UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	
PACIFIC GAS AND ELECTRIC COMPANY	Docket No. 50-275 Docket No. 50-323
Diablo Canyon Nuclear Power Plant Units Nos. 1 and 2	(Full Power Proceedings)

APPLICANT PACIFIC GAS AND ELECTRIC COMPANY'S
ANSWERS TO JOINT INTERVENORS'
SECOND SET OF INTERROGATORIES

INTERROGATORY NO. 29:

Explain the present Applicant position on Joint Intervenors' contention 10, regarding pressurizer heater design, and state each and every fact on which that position is based.

ANSWER TO INTERROGATORY NO. 29:

It is PGandE's position that the pressurizer heaters and associated controls are not required to be classified as "components important to safety" and therefore

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are not required to meet all safety grade design criteria. However, the pressurizer heater design associated with the capability of obtaining power from the onsite emergency power supply meets GDC 10, 14, 15, 17 and 20 of Appendix A to 10CFR50. Therefore, PGandE believes the method that has been used to connect the pressurizer heaters to the onsite emergency power supply is fully adequate.

PGandE's position is based on the fact that the design of the pressurizer heaters meets the NRC regulatory requirements including those arising from post TMI lessons learned, specifically NUREG-0737.

INTERROGATORY NO. 30:

Does the current position differ from the position of the Applicant in any prior proceedings? If so, identify the proceeding(s), explain the prior position, and explain the basis for the change in position.

ANSWER TO INTERROGATORY NO. 30:

No.

INTERROGATORY NO. 31:

Identify any officers or employees of, or consultants to, the Applicant who dissent from the present Applicant position on Joint Intervenors' contention 10. Explain the reasons for which any such person dissents.

ANSWER TO INTERROGATORY NO. 31:

None.

INTERROGATORY NO. 32:

Identify the specific sections and page numbers of the FSAR for Diablo Canyon and the NRC Staff's SER and SER Supplements for Diablo Canyon, which are relied upon in formulating the Applicant position on Joint Intervenors' contention 10.

ANSWER TO INTERROGATORY NO. 32:

SER Supplement 14, Section II.E.3.1, "Emergency Power Supply for Pressurizer Heaters," pages 2-19 through 2-21.

INTERROGATORY NO. 33:

Identify all sections and page numbers of the FSAR, SER, and SER Supplements which contain subject matter pertaining to Joint Intervenors' contention 10.

ANSWER TO INTERROGATORY NO. 33:

Applicant objects to this interrogatory. The FSAR, SER and SER Supplements consist of literally thousands of pages. Joint Intervenors are more capable than anyone else of going through those documents and making a judgmental decision as to whether any section or page contains subject matter pertaining to their own contention.

INTERROGATORY NO. 34:

The Staff has recognized that the "maintenance of natural circulation capability is important to safety (and) depends on the maintenance of pressure control . . . (which) is normally achieved through the use of pressurizer heaters." NUREG-0578, p. A-2.

(a) Do you agree?

(b) Explain why pressurizer heaters and their associated controls are not classified as "components important to safety," as discussed in GDC 17 and the Introduction to Appendix A to CFR Part 50.

ANSWER TO INTERROGATORY NO. 34:

(a) Yes.

(b) The plant design, including operational practice (training, procedures, etc.), provides alternative and reliable methods of maintaining pressure control, and therefore maintaining natural circulation, which use systems and components designed to safety grade requirements. Therefore, the pressurizer heaters and associated controls are not classified "important to safety."

Further, there are no NRC regulations or requirements that provide that the pressurizer heaters and their associated controls ought to be classified "important to safety." The NRC Staff, on page A-2, NUREG-0578, states ". . . there is a need to consider the upgrading of those pressurizer heaters and associated controls . . . to a safety grade classification. . . ." The NRC Staff further states, on page A-2 of NUREG-0578, "In the short term, designs should be upgraded to provide the operator with the capability to maintain natural circulation at hot standby through the use of pressurizer heaters when offsite power is not available." This last statement has become a requirement as identified in item II.E.3.1 of NUREG-0737, the document that identified those

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TMI-related actions that the NRC Commissioners have approved for implementation.

Pressurizer heaters and associated controls meet both the requirements of item II.E.3.1 and GDC 17 in terms of emergency on-site power supplies for the pressurizer heaters. Item II.E.3.1 does not require the pressurizer heaters or associated controls to be designed to safety grade requirements; in fact item II.E.3.1 states, "Being non-Class IE loads, the pressurizer heaters must be automatically shed from the emergency power sources. . . ."

The NRC Staff's characterization of the pressurizer heaters as non-Class IE loads, by definition, precludes them from being classed as components "important to safety."

INTERROGATORY NO. 35:

Explain in detail whether and in what manner the following design criteria would be met with respect to the pressurizer heater and its associated controls.

(a) GDC 22 (diversity)

(b) GDC 2 and 4 (seismic and environmental qualification)

(c) GDC 10 (automatic initiation)

(d) GDC 3 and 22 (separation and independence)

ANSWER TO INTERROGATORY NO. 35:

The applicable General Design Criteria (G.D.C.) of Appendix A to 10CFR Part 50, including GDC 2, 3, 4, 10, and 22 are met by the design of the pressurizer including its associated components, such as the heaters. In particular, application of these criteria is made to assure the following:

1. that the pressure boundary of the pressurizer is not jeopardized by penetrations in the pressurizer vessel for the external electrical connections to the heaters that are located inside the pressurizer, and
2. that when the heaters are loaded onto the emergency electrical power buses, the separation and independence of separate trains of this vital distribution system are not violated by the hard wired electrical connection to the heaters.

The pressurizer heaters in performing the function of maintaining pressure in the pressurizer are not required to terminate or mitigate an accident including a small break LOCA. Therefore, the above GDCs do not apply to this specific function.

INTERROGATORY NO. 36:

Specify precisely under what conditions the pressurizer heaters will be relied upon at Diablo to:

(a) regulate and/or control pressure;

(b) initiate and/or maintain natural circulation;

(c) mitigate the consequences of inadequate core cooling;

(d) stabilize the reactor in post-accident conditions;

(e) any other functions performed by the pressurizer heaters.

ANSWER TO INTERROGATORY NO. 36:

(a) The pressurizer heaters are used to establish and maintain a saturated condition with a steam bubble in the pressurizer. They assist in maintaining pressurizer pressure at a nominal value and prevent reactor trip as a result of pressure variations caused by design transients. During steady state operation, the pressurizer pressure control system normally controls only the proportional heaters to compensate for minor pressure fluctuations. The proportional heaters will continuously operate at a low level to compensate for the continuous spray rate (approximately 1 gpm) and pressurizer heat losses.

