richardson and includes representatives

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from the probabilistic risk assessment, licensing, and research areas within the NRC. A panel of experts has been assembled to aid in the formulation of an NRC program.

PG&E PRESENTATIONS (J. Hoch, H. A. Cornell, R. Kennedy, and D. Brand)  
Mr. Hoch, Dr. Kennedy, Dr. Cornell, and Mr. Brand discussed PG&E position on the proposed NRC plan for a seismic reevaluation. PG&E agrees with this plan and will formulate a detailed plan for implementing the NRC Staff's proposal by January 30, 1985. PG&E will augment this work by performing a full PRA rather than a seismic PRA and expects to work closely with the NRC Staff in this program.

SUMMARY OF THE CROUCH PAPER (J. Crouch, NEXTON, Inc.)  
Dr. Crouch summarized a recent paper by J. Crouch, S. Bachman, and J. Shay entitled, "Post-Miocene Compressional Tectonics Along the Central California Margin." This paper presents a interpretation of a number of high resolution seismic reflection profiles which were obtained offshore in the Santa Maria Basin, northern Santa Barbara Channel, and Point Conception areas. These seismic reflection profiles reveal major post-Miocene thrust faulting in the offshore central California region. These thrusts can be recognized on lines both normal and parallel to the regional structural grain. On lines normal to the grain, they commonly imbricate and curve asymptotically downward to a basal sole thrust fault. On lines parallel to the grain, they appear as a band of nearly horizontal reflectors that truncate tightly folded strata above the thrust fault.

PG&E PRESENTATION (D. Hamilton and S. Smith)  
Messrs. Hamilton and Smith presented the PG&E comments on the paper by Crouch, Bachman, and Shay. PG&E indicated that they believe that the interpretation presented in this paper by Crouch, et al, was generally consistent with the data and interpretations that were submitted and reviewed previously in connection with licensing studies for Diablo Canyon. They noted that this gives further evidence of the unlikelihood of a large earthquake being

generated on the Hosgri fault. They additionally noted that they believe that the fault dips under and passes below the plant site at distances greater than 6 kilometers.

NRC STAFF PRESENTATION (R. Jackson, R. Rothman, and S. Brocoum)

Messrs. Jackson, Rothman, and Brocoum summarized the Staff's interpretation of the paper by Crouch, et al. They noted that they have completed a preliminary review of the paper and have concluded that the work described therein is of high quality and bears serious consideration within the Diablo Canyon seismic evaluation. They believe that the paper should be reviewed within the context of other information which has become available over the past years. The Staff noted that the distance to which the fault approaches the plant foundation and the differences in the nature between the near-source motion generated by strike slip and thrust fault should be considered. It was noted that if the Hosgri is indeed a thrust fault, the observed lack of sea floor offset would indicate a longer recurrence interval for a major earthquake than if the Hosgri were a strike-slip fault. It was also noted that if the Hosgri was a thrust fault it would raise the possibility that small faults observed near the plant site would be splays of the Hosgri.

The NRC Staff discussed these estimates as to what difference in ground motion might be expected between strike slip and thrust faults. They noted that mechanisms for ground motion were not well quantified and were still the subject of some speculation. The NRC used techniques and data published by R. Campbell (1983) to obtain the following estimates for ground motion.

Magnitude	Distance (Km)	Fault Type	Average PGA (g)	84% PGA (g)
7.5	5.8	Strike Slip	0.42	0.61
7.5	5.8	Thrust	0.59	0.86
7.5	2.5	Thrust	0.74	1.08
7.0	5.8	Thrust	0.52	0.75
7.0	2.5	Thrust	0.69	1.02
6.5	5.8	Thrust	0.44	0.65
6.5	2.5	Thrust	0.64	0.93

The comparisons of vertical and horizontal ground acceleration were also made. These estimates were also taken from work by Campbell and the results appeared to be dominated by data taken on soil sites.

Magnitude	Distance	Fault Type	Average PVA (g)	84% PVA (g)	PVA PHA
7.5	5.8	Strike Slip	0.51	0.77	1.21
7.5	5.8	Thrust	0.73	1.09	1.23
	2.5	Thrust	1.1	1.6	1.5



The NRC Staff stated that they were currently negotiating a contract with the USGS for a continuation of Dr. Campbell's work.

#### PRESENTATION BY MEMBERS OF THE PUBLIC

Mr. B. Campbell, Ms. S. Silver, Ms. A. Rich, Ms. J. Evered, and Mr. S. Mendes spoke as members of the public. All of these persons opposed the operation of the Diablo Canyon Nuclear Power Plant. The adequacy of the seismic design, the adequacy of the quality control used in the construction of the plant, and the integrity of the review process were the principal issues that were raised. Material was provided by the speakers and is included as Attachment F.

