

September 19, 1991

Docket Nos. 50-275
and 50-323

Mr. J. D. Shiffer
Senior Vice President
Nuclear Power Generation
Pacific Gas and Electric Company
77 Beale Street, Room 1451
San Francisco, California 94106

Dear Mr. Shiffer:

SUBJECT: REISSUANCE OF THE SEPTEMBER 3, 1991, AMENDMENTS FOR DIABLO CANYON
NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 (TAC NOS. 79427 AND 79428)

The Commission issued Amendment Nos. 65 and 64 to Facility Operating License
Nos. DPR-80 and DPR-82 for the Diablo Canyon Nuclear Power Plant, Unit Nos. 1
and 2, respectively. The amendments changed the combined Technical
Specifications for Diablo Canyon in response to your application dated
November 16, 1989 (Reference LAR 89-15).

The purpose of this letter is to transmit these changes in the correct sequence
and include the overleaf pages where needed.

Sincerely,

Original signed by
R. B. Bevan for

9110020113 910919
PDR ADDCK 05000275
P PDR

Harry Rood, Senior Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosures:
See next page

NRC FILE CENTER COPY

DISTRIBUTION:

Docket File
MVirgilio
OGC
Wanda Jones
ACRS (10)
PDV p/f
EOP
250019

NRC & LPDRs
DFoster
DHagan
CGrimes
GPA/PA
RJones
RZimmerman

BBoger
HRood
GHill (8)
HBalukjian
OC/LFMB
Region V (4)
JDyer

OFC	:LA:PDV:DRPW	:PM:PDV:DRPW	:D:PDV:DRPW	:	:
NAME	:DFoster:pk	:HRood	:JDyer	:	:
DATE	:9/19/91	:9/19/91	:9/19/91	:	:

OFFICIAL RECORD COPY
Document Name: AMD CORR DC 79427/8



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

September 19, 1991

Docket Nos. 50-275
and 50-323

Mr. J. D. Shiffer
Senior Vice President
Nuclear Power Generation
Pacific Gas and Electric Company
77 Beale Street, Room 1451
San Francisco, California 94106

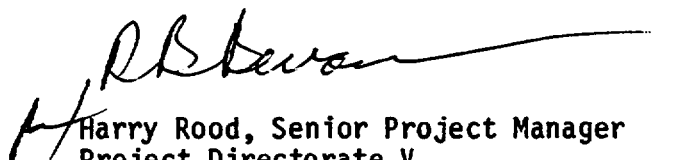
Dear Mr. Shiffer:

SUBJECT: REISSUANCE OF THE SEPTEMBER 3, 1991, AMENDMENTS FOR DIABLO CANYON
NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 (TAC NOS. 79427 AND 79428)

The Commission issued Amendment Nos. 65 and 64 to Facility Operating License Nos. DPR-80 and DPR-82 for the Diablo Canyon Nuclear Power Plant, Unit Nos. 1 and 2, respectively. The amendments changed the combined Technical Specifications for Diablo Canyon in response to your application dated November 16, 1989 (Reference LAR 89-15).

The purpose of this letter is to transmit these changes in the correct sequence and include the overleaf pages where needed.

Sincerely,


Harry Rood, Senior Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosures:
See next page

Mr. J. D. Shiffer
Pacific Gas and Electric Company

Diablo Canyon

CC:
NRC Resident Inspector
Diablo Canyon Nuclear Power Plant
c/o U.S. Nuclear Regulatory Commission
P. O. Box 369
Avila Beach, California 93424

Dr. Richard Ferguson, Energy Chair
Sierra Club California
6715 Rocky Canyon
Creston, California 93432

Ms. Sandra A. Silver
Mothers for Peace
660 Granite Creek Road
Santa Cruz, California 95065

Ms. Jacquelyn C. Wheeler
3303 Barranca Court
San Luis Obispo, California 93401

Managing Editor
The County Telegram Tribune
1321 Johnson Avenue
P. O. Box 112
San Luis Obispo, California 93406

Chairman
San Luis Obispo County Board of
Supervisors
Room 370
County Government Center
San Luis Obispo, California 93408

Richard F. Locke, Esq.
Pacific Gas & Electric Company
Post Office Box 7442
San Francisco, California 94120

Mr. John Hickman
Senior Health Physicist
Environmental Radioactive Mgmt. Unit
Environmental Management Branch
State Department of Health Services
714 P Street, Room 616
Sacramento, California 95814

Regional Administrator, Region V
U.S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Mr. Peter H. Kaufman
Deputy Attorney General
State of California
110 West A Street, Suite 700
San Diego, California 92101

Ms. Nancy Culver
192 Luneta Street
San Luis Obispo, California 93401

Michael M. Strumwasser, Esq.
Special Assistant Attorney General
State of California
Department of Justice
3580 Wilshire Boulevard, Room 800
Los Angeles, California 90010