(b) Pursuant to a postulated loss of offsite power, the pressurizer heaters can be used to enhance natural circulation conditions by maintaining Reactor

Coolant System (RCS) until offsite power is restored but are not required for this function. The primary function of the heaters is to assist in maintaining RCS pressure control by compensating for pressurizer heat losses.

(c) Procedures for mitigating the consequences of an event that could result in inadequate core cooling do not require the use of the pressurizer heaters.

(d) Following design basis accidents in which the safety injection (SI) system is manually or automatically initiated, operation of the pressurizer heaters is re-established to restore saturated conditions in the pressurizer after safety injection has been terminated and normal charging and letdown has been restored. Following anticipated events in which reactor trip is manually or automatically initiated, the pressurizer heaters are used to return the RCS to normal operating conditions.

INTERROGATORY NO. 37:

Assuming inoperability of the pressurizer heaters, specify in detail each and every means, system, and/or component available at Diablo Canyon to perform the functions listed in Interrogatory No. 36 under the

conditions described in your response to that interrogatory. State each and every fact upon which you base your contention that such other means, systems, and/or components can adequately perform the functions listed.

ANSWER TO INTERROGATORY NO. 37:

(a) If the pressurizer heaters are assumed to be lost during normal operation, the normal charging and letdown system would be used to control RCS pressure until the heaters can be restored. Calculations which have been performed indicate that several hours exist prior to the time at which the heat losses via the pressurizer result in RCS hot leg saturation. If the heaters cannot be restored prior to the time of hot leg saturation, continued effective primary to secondary heat transfer can be ensured by maintaining the steam generator water level at the nominal setpoint either by use of the main feed system or the auxiliary feedwater system. The option of maintaining RCS pressure at the nominal value by using either the normal charging system (if available) or the safety grade safety injection system is also available.

(b) The method for maintaining natural circulation conditions without pressurizer heaters is similar to that discussed in 37(a). The major distinction is that the heat losses via the pressurizer

are less for the natural circulation case due to the loss of driving head for the pressurizer spray (thus no spray flow will enter the pressurizer) because the Reactor Coolant Pumps (RCPs) are not running. As a result, a much longer period of time exists prior to obtaining saturation conditions in the hot leg of the RCS. As in 37(a), the operator also has the option of maintaining RCS nominal pressure by using the normal charging system or the safety grade safety injection system.

(c) Since the pressurizer heaters are not used in operating procedures for inadequate core cooling, no alternate means are needed to mitigate the consequences of inadequate core cooling.

(d) If the pressurizer heaters are not available following an anticipated operational occurrence or a design basis accident, the operator can use either the normal charging and letdown system or the high head safety injection system to maintain or restore RCS pressure at the nominal value. Adoption of one of the two pressure control modes in conjunction with maintaining an effective heat sink in the secondary of steam generator via the auxiliary feedwater system will ensure that the system can be stabilized following a postulated accident.

INTERROGATORY NO. 38:

Specify precisely each and every way in which the pressurizer heaters and associated controls at Diablo Canyon do not meet the safety-grade design criteria set forth in Appendix A to 10 C.F.R. Part 50, and list each design criteria not complied with.

ANSWER TO INTERROGATORY NO. 38:

The answer to interrogatory 44 indicates that the pressurizer heaters and associated controls are in compliance with all applicable NRC requirements and are therefore also in compliance with all applicable safety grade design criteria of Appendix A to 10CFR50, specifically 10, 14, 15, 17 and 20 as noted in item II.E.3.1 of NUREG-0737 and GDC 2, 3, 4, 10 and 22 as listed in the answer to interrogatory 35.

INTERROGATORY NO. 39:

Describe in detail what changes, if any, have been made in the design, construction, installation, or operation of the pressurizer heaters and associated controls at Diablo Canyon since the TMI-2 accident in March 1979. With respect to any changes or alterations, specify how, if at all, they are expected or intended to enhance the reliability of the components and/or safe operation of the plant, and state each and every fact upon which your response is based.

ANSWER TO INTERROGATORY NO. 39:

As required by NUREG-0660 and 0737, the following changes have been made since March 1979:

(A) Two circuit breakers were added -- one on each ESF bus G and H to provide the capability to supply two heater groups with emergency power.

(B) Two transformer switches were added to isolate the above heater groups from either the offsite or the emergency power source.

(C) Necessary interconnecting power and control wiring were added.

(D) Wattmeters were installed indicating the power demand of the heater groups which can be connected to the ESF buses.

Operating Procedure OP A-4A:V was written to incorporate design modifications to Pressurizer Heater

Groups No. 1-2 and 1-3, and it provides for transfer of either Pressurizer Heater Group 1-2 or 1-3 from a non-vital source. This procedure addresses the loading limitation of the diesel generator to assure reliability is not degraded. Specific guidance is given for shedding selected loads, as required, from the vital bus to maintain the diesel generator within its load capability.

These changes provide additional availability and reliability of the power source supplying the pressurizer heaters, which can reduce the number of challenges to the Emergency Core Cooling System by facilitating natural circulation until offsite power is restored.

INTERROGATORY NO. 40:

Describe in detail what you consider to be the implications, if any, of the experience at TMI-2 in March 1979 with respect to the design, installation, maintenance, and/or operation of the pressurizer heaters and associated controls at Diablo Canyon. State each fact upon which your response is based.

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ANSWER TO INTERROGATORY NO. 40:

PGandE agrees with the NRC Staff that the capability to maintain pressure control in the reactor coolant system is an important safety aspect, and that this capability should be available during anticipated operational occurrences. To enhance this capability and provide additional availability and reliability to the pressurizer heater system, the capability of providing power to the pressurizer heaters from the on-site emergency bus has been provided at the DCPP. Reactor operations personnel have been provided training and procedures related to the use of the on-site emergency bus to provide power to the pressurizer heaters.

INTERROGATORY NO. 41:

With respect to the pressurizer heaters and associated controls at Diablo Canyon, specify in detail:

(a) their precise location in Units 1 and 2;

(b) the precise specifications to which they were ordered and/or designed and any differences between the design specifications on the one hand and the heaters and associated controls as installed on the other;

(c) their manufacturer;

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(d) the precise location of all seismic-related supports, hangers, snubbers, etc., which are attached to, relate to, or in any way could affect operation of the heaters, associated controls, and/or associated cables, electrical or otherwise;

(e) the precise polar position and elevation and coordinate location with respect to the center of the containment at which the cables for the pressurizer heaters cross the annulus in Diablo Canyon, Unit 1.