#### GENERAL DISCUSSION

The Staff's proposal for a seismic reevaluation and the paper by Crouch, Bachman, Shay were discussed at some length. It was generally concluded that the paper by Crouch, et al, was high quality work and represented a significant advance in the interpretation earthquake mechanisms in central California. A number of proposals were made for specific elements that should be included in the seismic reevaluation. These were: (1) a state-of-the-art inelastic analysis of the as-built structures at Diablo Canyon; (2) a thorough review of proprietary oil-well drilling data; (3) the use of free-field and in-plant seismograph data that has been obtained at Diablo Canyon during recent earthquakes; (4) reconsideration of the nature of the on-shore faults in light of the possibility of the existence of an underlying thrust fault; (5) reexamination of the postulated connection of the Hosgri fault with the San Gregorio and San Simeon faults.

ATTACHMENT A



Agency Clearance Officer: Herman G. Fleming. (202) 357-9421

OMB Officer: Carlos Tellez. (202) 395-7340

Title: Survey of Utilization of University-Industry Cooperative Research Centers: A Practice Manual Affected Public: Individuals, State or local governments, business, nonprofit institutions, and small businesses or organizations

Number of Responses: 1,500 responses; total number of burden hours—375

Abstract: NSF prepared and distributed in 1982 a manual providing practical guidance on planning, organizing and implementing university-industry cooperative research centers. User feedback is needed from the manual's individual recipients in industry and academia on how well the manual has served their needs, and what might be done to improve it and NSF's continuing role in fostering better university-industry research collaboration.

Herman G. Fleming

OMB Clearance Officer

April 30, 1984

REGISTRATION NUMBER: 7590-01-M

BILLING CODE 7590-01-M

## NUCLEAR REGULATORY COMMISSION

### Advisory Committee on Reactor Safeguards

#### Combined Subcommittee on Diablo Canyon Nuclear Power Plant Units 1 and 2 and Extreme External Phenomena Meeting

The ACES Subcommittee on Diablo Canyon Nuclear Power Plant Units 1 and 2 and Extreme External Phenomena will hold a public meeting on May 24, 1984 at the Hollywood Inn Airport, 9601 S. Le Conte Blvd., Los Angeles, CA. The Subcommittee will review matters related to Diablo Canyon as requested in an April 11, 1984 letter from N. R. Lederman to J. Fluke. This letter requested the ACES review (1) a proposed license condition which would require Pacific Gas and Electric to do a seismic study to evaluate the Diablo Canyon design basis; (2) the appropriateness of this study was done; (3) Pacific Gas and Electric taking the lead on this project; and (4) matters related to the Hosgr fault as discussed in a paper entitled "Lost-Morone Compressional Tectonics Along the Central California Margin" by J. K. Cronin et al.

In accordance with the procedures outlined in the Federal Register on

September 28, 1983 (48 FR 44291), oral or written statements may be presented by members of the public; recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the Cognizant Federal Employee as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements.

The entire meeting will be open to public attendance.

The agenda for subject meeting shall be as follows:

Thursday, May 24, 1984—8:30 a.m. Until the Conclusion of Business

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the Pacific Gas and Electric Company, NRC Staff, their consultants, and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant Designated Federal Employee, Dr. Richard Savio (telephone 202/368-5287) between 8:15 a.m. and 5:00 p.m. EST.

Dated April 20, 1984

John C. Hoyle

Advisory Committee Member, Reactor Safeguards

REGISTRATION NUMBER: 7590-01-M

BILLING CODE 7590-01-M

[Dockets Nos. 50-321 and 50-366]

Georgia Power Company, et al. (Edwin I. Hatch Nuclear Plant, Units Nos. 1 and 2); Exemption

I

The Georgia Power Company (GPC or the licensee) and three other co-owners are the holders of Facility Operating License Nos. DPR-57 and NPF-5 which authorize operation of the Edwin I. Hatch Nuclear Plant, Units 1 and 2 (Hatch or the facilities) at steady state reactor power levels not in excess of 2430 megawatts thermal for each unit. The facilities are boiling water reactors

located at the licensee's site in Appling County, Georgia. The licensees are subject to all rules and regulations of the Nuclear Regulatory Commission (the Commission).