ATTACHMENT TO LICENSE AMENDMENT NOS. 65 AND 64

FACILITY OPERATING LICENSE NOS. DPR-80 AND 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 PAGE

3/4 5-6
--
B 3/4 5-2
--
B 3/4 6-1
B 3/4 6-2

INSERT PAGE

3/4 5-6
3/4 5-6a
B 3/4 5-2
B 3/4 5-2a
B 3/4 6-1
B 3/4 6-2

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:
 - 1) For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
 - 2) Of the areas affected within containment at the completion of each containment entry when CONTAINMENT INTEGRITY is established.
- d. At least once per 18 months by a visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion;
- e. At least once per 18 months by:
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position on a Safety Injection actuation test signal.
 - 2) Verifying that each of the following pumps start automatically upon receipt of a Safety Injection actuation test signal:
 - a) Centrifugal charging pump,
 - b) Safety Injection pump, and
 - c) Residual Heat Removal pump.
- f. By verifying that each of the following pumps develops the indicated differential pressure on recirculation flow when tested pursuant to Specification 4.0.5:
 - 1) Centrifugal charging pump \geq 2400 psid,
 - 2) Safety Injection pump \geq 1455 psid, and
 - 3) Residual Heat Removal pump \geq 165 psid.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- g. By verifying the correct position of each electrical and/or mechanical position stop for the following ECCS throttle valves:

- 1) Within 4 hours following completion of each valve stroking operation or maintenance on the valve when the ECCS subsystems are required to be OPERABLE, and
- 2) At least once per 18 months.

Boron Injection
Throttle Valves

8810A
8810B
8810C
8810D

Safety Injection
Throttle Valves

8822A
8822B
8822C
8822D

- h. By performing a flow balance test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying that:

For Unit 1 Cycle 5 and Unit 2 Cycle 4:

- 1) For centrifugal charging pump lines, with a single pump running:
 - a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to 346 gpm, and
 - b) The total pump flow rate is less than or equal to 550 gpm.
- 2) For safety injection pump lines, with a single pump running:
 - a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to 463 gpm, and
 - b) The total pump flow rate is less than or equal to 650 gpm.

For Unit 1 Cycle 6 and after, and Unit 2 Cycle 5 and after:

- 1) For centrifugal charging pumps, with a single pump running:
 - a) The sum of injection line flow rates, excluding the highest flow rate, is greater than or equal to 299 gpm, and

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) The total flow rate through all four injection lines is less than or equal to 461 gpm, and
 - c) The difference between the maximum and minimum injection line flow rates is less than or equal to 15.5 gpm, and
 - d) The total pump flow rate is less than or equal to 560 gpm.
- 2) For safety injection pumps, with a single pump running:
- a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to 427 gpm, and
 - b) The total flow through all four injection lines is less than or equal to 650 gpm, and
 - c) The difference between the maximum and minimum injection line flow rates is less than or equal to 20.0 gpm, and
 - d) The total pump flow rate is less than or equal to 675 gpm.
- i. By performing a flow test, during shutdown, following completion of modifications to the RHR system that alter the system flow characteristics, and verifying that with a single pump running, and delivering to all four cold legs, a total flow rate greater than or equal to 3976 gpm.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 ACCUMULATORS

The OPERABILITY of each Reactor Coolant System (RCS) accumulator ensures that a sufficient volume of borated water will be immediately forced into the core through each of the cold legs in the event the RCS pressure falls below the pressure of the accumulators. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on accumulator volume, boron concentration and pressure ensure that the assumptions used for accumulator injection in the safety analysis are met.

The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required.

The limits for operation with an accumulator inoperable for any reason except an isolation valve closed minimizes the time exposure of the plant to a LOCA event occurring concurrent with failure of an additional accumulator which may result in unacceptable peak cladding temperatures. If a closed isolation valve cannot be immediately opened, the full capability of one accumulator is not available and prompt action is required to place the reactor in a MODE where this capability is not required.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long term core cooling capability in the recirculation mode during the accident recovery period.

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

EMERGENCY CORE COOLING SYSTEMSBASESECCS SUBSYSTEMS (Continued)

The requirement to maintain the RHR Suction Valves 8701 and 8702 in the locked closed condition in MODES 1, 2 and 3 provides assurance that a fire could not cause inadvertent opening of these valves when the RCS is pressurized to near operating pressure. These valves are not part of an ECCS subsystem.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all centrifugal charging pumps and Safety Injection pumps except the required OPERABLE charging pump to be inoperable below 323°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

For Unit 1 Cycle 5 and Unit 2 Cycle 4:

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that, at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

For Unit 1 Cycle 6 and after, and Unit 2 Cycle 5 and after:

The Surveillance Requirements provided to ensure OPERABILITY of each component ensure that, at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. The safety analyses make assumptions with respect to minimum total system resistance, minimum and maximum total injection line resistance, and minimum individual injection line resistance. These resistances in conjunction with the ranges of potential pump performance are used to calculate the minimum and maximum ECCS flows assumed in the safety analyses.