ANSWER TO INTERROGATORY NO. 41:

(a) The location of the pressurizer heater Class 1E equipment for Unit 1 is as follows:

(1) 480 volt vital breakers 52-1G-72 and 52-1H-74 are located in the Auxiliary Building, Area H, Elevation 115'-0", in the 480 Volt Vital Switchgear Rooms 1G and 1H, on the East wall.

(2) The control switches for the 480 volt vital breakers are located in the Auxiliary Building, Area H, Elevation 140'-0", in the control room, on control console CC1.

The location of the pressurizer heater Class 1E equipment for Unit 2 are found in locations comparable to the Unit 1 equipment.

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(b) The pressurizer heater Class 1E equipment specifications can be found in the following documents:

(1) The specifications for the 480 volt circuit breakers and enclosures can be found on Purchase Order No.'s 4R-40053 and 4R-45511 for Unit 1 and Unit 2 respectively.

(2) The Class 1E cable used for connection between the 480 volt vital breaker and bus specifications can be found on Purchase Order No. 4R-0703.

(3) The specifications for the vital control switches were purchased as part of the Nuclear Steam Supply System and can be found in specification 8700.

(4) The support structure specifications for the 480 volt vital breakers can be found on PGandE drawing 050053, detail 34. All equipment was purchased and installed in accordance with specifications.

Pressurizer heaters for Units 1 and 2 were manufactured in accordance with Westinghouse Equipment Specification 676440, Rev. 4 and Addendum 677231, Rev. 0.

(c) Presssurizer heaters were manufactured by Weigand.

(d) The pressurizer heaters Class 1E equipment seismic supports are limited to the 480 volt vital breaker enclosure supports which are located in the

Auxiliary Building, Area H, Elevation 115'-0", in the 480 Volt Vital Switchgear 1G, 1H, 2G and 2H Rooms.

(e) The pressurizer heater power cables cross the annulus of the containment for Unit 1 in three basis groups:

(1) Group 1 runs from penetration 37E via tray EJB from a polar position of 256° and an elevation of 120'-6" crossing the annulus and ending at a polar position of 333° and an elevation of 128'-0".

(2) Group 2 runs from penetration 34E via trays EJC, EJCA and EJCB from a polar position of 250° and an elevation of 120'-6" crossing the annulus and ending at a polar position of 330° and an elevation 113'-0".

(3) Group 3 runs from penetration 1E via trays DJ, DJA and DJB from a polar position of 200° at an elevation of 120'-6" crossing the annulus and ending at a polar position of 60° (DJA) and 57° (DJB) and an elevation of 113'-0".

INTERROGATORY NO. 42:

List and describe in detail all analyses and tests conducted by you, your agents, or your consultants with respect to the pressurizer heaters and associated controls. Specify:

(a) the person or entity conducting the analyses or tests;

(b) the purpose(s) of the analyses or tests;

(c) the range of test conditions or conditions assumed in the analyses;

(d) the specifications of the components tested or analyzed;

(e) the results of the tests or analyses;

(f) any other tests or analyses planned to be conducted prior to full power operation.

ANSWER TO INTERROGATORY NO. 42:

As required by the Westinghouse specification, the following tests were performed by the supplier on the pressurizer heaters:

(1) Continuity test

(2) High Potential test

(3) Radiography - full length examination in two planes ninety (90) degrees apart

(4) Megger Resistance test

INTERROGATORY NO. 43:

State whether you contend that the pressurizer heaters and associated controls at Diablo Canyon should be classified as important to safety and required to meet all applicable safety-grade design criteria, and state each and every fact upon which your response is based.

ANSWER TO INTERROGATORY NO. 43:

The response to Interrogatory 36 discussed in detail the conditions under which the pressurizer heaters are assumed to operate during normal operation, design transients and following post accident conditions. Furthermore, the response to Interrogatory 37 specified the equipment that is available to the operator to utilize in lieu of using the pressurizer heaters for RCS pressure control.

To summarize the above two responses, the pressurizer heaters provide only one of a number of methods for controlling RCS pressure. The other methods utilize safety grade components. Therefore, the pressurizer heaters need not be classified as important to safety.

INTERROGATORY NO. 44:

Describe what modifications would have to be made in the Diablo Canyon pressurizer heaters and associated controls to bring them into compliance with all applicable safety-grade design criteria. Estimate the minimum time period necessary to make those modifications, and state each and every fact upon which your estimate is based.

ANSWER TO INTERROGATORY NO. 44:

The pressurizer heaters and associated controls are presently in compliance with all applicable existing NRC rules and regulations. In addition, the design and installation of the pressurizer heaters and associated controls have been reviewed and accepted by the NRC Staff as noted on pages 2-19 through 2-21 of Supplement 14 of the Diablo Canyon SER.

Since the pressurizer heaters and associated controls are in compliance with NRC requirements, and are in compliance with safety-grade design criteria of Appendix A to 10CFR50, 10, 14, 15, 17 and 20, as required by item II.E.3.1 of NUREG-0737, no modifications are required.

INTERROGATORY NO. 45:

Specify precisely (a) which Emergency Operating Procedures for Diablo Canyon include the use of pressurizer heaters and (b) which require that the heaters be switched to the on-site power supplies.

ANSWER TO INTERROGATORY NO. 45:

(a) The following DCPP Emergency Operating Procedures include the use of pressurizer heaters:

EP OP-0, REACTOR TRIP WITH SAFETY INJECTION
EP OP-1, LOSS OF COOLANT ACCIDENT
EP OP-2, LOSS OF SECONDARY COOLANT
EP OP-3A, STEAM GENERATOR TUBE RUPTURE
EP OP-4, LOSS OF ELECTRICAL POWER
EP OP-8, CONTROL ROOM INACCESSIBILITY
EP OP-13, MALFUNCTION OF REACTOR PRESSURE CONTROL SYSTEM
EP OP-23, NATURAL CIRCULATION OF REACTOR COOLANT
EP OP-44, GASEOUS VOIDS IN THE RCS.

(b) The following DCPP Emergency Operating Procedures direct the operator to transfer a pressurizer heater group to a vital power supply for use, as required, to maintain RCS pressure.

EP OP-4, LOSS OF ELECTRICAL POWER
EP OP-8, CONTROL ROOM INACCESSIBILITY

INTERROGATORY NO. 46:

Explain the present Applicant position on Joint Intervenors contention 12, regarding valve design, and state each and every fact on which that position is based.

