

March 18, 1993

Docket Nos. 50-275
and 50-323

Mr. Gregory M. Rueger
Nuclear Power Generation, B14A
Pacific Gas and Electric Company
77 Beale Street, Room 1451
P.O. Box 770000
San Francisco, California 94177

Dear Mr. Rueger:

SUBJECT: ISSUANCE OF AMENDMENTS FOR DIABLO CANYON NUCLEAR POWER PLANT,
UNIT NO. 1 (TAC NO. M79429) AND UNIT NO. 2 (TAC NO. M79430)

The Commission has issued the enclosed Amendment No. 77 to Facility Operating License No. DPR-80 and Amendment No. 76 to Facility Operating License No. DPR-82 for the Diablo Canyon Nuclear Power Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated December 21, 1990, as supplemented November 22, 1991 and October 26, 1992.

These amendments add a new TS, "Main Feedwater Regulating, Bypass and Isolation Valves," to the Diablo Canyon Power Plant TS. These amendments also increases the main feedwater regulating valve and bypass valve closure time limit from 5 to 7 seconds.

A copy of the related Safety Evaluation is enclosed. A notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by:
Sheri R. Peterson, Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 77 to DPR-80
2. Amendment No. 76 to DPR-82
3. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 18, 1993

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A copy of the related Safety Evaluation is enclosed. A notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script that reads "Sheri R. Peterson".

Sheri R. Peterson, Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No.77 to DPR-80
2. Amendment No.76 to DPR-82
3. Safety Evaluation

cc w/enclosures:
See next page

Mr. Gregory M. Rueger
Pacific Gas and Electric Company

Diablo Canyon

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PACIFIC GAS AND ELECTRIC COMPANY

DOCKET NO. 50-275

DIABLO CANYON NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 77
License No. DPR-80

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Pacific Gas & Electric Company (the licensee) dated December 21, 1990, as supplemented November 22, 1991 and October 26, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-80 is hereby amended to read as follows:

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P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 77, are hereby incorporated in the license. Pacific Gas & Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Theodore R. Quay, Director
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 18, 1993



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PACIFIC GAS AND ELECTRIC COMPANY

DOCKET NO. 50-323

DIABLO CANYON NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 76
License No. DPR-82

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Pacific Gas & Electric Company (the licensee) dated December 21, 1990, as supplemented November 22, 1991 and October 26, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-82 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 76 , are hereby incorporated in the license. Pacific Gas & Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Theodore R. Quay, Director
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 18, 1993

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 77 TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. DPR-82

DOCKET NOS. 50-275 AND 50-323

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages are also included, as appropriate.

REMOVE

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3/4 3-29
3/4 3-30
3/4 3-31

INSERT

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3/4 3-29
3/4 3-30
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ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
7. Loss of Power (4.16 kV Emergency Bus Undervoltage)		
a. First Level		
1) Diesel Start	> 0 volts with a ≤ 0.8 second time delay and > 2583 volts with a ≤ 10 second time delay	> 0 volts with a ≤ 0.8 second time delay and > 2583 volts with a ≤ 10 second time delay
2) Initiation of Load Shed	One relay > 0 volts with a ≤ 4 second time delay and > 2583 volts with a ≤ 25 second time delay with one relay > 2870 volts, instantaneous	One relay > 0 volts with a ≤ 4 second time delay and > 2583 volts with a ≤ 25 second time delay with one relay > 2870 volts, instantaneous
b. Second Level		
1) Diesel Start	> 3600 volts with a ≤ 10 second time delay	> 3600 volts with a ≤ 10 second time delay
2) Initiation of Load Shed	> 3600 volts with a ≤ 20 second time delay	> 3600 volts with a ≤ 20 second time delay
8. Engineered Safety Features Actuation System Interlocks		
a. Pressurizer Pressure, P-11	≤ 1915 psig	≤ 1925 psig
b. Low-Low T _{avg} , P-12	increasing 543°F decreasing 543°F	≤ 545.8°F ≥ 540.2°F
c. Reactor Trip, P-4	N.A.	N.A.