II

On November 19, 1980, the Commission published a revised 10 CFR 50.48 and a new Appendix R to 10 CFR 50 regarding fire protection features of nuclear power plants (45 FR 76602). The revised § 50.48 and Appendix R became effective on February 17, 1981. Section III of Appendix R contains fifteen subsections, lettered A through O, each of which specifies requirements for a particular aspect of the fire protection features at a nuclear power plant. One of these fifteen subsection, III G., is the subject of this Exemption. Specifically, subsection III G.2 requires that one train of cables and equipment necessary to achieve and maintain safe shutdown be maintained free of fire damage by one of the following means:

a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier.

b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

III

By letters dated July 1, 1982, as supplemented by letters dated April 1, May 27, November 16 and 30 and December 20, 1983, the licensee requested an exemption from the requirements of subsection III G.2 of Appendix R is 26 areas of the Edwin I. Hatch Nuclear Plant, Units 1 and 2. The acceptability of the exemption request for each of these 26 areas is addressed below. More details are contained in the Commission's related Safety Evaluation.

IV

Areas:

4160V Transformer Room—Unit 1

West 600V Switchgear Room—Unit 1

ATTACHMENT B

SUBCOMMITTEE MEETING: COMBINED EXTREME EXTERNAL PHENOMENA & DIABLO CANYONLOCATION: Holiday Inn, Los Angeles, CA

May 24, 1984

ATTENDANCE LISTPLEASE  
PRINT

NAME	AFFILIATION
D. OKRENT	CHAIRMAN EEP SUBCOMMITTEE ACRS
C.P. SIESS	CHAIRMAN DIABLO CANYON SUBCOMMITTEE ACRS
W. KERR	ACRS MEMBER
M. CARBON	" "
J. EBERSOLE	" "
H. ETHERINGTON	" " (EMERITUS)
B. PAGE	ACRS CONSULTANT
G. THOMPSON	" "
J. MAXWELL	" "
M. TRIFUNAC	" "
E. LUCCO	ACRS Staff DFE
R. SAVIO	" "
d. MCKINLEY	CAC, Inc.; consultant to PG&E
C.A. Cornell	PG&E
R.R. Fray	Diablo Canyon Project - PG&E
John B. Hoch	PG&E
D.A. BRAND	Diablo Canyon Project - PG&E
PARGENT, S. LEW	" " " - Bechtel
HOWARD FRIEND	Pacific Gas & Electric Co.
George A. Maniatis	Westinghouse
Thomas C. Esselman	Westinghouse
chi-wen Lin	Diablo Canyon Project - Bechtel
John McCall	" "
W.H. White	" "

COMBINED EXTREME EXTERNAL PHENOMENA & DIABLO CANYON  
 May 24, 1984  
 Holiday Inn, Los Angeles, CA

ATTENDANCE LIST

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 PRINT

	AFFILIATION
R. V. BETTINGER	P. G. and E.
D. H. Hamilton	E. S. A.
F. W. BRADY	P. G. & E.
John Howland	P. G. & E.
M. J. ADAM	BECHTEL
E. M. Burns	WESTINGHOUSE
F. SCAPELLATO	WESTINGHOUSE
Tudor Pierce	KPFK Radio Los Angeles
HARLAN C. SHAW	PACIFIC GAS & ELECTRIC Co.
Richard F. Locke	PACIFIC GAS & ELECTRIC Co.
Joseph Donohue	L. A. DAILY NEWS
Otto Steinhart	PACIFIC GAS & ELECTRIC Co.
Robert P. Kennedy	Structural Mechanics Assoc.
James K. Grouch	Norton Inc.
GERALD FRAZIER	Science Applications
Bruce Norton	Norton, Burke, Berry & French, P.C.
MAURICE SMERVILLE	URS BLUMF / BERKELEY
Paul D. Smith	Lawrence Livermore Nat. Lab.
RANDY BAKER	KSBY-TV, SANTA BARBARA, S.C.O.
DAVID W. OGDEN	PG & E
R. P. DAVIN	P. G. and E.
Alberta L. Rich	C. C. P. A. S.
STANLEY H. MENDES	STR'L ENG.
CRAG STEBBINS	KUEC - S. L. O.