ANSWER TO INTERROGATORY NO. 46:

The Reactor Coolant System at Diablo Canyon Power Plant Unit 1 contains three block valves and three relief valves. All of the block valves, as well as their instruments and controls, have been classified as components important to safety and have been designed and fabricated to meet all safety-grade design criteria. In addition, two of the three relief valves and their associated circuitry have been classified as components important to safety and meet all safety-grade design criteria. The remaining relief valve, which does not meet all safety-grade design criteria, was installed to provide 100% local rejection without tripping the reactor. It provides no safety related function.

The DCPP relief valves, block valves and associated instruments and controls have been designed and fabricated to meet all applicable requirements. Furthermore, there has been a long history of successful operation of relief and block valves representative of DCPP valves under full power operation at other similar plants. Therefore, these valves have been demonstrated to be capable of functioning under required operating conditions.

Westinghouse has performed analyses to show that, even if all of the relief valves, block valves and their associated controls and instruments had failed during full power operation, core uncovery would not occur and public health and safety would not be endangered.

INTERROGATORY NO. 47:

Does the current position differ from the position of the Applicant in any prior proceedings? If so, identify the proceeding(s), explain the prior position, and explain the basis for the change in position.

ANSWER TO INTERROGATORY NO. 47:

No.

INTERROGATORY NO. 48:

Identify any officers or employees of, or consultants to, the Applicant who dissent from the present Applicant position on Joint Intervenors' contention 12. Explain the reasons for which any such person dissents.

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ANSWER TO INTERROGATORY NO. 48:

None.

INTERROGATORY NO. 49:

Identify the specific sections and page numbers of the FSAR for Diablo Canyon and the NRC Staff's SER and SER Supplements for Diablo Canyon, which are relied upon in formulating the Applicant position on Joint Intervenors' contention 12.

ANSWER TO INTERROGATORY NO. 49:

The following FSAR sections are identified:

3.1 Conformance with AEC General Design Criteria

3.2 Classification of Structures, Components and Systems

3.6 Criteria for Protection Against Dynamic Effects Associated with a Postulated Rupture of Piping

3.9 Mechanical Systems and Components

5.2 Integrity of the Reactor Coolant System Boundary

15.1 Condition I-Normal Operation and Operational Transients

The following section of SER Supplement 15 is identified:

Appendix B: Environmental Qualification of Safety-Related Electrical Equipment

INTERROGATORY NO. 50:

Identify all sections and page numbers of the FSAR, SER, and SER Supplements which contain subject matter pertaining to Joint Intervenors' contention 12.

ANSWER TO INTERROGATORY NO. 50:

Applicant objects to this interrogatory. See response to Interrogatory number 33.

INTERROGATORY NO. 51:

Does the Applicant agree that proper operation of PORVs, associated block valves and the instruments and controls for these valves is essential to mitigate the consequences of accidents? Explain your response fully.

ANSWER TO INTERROGATORY NO. 51:

The applicant agrees that proper operation of a PORV, associated block valve and the instruments and controls for the necessary valves is essential to mitigate the consequence of accidents.

The accident analyses presented in the DCPP Safety Analysis Report demonstrate that the pressurizer power operated relief valves (PORV) are not required to actuate automatically on a pressure setpoint to mitigate the

consequences of the accidents, i.e., the licensing criteria are met with or without automatic PORV opening when requested. However, postulated transients have been analyzed since TMI which require that the operator be capable of manually opening and/or closing the PORV's. For such postulated transients, the proper operation of a PORV or block valve is essential.

For the case of an inadvertently stuck open PORV, the operator has been trained in the use of an Emergency Procedure describing the operations that must be implemented to take the plant to a safe shutdown condition. Once the operator closes the associated PORV block valve, the plant can immediately be restored to normal plant conditions.

INTERROGATORY NO. 52:

Does the Applicant agree that failures of these valves, instruments and controls can cause or aggravate a LOCA? Explain your response fully.

ANSWER TO INTERROGATORY NO. 52:

The Applicant agrees that it is possible to postulate scenarios in which failures of the PORV's and their instruments and controls can result in a small break LOCA. An inadvertent opening of a pressurizer PORV results

in a breach of the RCS pressure boundary, necessitating the actuation of the Emergency Core Cooling System (ECCS) to mitigate the accident consequences. Even though the DCPP design provides the operator with the capability to open and/or close the PORV's with safety grade circuitry, the ECCS system is designed to mitigate the consequences of a postulated failure of the PORV's to close.

INTERROGATORY NO. 53:

Provide the justification for the failure to classify PORVs and associated block valves and their respective instruments and controls as "components important to safety," requiring compliance with safety-grade design criteria.

ANSWER TO INTERROGATORY NO. 53:

All block valves (and their instruments and controls) associated with the PORVs are classified as safety-related. Two of the three PORVs are classified as safety-related although they are not required to be such. Operation of only one PORV is necessary to fulfill the required safety function. To insure operation of one PORV, redundant devices are provided. Therefore, the third PORV

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need not be classified safety-related. Additional discussions have been provided in response to Interrogatories 46 and 51.

INTERROGATORY NO. 54:

Explain how the motive and control components of the PORVs and their associated block valves and the vital instruments shall be supplied by the on-site emergency power source when offsite power is not available without degrading the capacity, capability and reliability of emergency power in violation of GDC 17.

ANSWER TO INTERROGATORY NO. 54:

Normal plant instrument air supply (motive power) to each redundant valve is provided with a dedicated high pressure nitrogen backup system capable of operating the valves 140 times. This backup system is classified as safety-related and is not dependent on any external power.

Power for control components of the three PORV's is provided from three, Class 1E, 125 V DC distribution panels. The distribution panels are redundant to each other. Power for motive and control for the three associated block valves is provided from three, Class 1E, 480V AC motor control centers, each redundant to each other.

The total electrical design for these valves meets GDC 17. Therefore, the capacity, capability and reliability of the emergency power will not be degraded in the event of loss of offsite power.

INTERROGATORY NO. 55:

How have the devices through which motive and control power components for the PORVs and their associated block valves are connnected to emergency buses been qualified in accordance with safety-grade requirements?

ANSWER TO INTERROGATORY NO. 55:

The devices through which motive and control power components for the PORVs and their associated block valves are connected to emergency buses have been qualified in accordance with applicable safety-grade requirements as follows:

Control and power wiring subjected to a harsh environment have been environmentally qualified for the environment to which they could be subjected.

Circuit breaker panel boards and motor control centers have been seismically qualified.

INTERROGATORY NO. 56:

With respect to the valves, instruments, and controls cited in contention 12, list each and every General Design Criterion in Appendix A to 10 C.F.R. Part 50 which is not complied with, and describe precisely in what respects those valves, instruments, and controls do not comply.