DIABLO CANYON - UNITS 1 & 2

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Amendment Nos. 37 & 38, 72 & 71

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
1. Manual Initiation	
a. Safety Injection (ECCS)	N.A.
1) Feedwater Isolation	N.A.
2) Reactor Trip	N.A.
3) Phase "A" Isolation	N.A.
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater	N.A.
6) Component Cooling Water	N.A.
7) Containment Fan Cooler Units	N.A.
8) Auxiliary Saltwater Pumps	N.A.
b. Phase "B" Isolation	
1) Containment Spray (Coincident with SI Signal)	N.A.
2) Containment Ventilation Isolation	N.A.
c. Phase "A" Isolation	
1) Containment Ventilation Isolation	N.A.
d. Steam Line Isolation	N.A.
2. Containment Pressure-High	
a. Safety Injection (ECCS)	$\leq 27^{(7)}/25^{(4)}$
1) Reactor Trip	≤ 2
2) Feedwater Isolation	≤ 63
3) Phase "A" Isolation	$\leq 18^{(1)}/28^{(3)}$
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater	$\leq 60^{(3)}$
6) Component Cooling Water	$\leq 38^{(1)}/48^{(3)}$
7) Containment Fan Cooler Units	$\leq 40^{(3)}$
8) Auxiliary Saltwater Pumps	$\leq 48^{(1)}/58^{(3)}$
3. Pressurizer Pressure-Low	
a. Safety Injection (ECCS)	$\leq 27^{(7)}/25^{(4)}/35^{(5)}$
1) Reactor Trip	≤ 2
2) Feedwater Isolation	≤ 63
3) Phase "A" Isolation	$\leq 18^{(1)}$
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater	$\leq 60^{(3)}$
6) Component Cooling Water	$\leq 48^{(3)}/38^{(1)}$
7) Containment Fan Cooler Units	$\leq 40^{(3)}$
8) Auxiliary Saltwater Pumps	$\leq 58^{(3)}/48^{(1)}$

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
4. Differential Pressure Between Steam Lines-High	
a. Safety Injection (ECCS)	≤ 25 ⁽⁴⁾ /35 ⁽⁵⁾
1) Reactor Trip	≤ 2
2) Feedwater Isolation	≤ 63
3) Phase "A" Isolation	≤ 18 ⁽¹⁾ /28 ⁽³⁾
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater	≤ 60 ⁽³⁾
6) Component Cooling Water	≤ 38 ⁽¹⁾ /48 ⁽³⁾
7) Containment Fan Cooler Units	≤ 40 ⁽³⁾
8) Auxiliary Saltwater Pumps	≤ 48 ⁽¹⁾ /58 ⁽³⁾
5. Steam Flow in Two Steam Lines - High Coincident with T _{avg} -Low-Low	
a. Safety Injection (ECCS)	≤ 25 ⁽⁴⁾ /35 ⁽⁵⁾
1) Reactor Trip	≤ 4
2) Feedwater Isolation	≤ 65
3) Phase "A" Isolation	≤ 20 ⁽¹⁾ /30 ⁽³⁾
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater	≤ 60 ⁽³⁾
6) Component Cooling Water	≤ 40 ⁽¹⁾ /50 ⁽³⁾
7) Containment Fan Cooler Units	≤ 40 ⁽³⁾
8) Auxiliary Saltwater Pumps	≤ 50 ⁽¹⁾ /60 ⁽³⁾
b. Steam Line Isolation	≤ 10
6. Steam Flow in Two Steam Lines-High Coincident with Steam Line Pressure-Low	
a. Safety Injection (ECCS)	≤ 25 ⁽⁴⁾ /35 ⁽⁵⁾
1) Reactor Trip	≤ 2
2) Feedwater Isolation	≤ 63
3) Phase "A" Isolation	≤ 18 ⁽¹⁾ /28 ⁽³⁾
4) Containment Ventilation Isolation	N.A.
5) Auxiliary Feedwater	≤ 60 ⁽³⁾
6) Component Cooling Water	≤ 38 ⁽¹⁾ /48 ⁽³⁾
7) Containment Fan Cooler Units	≤ 40 ⁽³⁾
8) Auxiliary Saltwater Pumps	≤ 48 ⁽¹⁾ /58 ⁽³⁾
b. Steam Line Isolation	≤ 8