COMBINED EXTREME EXTERNAL PHENOMENA & DIABLO CANYON

LOCATION: Holiday Inn, Los Angeles, CA

May 24, 1984

### ATTENDANCE LIST

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[illegible]

ATTACHMENT C



5/10/84

PROPOSED AGENDA FOR THE  
DIABLO CANYON AND EXTREME EXTERNAL PHENOMENA  
SUBCOMMITTEE MEETINGS ON THURSDAY, MAY 24, 1984

- |  |                       |                   |                  |
|--|-----------------------|-------------------|------------------|
| 1. Executive Session   | C. Siess<br>D. Okrent | 15 Min.           | 8:30 - 8:45 am   |
| 2. Status of licensing activities<br>on Diablo Canyon  | NRC Staff             | 15 Min.           | 8:45 - 9:00 am   |
| 3. Discussion of issues raised in<br>April 13, 1984 Letter from<br>N. Palladino to J. Ebersole |                       |                   |                  |
| a) Discussion of proposed seismic<br>reevaluation  |                       |                   |                  |
| 1) Discussion of NRC Staff<br>proposal for a seismic<br>reevaluation                           |                       | 1 Hr &<br>30 Min. | 9:00 - 10:30 am  |
| ***** BREAK *****  |                       | 15 Min.           | 10:30 - 10:45 am |
| 2) Comments from NRC Working<br>Group on Seismic Design<br>Margins                             |                       | 30 Min.           | 10:45 - 11:15 am |
| 3) PG&E Comments   |                       | 30 Min.           | 11:15 - 11:45 am |
| 4) General discussion and<br>ACRS Consultant's comments  |                       | 60 Min.           | 11:45 - 12:45 pm |
| ***** LUNCH *****  |                       | 1 Hour            | 12:45 - 1:45 pm  |
| b) Discussion of technical paper<br>by J. Crouch, et al  |                       |                   |                  |
| 1) Presentation by J. Crouch   |                       | 30 Min.           | 1:45 - 2:15 pm   |

2) Discussion of NRC Staff position as to the impact on the design basis ground motion	60 Min.	2:15 - 3:15 pm
***** BREAK *****	15 Min.	3:15 - 3:30 pm
3) USGS comments	30 Min.	3:30 - 4:00 pm
4) PG&E comments	60 Min.	4:00 - 5:00 pm
5) General discussion and comments by the ACRS Consultants and J. Crouch	60 Min.	5:00 - 6:00 pm
4. Summary, conclusions and future actions	C. Siess D. Okrent 30 Min.	6:00 - 6:30 pm
**** Adjournment ****		6:30 pm



ATTACHMENT D

1

B. CONDITION 1 - UPDATE GEOLOGY & SEISMOLOGY

1. REQUIREMENTS

- A. EVALUATE POST-1979 ASLB HEARING INFORMATION
- B. REEVALUATE SELECTED PRE-1979 DATA THAT MAY BE NEEDED TO FILL IN GAPS IN THE NEW DATA, USING NEW REPROCESSING TECHNIQUES

2. PURPOSES

- A. CONFIRM CHARACTER OF HOSGRI AT DEPTH
- B. CONFIRM OVERALL LENGTH OF HOSGRI IN LIGHT OF THRUSTING HYPOTHESIS
- C. CONFIRM RECENCY OF LAST MOVEMENT & DETERMINE RECURRENCE
- D. CONFIRM THAT THERE ARE NO SIGNIFICANT THRUST SPLAYS CLOSER TO SITE

C. CONDITION 2 - REEVALUATE THE SSE

1. REQUIREMENTS - MAGNITUDE OF SSE

- A. FAULT LENGTH
- B. RUPTURE LENGTH
- C. SLIP RATE
- D. MAXIMUM DISPLACEMENT FROM SINGLE EVENT
- E. HISTORICAL SEISMICITY
- F. OTHER APPROACHES SUCH AS AREA OF FAULT PLANE TO ESTIMATE MAGNITUDE

2. REASONS

- A. NEW DATA ON GEOLOGY AND TECTONICS OF COASTAL CALIFORNIA THAT MUST BE TAKEN INTO ACCOUNT
- B. NEW TECHNIQUES FOR ESTIMATING MAGNITUDE FROM GEOLOGICAL RECORD
  - (1) LENGTH OF FAULT
  - (2) LENGTH OF RUPTURE DURING SINGLE EARTHQUAKE
  - (3) SLIP RATE
  - (4) MAXIMUM DISPLACEMENT FROM SINGLE EARTHQUAKE
  - (5) AREA OF RUPTURE SURFACE DURING EARTHQUAKE

D. CONDITION 3 - REVALIDATE GROUND MOTION AT THE SITE

1. REQUIREMENTS

- A. REGRESSION ANALYSIS - HORIZ. & VERT. SPECTRAL VALUES FOR SITE SPECIFIC CONDITIONS
- B. SITE SPECIFIC SPECTRA (VERT. & HORIZ.)
- C. EARTHQUAKE NUMERICAL MODELLING STUDY USING MODERN TECHNIQUES
- D. SOIL-STRUCTURE INTERACTION EFFECTS