ANSWER TO INTERROGATORY NO. 56:

With respect to the valves, DCPP complies with General Design Criteria 1, 14, 15 and 30. No other General Design Criterion applies.

The instruments and controls associated with the PORV's and block valves comply with all applicable safety grade criteria of Appendix A to 10CFR50.

INTERROGATORY NO. 57:

Describe precisely each and every function of the PORVs at Diablo Canyon, and for each such function, specify in detail the operating conditions in which the PORVs would be relied upon to perform that function.

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ANSWER TO INTERROGATORY NO. 57:

The Diablo Canyon power-operated relief valves have three functions which are not safety-related.

1. prevent reactor trip on high pressure by limiting high pressure transients beyond the capability of the pressurizer sprays.
2. minimize the operation of the spring loaded safety valves.
3. vent non-condensible gases from the pressurizer to proper operation of the pressure control system.

They have one safety-related function:

Provide cold overpressure protection on startup and shutdown to maintain pressure below the limits specified in Section 3/4.4.9 of the Technical Specifications.

The PORVs would be expected and have been qualified, but are not required, to perform all of the above functions in conditions ranging from normal operation to:

1. the Hosgri Seismic Event;
2. the loss of coolant accident as described in the FSAR, and
3. the main steam line break inside containment.

The latter two conditions would not pertain to low pressure operation.

INTERROGATORY NO. 58:

Describe precisely each and every function of the block valves at Diablo Canyon, and for each such function, specify in detail the operating conditions in which the block valves would be relied upon to perform that function.

ANSWER TO INTERROGATORY NO. 58:

The Diablo Canyon block valves have two functions:

1. isolate leaking PORV until maintenance can be performed, and
2. isolate a stuck open PORV until the plant can be shutdown.

Both of these functions are required to occur in a normal operating environment, since operating procedures direct the operator to close these valves and isolate the PORV before significant reactor coolant can escape to the containment. These valves have been qualified to function in such environment and also during and after the Hosgri Seismic Event.

INTERROGATORY NO. 59:

Specify precisely which Emergency Operating Procedures for Diablo Canyon include the use of (a) PORVs and (b) block valves.

ANSWER TO INTERROGATORY NO. 59:

The following DCPP Emergency Operating Procedures specify the use of Pressurizer PORV's and/or PORV block valves:

EP OP-0, REACTOR TRIP WITH SAFETY INJECTION

EP OP-1, LOSS OF COOLANT ACCIDENT

EP OP-2, LOSS OF SECONDARY COOLANT

EP OP-3A, STEAM GENERATOR TUBE RUPTURE

EP OP-4, LOSS OF ELECTRICAL POWER

EP OP-5, REACTOR TRIP WITHOUT SAFETY INJECTION

EP OP-13, MALFUNCTION OF REACTOR PRESSURE CONTROL SYSTEM

EP OP-22, EMERGENCY SHUTDOWN

EP OP-38, ANTICIPATED TRANSIENT WITHOUT TRIP

INTERROGATORY NO. 60:

Describe in detail what modifications would have to be made in the PORVs, block valves, instruments, and controls referred to in contention 12 to bring them into compliance with all applicable safety-grade design criteria. Estimate the minimum period necessary to make those modifications, and state each and every fact upon which your estimate is based.

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ANSWER TO INTERROGATORY NO. 60:

The necessary power operated relief valves, associated block valves, and the instruments and controls for these valves presently comply with all applicable safety-grade design criteria and therefore no modifications are required.

INTERROGATORY NO. 61:

Describe in detail the current status of the EPRI valve performance testing program. In your response, state:

(a) when the relief and safety valve testing will be completed;

(b) under what conditions (e.g., transition flow, full water flow, saturated steam, etc.) have the relief and safety valves been tested to date;

(c) whether any of the relief and safety valves tested have failed, suffered galling, or been in any way damaged during the testing, and, if so, describe in detail the circumstances of such occurrences;

(d) why the relief and safety valve testing program completion date has been delayed and when the program is now scheduled to be completed;

(e) whether an EPRI block valve testing program is planned and, if so, when it will be completed;

(f) other than the block valve failures discussed at the Diablo Canyon low power test hearing in May 1981, whether any of the block valves tested have failed, suffered galling, or been in any way damaged during the testing, and, if so, describe in detail the circumstances of such occurrences;

(g) whether PGandE has submitted to the NRC a correlation or other evidence to substantiate that the valves tested in the EPRI program demonstrate the functionability of the relief and safety valves installed at Diablo Canyon, and, if so, describe that correlation or other evidence in detail;

(h) to what extent, if at all, the control circuitry, piping, and supports associated with the Diablo Canyon relief and safety valves have been qualified, and, if so, describe precisely how they have been qualified and the results of any related tests or analyses;

(i) when the "correlation" referred to in subpart (g) of this interrogatory will be submitted to the NRC.

ANSWER TO INTERROGATORY NO. 61:

The Applicant objects to this interrogatory on the basis of relevancy. The EPRI valve performance testing program is clearly outside the scope of this contention, which concerns the classification of power operated relief valves, block valves and associated circuitry, and

compliance with design criteria. The EPRI test program was litigated in the low power hearings which resulted in a license being issued.

INTERROGATORY NO. 62:

On August 19, 1981, an emergency planning exercise for Diablo Canyon was held in San Luis Obispo. Based on your involvement in that exercise and your knowledge of the involvement of other persons, officials, agencies, or other entities, describe the exercise in detail and include in your response at least the following information:

(a) a detailed description of the exercise scenario employed, including the simulated events, time period and locations involved;

(b) the number of persons participating in the drill, including the specific company, agency, or other entity represented, if any, and the extent and nature of their involvement;

(c) (1) the number of PGandE personnel assumed or deemed to have been evacuated during the course of the exercise; (2) the number of PGandE employees actually evacuated, and (3) when such evacuation was begun and when completed;

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(d) (1) the number of non-PGandE persons (e.g., members of the public) assumed or deemed to have been evacuated and/or sheltered during the course of the exercise, (2) the number of such persons actually evacuated and/or sheltered, and (3) when such evacuation was begun and when completed;

(e) (1) the number of ambulances assumed or deemed to have been utilized during the course of the exercise and (2) the number of ambulances actually utilized;

(f) (1) the number of simulated injured persons assumed or deemed to have been transported to and treated at French Hospital during the course of the exercise and (2) the number of simulated injured persons actually transported and treated at French Hospital;

(g) (1) the number of simulated injured persons assumed or deemed to have been transported to and treated at St. Francis Hospital in San Francisco during the course of the exercise and (2) the number of simulated injured persons actually transported to and treated at St. Francis Hospital.