The minimum flow Surveillance Requirement ensures that the maximum injection line resistance assumptions are met. These assumptions are used to calculate minimum flows to the RCS for safety analyses which are limited by minimum ECCS flow to the RCS.

EMERGENCY CORE COOLING SYSTEMSBASESECCS SUBSYSTEMS (Continued)

The maximum flow Surveillance Requirement ensures that the minimum injection line resistance assumptions are met. These assumptions are used to calculate maximum flows to the RCS for safety analyses which are limited by maximum ECCS flow to the RCS.

The Surveillance Requirement for the maximum difference between the minimum and maximum individual injection line flows ensures that the minimum individual injection line resistance assumed for the spilling line following a LOCA is met.

The maximum total pump flow Surveillance Requirements ensure the pump runout limits of 560 gpm for the centrifugal charging pumps and 675 gpm for the safety injection pumps are met.

The safety analyses are performed assuming the miniflow recirculation lines for the ECCS subsystems associated with the centrifugal charging and safety injection pumps are open. The flow balancing test is, therefore, performed with these miniflow recirculation lines open.

Some of the flow from the centrifugal charging pumps will go to the RCP seals during ECCS operation. Therefore, the flow balance test is performed with a simulated flow from the centrifugal charging pumps to the RCP seals. The simulated flow rate is consistent with the actual RCP seal resistance and the resistance of the RCP seals assumed in the calculation of ECCS flows for the safety analyses.

3/4.5.4 BORON INJECTION SYSTEM

The Boron Injection System is only required for Units 1 and 2 Cycle 4. The OPERABILITY of the Boron Injection System as part of the ECCS ensures that sufficient negative reactivity is injected into the core to counteract any positive increase in reactivity caused by RCS cooldown. RCS cooldown can be caused by inadvertent depressurization, a loss-of-coolant accident or a steam line rupture.

The limits on injection tank minimum contained volume and boron concentration ensure that the assumptions used in the steam line break analysis are met. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

The OPERABILITY of the redundant heat tracing channels associated with the boron injection system ensure that the solubility of the boron solution will be maintained above the solubility limit of 135°F at 21,000 ppm boron.

EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.5 REFUELING WATER STORAGE TANK

The OPERABILITY of the Refueling Water Storage Tank (RWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of either a LOCA or a steamline break. The limits on RWST minimum volume and boron concentration ensure that: (1) sufficient water is available within containment to permit recirculation cooling flow to the core; (2) the reactor will remain subcritical in the cold condition (68 to 212 degrees-F) following a small break LOCA assuming complete mixing of the RWST, RCS, spray additive tank, containment spray system piping and ECCS water volumes with all control rods inserted except the most reactive control rod assembly (ARI-1); (3) the reactor will remain subcritical in the cold condition following a large break LOCA (break flow area greater than 3 ft²) assuming complete mixing of the RWST, RCS, ECCS water and other sources of water that may eventually reside in the sump post-LOCA with all control rods assumed to be out (ARO); and (4) long term subcriticality following a steamline break assuming ARI-1 and preclude fuel failure.

The maximum allowable value for the RWST boron concentration forms the basis for determining the time (post-LOCA) at which operator action is required to switch over the ECCS to hot leg recirculation in order to avoid precipitation of the soluble boron.

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

3/4.6 CONTAINMENT SYSTEMS

BASES

3/4.6.1 CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to $0.75 L_a$ or less than or equal to $0.75 L_t$, as applicable, during performance of the periodic test to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J of 10 CFR Part 50.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provide assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that: (1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the outside atmosphere of 3.5 psig, and (2) the containment peak pressure does not exceed the design pressure of 47 psig during LOCA conditions.

The maximum peak pressure expected to be obtained from a LOCA event is less than 47 psig, which is the maximum design pressure of containment. This includes the limit of 1.2 psig for initial positive containment pressure. The total pressure is less than design pressure and is consistent with the safety analyses.

CONTAINMENT SYSTEMSBASES

3/4.6.1.5 AIR TEMPERATURE

The limitations on containment average air temperature ensure that the overall containment average air temperature does not exceed the initial temperature condition assumed in the safety analysis for a LOCA.

3/4.6.1.6 CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the containment will withstand the maximum pressure in the event of a LOCA. The visual examination of the concrete, liner, and the Type A leakage test are sufficient to demonstrate this capability.

3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

Use of the containment purge lines is restricted to two of the three following lines: (1) a supply line, (2) an exhaust line of the purge system, and (3) the vacuum/pressure relief line to ensure that the SITE BOUNDARY dose guidelines of 10 CFR Part 100 would not be exceeded in the event of a loss-of-coolant accident during containment purging operations. The vacuum/pressure relief valves must be blocked to open no more than 50° because these valves have not yet been qualified to close under accident conditions.

Operation will be limited to 200 hours during a calendar year. The 200-hour limit shall not become effective until after initial criticality. The total time the Containment Purge (vent) System isolation valves may be open during MODES 1, 2, 3, and 4 in a calendar year is a function of anticipated need and operating experience.