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
7. Containment Pressure-High-High	
a. Containment Spray	≤ 48.5 ⁽⁶⁾
b. Phase "B" Isolation	N.A.
c. Steam Line Isolation	≤ 7
8. Steam Generator Water Level-High-High	
a. Turbine Trip	≤ 2.5
b. Feedwater Isolation	≤ 66
9. Steam Generator Water Level Low-Low	
a. Motor-Driven Auxiliary Feedwater Pumps	≤ 60 ⁽³⁾
b. Turbine-Driven Auxiliary Feedwater Pump	≤ 60
10. RCP Bus Undervoltage	
Turbine-Driven Auxiliary Feedwater Pump	≤ 60
11. Plant Vent Noble Gas Activity-High ^(a)	
Containment Ventilation Isolation	≤ 11
12. Containment Ventilation Exhaust Radiation- High ^(b)	
Containment Ventilation Isolation	≤ 11

^(a)The requirements for Plant Vent Noble Gas Activity-High are not applicable following installation of RM-44A and 44B.

^(b)The requirements for Containment Ventilation Exhaust Radiation-High are applicable following installation of RM-44A and 44B.

TABLE 3.3-5 (Continued)

TABLE NOTATIONS

- (1) Diesel generator starting delay not included because offsite power available.
- (2) Notation deleted.
- (3) Diesel generator starting and loading delays included.
- (4) Diesel generator starting delay not included because offsite power is available. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps (where applicable). Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is included.
- (5) Diesel generator starting and sequence loading delays included. Offsite power is not available. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps. Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is included.
- (6) The maximum response time of 48.5 seconds is the time from when the containment pressure exceeds the High-High Setpoint until the spray pump is started and the discharge valve travels to the fully open position assuming off-site power is not available. The time of 48.5 seconds includes the 28-second maximum delay related to ESF loading sequence. Spray riser piping fill time is not included. The 80-second maximum spray delay time does not include the time from LOCA start to "P" signal.
- (7) Diesel generator starting and sequence loading delays included. Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is not included. Response time limit includes opening of valves to establish SI flow path and attainment of discharge pressure for centrifugal charging pumps, SI, and RHR pumps (where applicable).

DIABLO CANYON - UNITS 1 & 2

3/4 3-32

Amendment Nos. 61 and 60

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALI- BRATION</u>	<u>ANALOG CHANNEL OPERA- TIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERA- TIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
1. Safety Injection, (Reactor Trip Feedwater Isolation, Start Diesel Generators, Containment Fan Cooler Units, and Component Cooling Water)								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
d. Pressurizer Pressure-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Differential Pressure Between Steam Lines-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
f. Steam Flow in Two Steam Lines-High Coincident With Either	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
1) T _{avg} -Low-Low, or	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
2) Steam Line Pressure-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
2. Containment Spray								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3

PLANT SYSTEMS

MAIN FEEDWATER REGULATING, BYPASS AND ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.7 In each feedwater line, each Main Feedwater Isolation Valve (MFIV) shall be OPERABLE or closed. Each Main Feedwater Regulating Valve (MFRV), and MFRV bypass valve shall be OPERABLE, closed, or isolated.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

With one MFIV, one MFRV, or one MFRV bypass valve inoperable either:

- a. Restore the inoperable valve to OPERABLE status within 4 hours, or
- b. Close the inoperable valve within 4 hours, or
- c. If the inoperable valve is a MFRV or MFRV bypass valve, isolate the inoperable valve with at least one closed valve within 4 hours, or
- d. Be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.7.1 Each MFRV and MFRV bypass valve shall be demonstrated OPERABLE by determining the isolation time of each valve to be less than or equal to 7 seconds (not including instrument delays) at least each COLD SHUTDOWN but not more frequently than once per 92 days.

4.7.1.7.2 Each MFIV shall be demonstrated OPERABLE by determining the isolation time of each valve to be less than or equal to 60 seconds (not including instrument delays) when tested pursuant to Specification 4.0.5.

PLANT SYSTEMS

BASES

3/4.7.1.7 MAIN FEEDWATER REGULATING, BYPASS AND ISOLATION VALVES

The OPERABILITY of the Main Feedwater Isolation Valves (MFIVs), Main Feedwater Regulating Valves (MFRVS), and MFRV bypass valves ensures that the valves will be capable of performing their intended safety function. The safety function of these valves is to rapidly close following: (1) a steam line or feedwater line rupture, thereby limiting the Reactor Coolant System cooldown and limiting the total energy release to the containment; or (2) a feedwater system malfunction, thereby limiting Reactor Coolant System cooldown.