(h) (1) the number of residences and/or households in San Luis Obispo and Santa Barbara Counties assumed or deemed to have been contacted during the exercise, (2) the number and location of such residences and/or households actually contacted, and (3) the time period required to contact such residences and/or households;

(i) (1) the number of automobiles assumed or deemed to have utilized Highway 101 as an evacuation route during the course of the exercise and (2) the number of automobiles which actually utilized Highway 101 as an evacuation route;

(j) (1) the number of persons or automobiles assumed or deemed to have utilized Highway 1 as an evacuation route during the course of the exercise and (2) the number of persons or automobiles which actually utilized Highway 1 as an evacuation route;

(k) (1) the number of persons or automobiles assumed or deemed to have utilized Avila Road as an evacuation route during the course of the exercise and (2) the number of persons or automobiles which actually used Avila Road as an evacuation route;

(l) (1) the number of persons assumed or deemed to have been notified of a radiological emergency occurring at Diablo Canyon during the course of the exercise, (2) the number and location of persons actually notified of such emergency, and (3) the time period required to complete such notification;

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(m) (1) the number of emergency response personnel (i.e., law enforcement, fire, health, park, military, monitoring, etc.) assumed or deemed to have been mobilized and/or dispatched during the course of the exercise and (2) the number of such personnel actually mobilized and/or dispatched;

(n) (1) the protective actions assumed or deemed to have been taken within the plume exposure pathway EPZ by public officials, emergency response personnel, and members of the public during the course of the exercise and (2) the protective actions actually taken by such persons within the area specified;

(o) (1) the protective actions assumed or deemed to have been taken within the ingestion pathway EPZ by public officials, emergency response personnel, and members of the public during the course of the exercise and (2) the protective actions actually taken by such persons within the area specified;

(p) (1) the number and locations of radiological monitoring samplings assumed or deemed to have been taken during the course of the exercise and (2) the number and location of such samplings actually taken;

(q) (1) the number of persons involved in the exercise and (2) the number of persons reasonably expected to be involved in an actual radiological emergency at Diablo Canyon;

(r) (1) the number of automobile accidents or collisions, if any, assumed or deemed to have occurred on main evacuation routes during the course of the exercise and (2) the number of such accidents or collisions reasonably expected to occur in the event a full scale evacuation is ordered in response to an actual radiological emergency at Diablo Canyon;

(s) (1) the types and quantities of emergency response equipment (e.g., communications equipment, respiratory equipment, protective clothing, monitoring equipment, vehicles, helicopters, signs, placards, medical equipment, etc.) assumed or deemed to be available or to have been used during the course of the accident and (2) the types and quantities of such equipment actually available or used;

(t) (1) the number of media personnel present and inquiries from the public received during the course of the exercise and the number of such personnel likely to be received in the event of an actual radiological emergency at Diablo Canyon;

(u) the names of all local and state officials, agencies, offices, and/or other entities actually notified as part of the exercise, by telephone or otherwise, regarding the simulated emergency at Diablo Canyon; the approximate time of each such notification; the precise language of the notification message; the name of the

person who notified such officials and/or agencies; the names of each person who received the notice; and the time period required to complete notification of all such persons.

ANSWER TO INTERROGATORY NO. 62:

(a) A detailed description of the exercise scenario utilized on August 19, 1981 has been provided. Reference discovery document EPNG 59753 - Diablo Canyon Power Plant Emergency Preparedness Exercise Scenario.

(b) The following major entities to the best of our knowledge participated in the August 19, Exercise:

1) Pacific Gas and Electric Company

2) County of San Luis Obispo and supporting agencies identified in the SLO County Nuclear Power Plant Emergency Response Plan including:

a) Chairman, County Board of Supervisors

b) Emergency Services Director

c) County Health Agency/County Health Officer

d) Environmental Health Director

e) Air Pollution Control District

f) Agricultural Commissioner

g) County Public Information Officer

h) County Social Services

i) Red Cross

j) County Engineer

k) County Fire Department

l) County General Services

m) County Counsel

n) County Superintendent of Schools

o) County Sheriff

p) Area Fire and Rescue Coordinator

q) County Technical Services

3) City of Morro Bay

4) State Office of Emergency Services

5) Other State Agencies

The number of persons participating in the exercise representing these various entities varied from several to approximately 200. The extent and nature of their involvement is defined in the agencies various emergency plans and standard operating procedures. These are discoverable documents.

(c) (1) During the course of the exercise, approximately 250 PGandE personnel were assumed to have evacuated.

(2) During the exercise on August 19, 1981, 11 PGandE employees were actually evacuated.

(3) The evacuation began at 9:05 a.m. and was completed by 11:00 a.m.

(d) (1) Approximately 53,000 non-PGandE persons were assumed to have been evacuated and/or sheltered during the course of the exercise.

(2) The number of persons actually evacuated and/or sheltered during the exercise was 45. These persons were evacuated from Montada de Oro State Park.

(3) The evacuation began at 10:15 a.m. The evacuees arrived at Camp Roberts at 10:15 a.m. They were released at 2:30 p.m. and were returned to Montana de Oro at 4:00 p.m.

Note: Additional evaucation capability was demonstrated when plant security personnel turned away substantial numbers of construction workers reporting for work during the exercise.

(e) (1) During the course of the exercise, two (2) ambulances were assumed to have been utilized.

(2) One ambulance was actually utilized during the course of the exercise.

(f) (1) During the course of the exercise, one (1) person was assumed transported to French Hospital.

(2) One simulated injured person was actually transported and treated at French Hospital.

(g) (1) During the course of the exercise, no simulated injured persons was assumed transported to and treated at St. Francis Hospital.

(2) No simulated injured persons were actually transported to and treated at St. Francis Hospital.

(h) (1) None.

(2) None.

(3) Not applicable: Ref (2) above.

(i) (1) Approximately 3,100 vehicles were assumed to have utilized Highway 101 as an evauation route during the course of the exercise.

(2) Approximately 45 persons (1 Bus) actually utilized Highway 101 as an evacuation route during the exercise.

(j) (1) Approximately 1500 vehicles were assumed to have utilized Highway 1 as an evacuation route during the course of the exercise.

(2) Approximately 45 persons (1 Bus) actually utilized Highway 1 as an evacuation route during the exercise.

(k) (1) Approximately 1200 vehicles were assumed to have utilized Avila Road as an evacuation route during the course of the exercise.

(2) Approximately 4 vehicles actually used Avila Road as an evacuation route.

(l) (1) Millions of persons were assumed to have been notifed of a radiological emergency occurring at Diablo Canyon during the course of the exercise.

(2) Hundreds of thousands of people throughout the country were actually notified of such an emergency.