2. REASONS

- A. MORE RECENT NEAR-FIELD RECORDINGS THAT SHOULD BE TAKEN INTO ACCOUNT
- B. MODELLING STUDY ALLOWS FOR SENSITIVITY STUDY
- C. SOIL-STRUCTURE INTERACTION ANALYSIS TO EVALUATE THE EFFECT OF STRUCTURES ON THE GROUND MOTION

4

E. CONDITION 4 - ASSESS THE SIGNIFICANCE OF THE RESULTS OF  
CONDITIONS 1, 2 & 3 WITH RESPECT TO DESIGN &  
CONSTRUCTION

1. REQUIREMENTS

A. SEISMIC PRA

B. IF NECESSARY - DETERMINISTIC ESTIMATES  
OF SEISMIC CAPABILITY OF SELECTED STRUCTURES  
SYSTEMS, OR COMPONENTS

2. REASONS

A. ASSESS SIGNIFICANCE OF ANY DIFFERENCES BETWEEN  
EXISTING SEISM. DESIGN BASIS AND THAT  
RESULTING FROM PREVIOUS 3 CONDITIONS

B. LIMITED DETERMINISTIC ANALYSIS CAN BE USED TO  
BETTER DEFINE SPECIFIC SEISMIC MARGINS

5

III. PARALLEL STAFF EFFORTS

A. CONDITION 1

1. REVIEW DATA PROVIDED BY PG&E
2. SOME ANALYSIS OF INDEPENDENTLY ACQUIRED DATA
3. USGS AND DR. SLEMMONS, ADVISORS

B. CONDITION 2

1. REVIEW OF PG&E ANALYSES
2. INDEPENDENT ASSESSMENT OF SSE MAGN.
3. ADVISORS - USGS & DR. SLEMMONS

C. CONDITION 3

1. REVIEW PG&E ANALYSIS
2. ADVISORS - NATIONAL LAB'S & USGS

D. CONDITION 4

1. REVIEW PG&E'S PRA
2. ADVISORS - NAT'L LABS & USGS

E. SENIOR ADVISORY REVIEW PANEL, OR PANELS, TO REVIEW RESULTS

IV. PROGRESS REPORTING AND SCHEDULING

A. PROGRESS REPORTS

1. QUARTERLY PROGRESS REPORTS
2. SEMI-ANNUAL MEETINGS IN BETHESDA

B. SCHEDULE

1. PG&E SUBMIT PROPOSED PROGRAM - JAN 30, 1985
2. PROGRAM COMPLETED AND FINAL REPORT SUBMITTED  
3 YEARS AFTER APPROVAL BY THE NRC STAFF

III. PARALLEL STAFF EFFORTS.

A. - CONDITION 1

1. REVIEW DATA PROVIDED BY PG&E
2. SOME ANALYSIS OF INDEPENDENTLY ACQUIRED DATA
3. USGS AND DR. SLEMMONS, ADVISORS

B. CONDITION 2

1. REVIEW OF PG&E ANALYSES
2. INDEPENDENT ASSESSMENT OF SSE MAGN.
3. ADVISORS - USGS & DR. SLEMMONS

C. CONDITION 3

1. REVIEW PG&E ANALYSIS
2. ADVISORS - NATIONAL LAB'S & USGS

D. CONDITION 4

1. REVIEW PG&E'S PRA
2. ADVISORS - NAT'L LABS & USGS

E. SENIOR ADVISORY REVIEW PANEL, OR PANELS, TO REVIEW RESULTS



ATTACHMENT E



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D. C. 20555

①

May 31, 1984

MEMORANDUM FOR: ACRS Members  
FROM: *[Signature]* Savio, Senior Staff Engineer  
SUBJECT: PRESENTATIONS BY MEMBERS OF THE PUBLIC AT  
THE MAY 24, 1984 JOINT MEETING ON EXTREME  
EXTERNAL PHENOMENA AND DIABLO CANYON

Mrs. B. Campbell, Ms. S. Silver, Ms. A. Rich, Ms. Evered, and Mr. S. Mendes made presentations as members of the public at the May 24, 1984 meeting of the joint subcommittees on Extreme External Phenomena and Diablo Canyon. All of these speakers opposed the operation of the Diablo Canyon Plant. The written material which was provided by these persons is attached to this letter.

Enclosure: As stated

cc w/o encl: M. Libarkin  
G. Quittschreiber