The analysis of excessive RCS heat removal due to a feedwater system malfunction assumes that a control system malfunction or operator error causes a MFRV and associated bypass valve to open fully, resulting in a step increase in feedwater flow to one steam generator. The analysis assumes a feedwater isolation signal is generated by a high-high steam generator level. Feedwater isolation is assumed to occur as a result of the MFRV and associated bypass valve closing as a result of the feedwater isolation signal.

Rupture of a steam line is analyzed to calculate the response of the reactor core and to determine the resulting mass and energy releases. Two separate analyses are performed since conservative assumptions for the core response analysis are different than the conservative assumptions for the mass and energy release analysis. The core response analysis credits feedwater isolation as a result of the safety injection signal which results in a feedwater isolation signal. Feedwater isolation is assumed to occur as a result of closure of all MFRVs and MFRV bypass valves.

The mass and energy release analysis consists of several cases. The analysis assumes feedwater isolation occurs as a result of the safety injection signal which results in a feedwater isolation signal. Some cases are analyzed that assume a MFRV fails and feedwater isolation occurs as a result of closure of the MFIV. For cases with other single failure assumptions, feedwater isolation is assumed to occur as a result of closure of all MFRVs and MFRV bypass valves.

The core response and mass and energy releases that would result from a rupture of a main feedwater line are bounded by the analyses of the rupture of a main steam line.

PLANT SYSTEMS

BASES

3/4.7.1.7 MAIN FEEDWATER REGULATING, BYPASS AND ISOLATION VALVES

(continued)

The OPERABILITY of the MFIVs, MFRVs, and MFRV bypass valves within the closure time of the surveillance requirements is consistent with the assumptions used in the safety analyses. When these valves are closed, they are performing their safety function.

The APPLICABILITY of this specification is MODES 1, 2, and 3. The basis for this is that in MODES 1 and 2 there is significant energy and in MODE 3 there may be significant energy in the Steam Generators. With significant energy in the Steam Generators the valves are needed for isolation of the Steam Generators in the event of a secondary system pipe rupture.

The ACTION statement requires that an inoperable valve either be restored to an OPERABLE condition or closed within 4 hours. Closing the valve fulfills the safety function of feedwater isolation so the ACTION Statement can be exited. If a MFRV or a MFRV bypass valve is inoperable, another option is available to isolate the inoperable valve with at least one closed valve within 4 hours. This option is not available for the MFIVs since the MFIVs are in the Class I feedwater piping and there are no other valves, other than check valves, in the Class I piping that could be closed to isolate the Class I portion of the feedwater line.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 77 TO FACILITY OPERATING LICENSE NO. DPR-80
AND AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. DPR-82
PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2
DOCKET NOS. 50-275 AND 50-323

1.0 INTRODUCTION

By letter of December 21, 1990, as supplemented on November 22, 1991 and October 26, 1992, Pacific Gas and Electric Company (or the licensee) submitted a request for changes to the Technical Specifications (TS). The proposed amendments would add a new TS, "Main Feedwater Regulating, Bypass and Isolation Valves," to the Diablo Canyon Power Plant (DCPP) TS. These amendments also increase the main feedwater regulating valve and bypass valve closure time limit from 5 to 7 seconds.

The amendment request is intended to improve control of the DCPP Main Feedwater Systems without implementation of design or hardware changes and to provide clarification concerning the Applicability and Action for an inoperable Main Feedwater System valve.

The November 22, 1991 and October 26, 1992, letters provided clarifications on the safety analysis, and more restrictive surveillance requirements and allowed outage times for the proposed TS that did not change the action noticed in the Federal Register on March 6, 1991, and did not affect the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The proposed license amendment would add TS 3/4.7.1.7, "Main Feedwater Regulating, Bypass and Isolation Valves," and the associated TS Bases. This proposed TS requires all Main Feedwater Regulating Valves (MFRV), their associated Bypass Valves, and all Main Feedwater Isolation Valves (MFIVs) to be Operable during Modes 1, 2 and 3. This applicability is consistent with the Applicability of TS 3/4.7.1.5, "Main Steam Isolation Valves" (MSIVs). We find a definite safety functional relationship between the MSIVs and the MFIVs. These safety functions are to limit reactor coolant system cooldown and containment peak pressure. The main feedwater system valves and MSIVs would be expected to have similar requirements, therefore, we find the applicability of the proposed TS to be acceptable.