(3) Notification was completed over a period of a few hours.

(m) (1) The number of emergency response personnel assumed or deemed to have been mobilized and/or dispatched during the course of the exercise is unknown.

(2) The number of such personnel actually mobilized and/or dispatched is unknown.

(n) (1) Protective actions assumed or deemed to have been taken within the plume exposure LPZ by public officials, emergency response personnel, and members of the public during the course of the exercise included evacuation, recommendations to administer potassium iodide pills to place livestock on stored feed.

(2) Some evacuation measures were actually demonstrated. Recommendations were made to administer potassium iodide pills and to place livestock on stored feed.

(o) (1) Protective actions assumed or deemed to have been taken within the ingestion pathway EPZ by public officials, emergency response personnel, and members of the public during the course of the exercise included county announcements restricting reentry into the evacuated area pending completion of ingestion pathway studies.

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(2) No protective actions were actually taken by such persons within the area specified.

(p) (1) See answer to Part (2) of this question.

(2) Approximately forty-eight (48) ambient, particulate or deposition radiation samplings were actually taken (i.e., instruments deployed, calculations made, etc.) at various locations as dictated by meteorological conditions and plume dispersal, during the August 19, 1981 exercise.

The compressed timeframe required by the exercise resulted in a lesser number of radiation samplings than would result in an actual radiological accident.

(q) (1) Approximately 400-500 persons were involved in the exercise.

(2) Approximately 400-500 persons can reasonably be expected to be involved in an actual radiological emergency at Diablo Canyon.

(r) (1) One automobile accident was assumed to have occurred on main evacuation routes during the course of the exercise.

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(2) It is impossible to predict the number of such accidents reasonably expected to occur in the event of a full scale evacuation is ordered in response to an actual radiological emergency at Diablo Canyon. The scope of the evacuation area has not been defined e.g.,: LPZ, 1 Sector or multiple sector evacuations.

(s) (1) Applicant objects to this question on the basis that it is (a) impossible to answer, (b) overly broad, (c) not fully within the knowledge of the answering party and (d) not designed to lead to admissible evidence.

(t) (1) Approximately 20-30 media personnel were present during the August 19, 1981 exercise. Inquiries from the public were few in number. It is impossible to predict the number of such personnel likely to be present and inquiries from the public likely to be received in the event of an actual radiological emergency at Diablo Canyon. Such a response would be dependent upon many variables including the scope, extent, duration of the accident as well as the significance of other breaking newsworthy events.

(u) All major entitled participating in the August 19, 1981, exercise were contacted following the appropriate emergency plans and standard operating procedures. Communications logs and in some instances tape recordings of conversations were recorded to

document major events. This material has been submitted for discovery.

INTERROGATORY NO. 63:

Based on your involvement in the August 19, 1981 emergency planning exercise and your knowledge of the involvement of other persons, officials, agencies, or other entities in that exercise, provide a detailed chronology of all actions taken by the participants in connection with the exercise, and include in that chronology at least the following information:

(a) the time each action was taken;

(b) the name of the person taking the action;

(c) the office, agency, or other entity represented by that person;

(d) any problems or difficulties encountered by that person in taking the action;

(e) the location of the action, including, for example, point of origin and point of destination;

(f) any equipment (i.e., vehicles, walkie-talkie, radio, protective clothing, etc.) utilized in taking the action;

(g) the consequences resulting from the action.

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ANSWER TO INTERROGATORY NO. 63:

A detailed chronology of all actions taken by the participants in connection with the exercise in the level of detail requested is not available. The following documents have been provided for discovery and to some extent will contain particular information regarding specific emergency response actions in light of the very broad, general content of this request.

DOCUMENT NUMBER

EPPI-0090023	EPPI-0090062	EPGP-0095193
EPPI-0090024	EPPI-0090120	EPCO-0095628
EPPI-0090032	EPPI-0090142	EPPA-0095705
EPPI-0090062	EPAD-0092221	EPCE-0095764
EPPI-0090104	EPPI-0093859	EPCE-0095765
EPPI-0090120	EPPI-0093864	EPCE-0095766
EPPI-0090142	EPPI-093865	EPCE-0095767
EPNP-0083334	EPPI-0093866	EPCE-0095836
EPED-0086113	EPPI-0094072	EPSH-0096005
EPNP-0088768	EPPI-0094073	EPDC-0096115
EPPI-0090023	EPPI-0094074	EPDC-0096112
EPPI-0090024	EPPI-0094075	EPDC-0096128
EPPI-0090032	EPPI-0094078	EPDC-0096145
EPPI-0090033	EPPI-0094082	EPDC-0096161
EPPI-0090034	EPPI-0094083	EPSO-0096637
EPPI-0090045	EPPI-0094084	EPSO-0096639

INTERROGATORY NO. 64:

Explain in detail how the exercise included such things as

(a) simulated casualties;

(b) offsite fire department assistance;

(c) rescue of personnel;

(d) use of protective clothing;

(e) deployment of radiological monitoring teams; and

(f) public information and notification activities.

ANSWER TO INTERROGATORY NO. 64:

(a) The exercise scenario provided one simulated casualty, a broken leg, when a worker slipped and fell while exiting the reactor containment building. Two additional simulated casualties were provided, by the exercise scenario, when the ambulance transporting the broken leg victim was involved in an automobile accident. All three casualties simulated unconsciousness due to the ambulance accident.

(b) The California Department of Forestry (CDF) participated in a communications capability check during the exercise. All other offsite fire fighting assistance was simulated during the exercise.

(c) The broken leg victim was carried out of the reactor containment building by a first aid team using a stretcher. Ambulance accident victims were assisted by medics from a simulated second ambulance.

(d) The first aid teams that assisted injured, contaminated personnel wore anti-contamination clothing. Fire fighting teams wore standard fire fighting protective clothing and associated equipment such as respirators.

(e) The onsite radiological monitoring team was deployed, in accordance with radiological monitoring procedures, by Technical Support Center personnel. The three offsite radiological monitoring teams, including the mobile environmental monitoring laboratory, were deployed by Emergency Operations Facility personnel in accordance with their Standard Operating Procedures.

(f) Public information was disseminated through the joint PGandE/County Public Information Center/Media Center. Public notification is the responsibility of San Luis Obispo County officials and was simulated through the use of SLO County Emergency Plan implementing procedures.

INTERROGATORY NO. 65:

State how, if at all, the August 19 exercise simulated and/or tested for the complicating effects of a major earthquake on emergency response capability at Diablo Canyon.

ANSWER TO INTERROGATORY NO. 65:

The August 19, 1981, accident scenario did not incorporate an earthquake incident.