With one Main Feedwater Regulating, Bypass or Isolation Valve inoperable, the required TS action would be to either restore or close the inoperable valve within 4 hours, or if the inoperable valve is a MFRV or MFRV bypass valve, isolate the inoperable valve with at least one closed valve within 4 hours. The intended safety function is met by closing or isolating an inoperable valve. In the event that an inoperable valve is not restored to operable status or closed, the required Action would place the plant in Hot Standby within 6 hours and in Hot Shutdown within the following 6 hours. These allowed outage times are consistent with those specified for an inoperable MSIV and are acceptable.

The surveillance requirements require that the MFIV, MFRV and MFRV bypass valves be tested to verify closure times in accordance with TS 4.0.5., consistent with the requirements for the MSIVs. Thus, the operability of each valve would be demonstrated at least each cold shutdown, but not more frequently than once per 92 days which the staff finds acceptable.

The closure time limit for the MFRVs and the MFRV bypass valves would be less than or equal to 7 seconds, not including instrumentation delays, consistent with a 2 second increase. The closure time limit for the MFIVs would remain at the present limit of 60 seconds, not including instrumentation delays. Double isolation is provided with the MFRVs and MFRV bypass valves providing early isolation and the MFIVs in tandem with the feedwater pump trip providing the primary isolation function. As a result, the MFRVs and MFRV bypass valves are only relied upon for the first 60 seconds of a transient, after which the MFIVs are relied upon. The safety functions of the MFRVs and MFRV bypass valves are to rapidly close on the following transients:

1. A main steam line break, thereby limiting the reactor coolant system (RCS) cooldown and limiting the total energy release to the Containmentment.
2. An excessive heat removal due to a feedwater system malfunction, thereby terminating cooldown of the RCS.

Although the feedwater system is primarily Design Class II, the feedwater control valves (MFRVs and MFRV bypass valves) are maintained as Design Class I. Although these valves are installed in Design Class II piping, situated about 40 feet from the MFIVs, both piping and valves have been seismically evaluated to ensure continued operation to support the accident mitigation requirement of the MFRVs and MFRV bypass valves which is early isolation of the main feedwater system to prevent continued feedwater flow into the steam generators. In addition, Design Class I check valves are installed upstream of each MFIV. These valves provide the pressure boundary for operation of the auxiliary feedwater system if the MFIV were to fail open. The pressure-retaining feedwater system valves, fittings, and piping conform, as a minimum design criteria, to the ANSI code for Pressure Piping B31.1 and B31.7 where applicable. The feed lines from the MFIVs to the steam generators are covered by the ASME Boiler and Pressure Vessel Code, Section I. If the feedwater control valves fail to close, then the primary means of feedwater isolation would occur by feedwater pump trip actuated by a safety grade signal (terminates feedwater flow in about the same time frame as the MFRV closure)

and closure of the MFIV (60 second closure time). In addition, the air operators on MFRVs and MFRV bypass valves fail in the closed position upon loss of air or loss of power.

The licensee proposed an increase of 2 seconds in the MFRVs and MFRV bypass valve closure time limit. They requested the increase due to the difficulties experienced in meeting the 5 second time requirement at Diablo Canyon. The licensee performed a safety evaluation to address increasing the limit from 5 seconds to 7 seconds. As previously mentioned, the potentially affected accident analysis included feedwater system malfunction, main steam line break mass and energy release inside containment, and main steam line break core response. The licensee confirmed that the analysis met all acceptance criteria and fully supports a 7 second closure time. The staff reviewed the licensee's non-LOCA safety analysis feedwater isolation assumptions for Diablo Canyon, provided by letter dated November 22, 1991, and found them acceptable.

Based on the equivalent safety grade/Design Class I feedwater system components, the TS 4.0.5 surveillance requirements and the unique Diablo Canyon design providing a double main feedwater isolation function, the staff finds the licensee's proposed new TS and the increase of 2 seconds in the MFRVs and MFRVs bypass valve closure time limit to be acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (56 FR 9382). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such

activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. Peterson

Date: March 18, 1993