INTERROGATORY NO. 66:

State what, if any, critical emergency response equipment (i.e., vehicles, communications systems and lines, monitoring equipment, notification sirens, etc.) were assumed to fail during the course of the August 19 exercise.

ANSWER TO INTERROGATORY NO. 66:

No critical emergency response equipment was assumed to fail during the course of the August 19 exercise.

INTERROGATORY NO. 67:

State what, if any, evacuation routes

(a) for the site and

(b) for the plume exposure pathway EPZ

were assumed to be fully or partially blocked during the course of the August 19 exercise.

ANSWER TO INTERROGATORY NO. 67:

(a) None.

(b) None.

INTERROGATORY NO. 68:

In light of the information and experience gained from the August 19 exercise, what revisions, changes, or alterations, if any, will be made in the following documents prior to full power operation of Diablo Canyon:

(a) the Diablo Canyon on-site emergency plan and emergency procedures;

(b) the San Luis Obispo County emergency and evacuation plans;

(c) the State of California emergency plan;

(d) the San Luis Obispo County Sheriff's "plan" (Board Exh. 5 at Diablo Low Power Test hearing).

ANSWER TO INTERROGATORY NO. 68:

On October 15, 1981, representatives from FEMA, San Luis Obispo County, California State Office of Emergency Services, and NRC Region V met in Sacramento to review FEMA findings and recommendations identified following the August 19 exercise. A draft open item action list was established on responsibilities assigned for closure. Activities are now in progress to finalize this document, including task completion schedules. This document will be

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furnished as a supplement to PGandE's response to the request for production of documents.

Respectfully submitted,

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Attorneys for
Pacific Gas and Electric Company

By _____
Bruce Norton

DATED: October 26, 1981.

JOINT INTERVENORS' SECOND SET OF
INTERROGATORIES AND REQUEST
FOR PRODUCTION OF DOCUMENTS
TO PACIFIC GAS AND ELECTRIC COMPANY

I have assisted in preparing the answers to Interrogatories 46-50, 51, 52, 53, 60, 61. Said answers are true and correct to the best of my knowledge and belief.

G. C. Wu

Subscribed and sworn to
before me this 26th day
of October, 1981.

Theodora Cooke (SEAL)
Theodora Cooke, Notary Public
in and for the City and County
of San Francisco, State of
California

My Commission expires January 28, 1985

JOINT INTERVENORS' SECOND SET OF
INTERROGATORIES AND REQUEST
FOR PRODUCTION OF DOCUMENTS
TO PACIFIC GAS AND ELECTRIC COMPANY

I have assisted in preparing the answers to Interrogatories 29-38, 40, 42, 43, 44, 56. Said answers are true and correct to the best of my knowledge and belief.

C. O. Coffer

Subscribed and sworn to
before me this 26th day
of October, 1981.

Theodora Cooke

Theodora Cooke, Notary Public
in and for the City and County
of San Francisco, State of
California

SEAL

My Commission expires January 28, 1985

JOINT INTERVENORS' SECOND SET OF
INTERROGATORIES AND REQUEST
FOR PRODUCTION OF DOCUMENTS
TO PACIFIC GAS AND ELECTRIC COMPANY

I have assisted in preparing the answers to Interrogatories 57, 58. Said answers are true and correct to the best of my knowledge and belief.

J. J. McCracken

Subscribed and sworn to
before me this 26th day
of October, 1981.

Theodora Cooke

SEAL

Theodora Cooke, Notary Public
in and for the City and County
of San Francisco, State of
California

My Commission expires January 28, 1985

JOINT INTERVENORS' SECOND SET OF
INTERROGATORIES AND REQUEST
FOR PRODUCTION OF DOCUMENTS
TO PACIFIC GAS AND ELECTRIC COMPANY

I have assisted in preparing the answers to Interrogatories 45, 59. Said answers are true and correct to the best of my knowledge and belief.

W. H. Fujimoto

Subscribed and sworn to
before me this 26th day
of October, 1981.

Theodora Cooke, Notary Public
in and for the City and County
of San Francisco, State of
California

SEAL

My Commission expires January 28, 1985

JOINT INTERVENORS' SECOND SET OF
INTERROGATORIES AND REQUEST
FOR PRODUCTION OF DOCUMENTS
TO PACIFIC GAS AND ELECTRIC COMPANY

I have assisted in preparing the answers to Interrogatories 62, 63, 64, 65, 66, 67, 68. Said answers are true and correct to the best of my knowledge and belief.

R. J. McDevitt

Subscribed and sworn to
before me this 26thday
of October, 1981.

Theodora Cooke (SEAL)
Theodora Cooke, Notary Public
in and for the City and County
of San Francisco, State of
California

My Commission expires January 28, 1985

JOINT INTERVENORS' SECOND SET OF
INTERROGATORIES AND REQUEST
FOR PRODUCTION OF DOCUMENTS
TO PACIFIC GAS AND ELECTRIC COMPANY

I have assisted in preparing the answers to Interrogatories 62, 63, 64, 65, 66, 67, 68. Said answers are true and correct to the best of my knowledge and belief.

S. M. Skidmore

Subscribed and sworn to
before me this 26th day
of October, 1981.

Theodora Cooke (SEAL)
Theodora Cooke, Notary Public
in and for the City and County
of San Francisco, State of
California

My Commission expires January 28, 1985

JOINT INTERVENORS' SECOND SET OF
INTERROGATORIES AND REQUEST
FOR PRODUCTION OF DOCUMENTS
TO PACIFIC GAS AND ELECTRIC COMPANY

I have assisted in preparing the answers to Interrogatories 39, 41, 54, 55. Said answers are true and correct to the best of my knowledge and belief.

J. E. Herbst

J. E. Herbst

Subscribed and sworn to
before me this 26th day
of October, 1981.

Theodora Cooke (SEAL)

Theodora Cooke, Notary Public
in and for the City and County
of San Francisco, State of
California

My Commission expires January 28, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	
PACIFIC GAS AND ELECTRIC COMPANY	Docket No. 50-275 Docket No. 50-323
Diablo Canyon Nuclear Power Plant, Units 1 and 2	(Full Power Proceeding)

CERTIFICATE OF SERVICE

The foregoing document(s) of Pacific Gas and Electric Company has (have) been served today on the following by deposit in the United States mail, properly stamped and addressed:

Judge John F. Wolf
Chairman
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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Judge Glenn O. Bright
Atomic Safety and Licensing Board
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Washington, D. C. 20555

Judge Jerry R. Kline
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Philip A. Crane, Jr.
Attorney
Pacific Gas and Electric Company

Date: October 26, 1981