October 30, 1989

Docket Nos. 50-275
and 50-323

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

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Dear Mr. Shiffer:

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. 74496 AND 74497)

The Commission has issued the enclosed Amendment No. 46 to Facility Operating License No. DPR-80 and Amendment No. 45 to Facility Operating License No. DPR-82 for the Diablo Canyon Power Plant (DCPP), Units 1 and 2, respectively. The amendments change the Diablo Canyon combined Technical Specifications (TS) in response to your application for license amendments dated August 15, 1989 (Reference LAR 89-09).

The amendments revise the TS to (1) allow the use of a temporary source range detector during refueling if one of the two permanently installed excore source range detectors fails, (2) clarify that certain activities, which do not significantly affect core reactivity, are not considered core alterations, (3) require containment closure during movement of the reactor vessel upper internals and head, and (4) allow latching the control rod mechanism shaft to the rod cluster control assemblies and friction testing of individual control rods with one source range detector.

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

Sincerely,

original signed by

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



Enclosures:
1. Amendment No. 46 to DPR-80
2. Amendment No. 45 to DPR-82
3. Safety Evaluation

DF01

cc w/enclosures:
See next page

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|---|---|---|---|---|
| DRSP/PD5 | DRSP/PD | DEST/BC:SRXB | OGC | DRSP/PD5 |
| JLee | HRood | | | GWrighton |
| 10/2/89 | 10/2/89 | 10/4/89 | 10/17/89 | 10/30/89 |

CP-1

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

October 30, 1989

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Nuclear Power Generation
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IV, V and Special Projects Office of
Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 46 to DPR-80
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3. Safety Evaluation

cc w/enclosures:
See next page

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

Diablo Canyon

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

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

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

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

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

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

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

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

Bruce Norton, Esq.
c/o Richard F. Locke, Esq.
Pacific Gas and Electric Company
Post Office Box 7442
San Francisco, California 94120

Dr. R. B. Ferguson
Sierra Club - Santa Lucia Chapter
Rocky Canyon Star Route
Creston, California 93432

Chairman
San Luis Obispo County Board of
Supervisors
Room 270
County Government Center
San Luis Obispo, California 93408

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

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

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-275

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.46
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 August 15, 1989 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 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:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No.46 , 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 becomes effective at the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George W. Knighton, Director
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 30, 1989

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

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT, UNIT 2

DOCKET NO. 50-323

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 45
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 August 15, 1989 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 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. 45 , 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 becomes effective at the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George W. Knighton, Director
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 30, 1989

ATTACHMENT TO LICENSE AMENDMENT NOS. 46 AND 45

FACILITY OPERATING LICENSE NOS. DPR-80 and DPR-82

DOCKET NOS. 50-275 AND 50-323

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change. Overleaf pages are also included, as appropriate.

| Remove Page | Insert Page |
|---|---|
| 1-2 | 1-2 |
| 3/4 9-2 | 3/4 9-2 |
| 3/4 9-4 | 3/4 9-4 |
| B 3/4 9-1 | B 3/4 9-1 |
| B 3/4 9-2 | B 3/4 9-2 |
| B 3/4 9-3 | B 3/4 9-3 |

## 1.0 DEFINITIONS

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications.

ACTION

1.1 ACTION shall be that part of a Specification which prescribes remedial measures required under designated conditions.

ACTUATION LOGIC TEST

1.2 An ACTUATION LOGIC TEST shall be the application of various simulated input combinations in conjunction with each possible interlock logic state and verification of the required logic output. The ACTUATION LOGIC TEST shall include a continuity check, as a minimum, of output devices.

ANALOG CHANNEL OPERATIONAL TEST

1.3 An ANALOG CHANNEL OPERATIONAL TEST shall be the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY of alarm, interlock and/or trip functions. The ANALOG CHANNEL OPERATIONAL TEST shall include adjustments, as necessary, of the alarm, interlock and/or trip setpoints such that the setpoints are within the required range and accuracy.

AXIAL FLUX DIFFERENCE

1.4 AXIAL FLUX DIFFERENCE shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector.

CHANNEL CALIBRATION

1.5 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel such that it responds within the required range and accuracy to known values of input. The CHANNEL CALIBRATION shall encompass the entire channel including the sensors and alarm, interlock and/or trip functions and may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.6 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

1.7 A CHANNEL FUNCTIONAL TEST shall be:

a. Analog channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions, or

b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.

CONTAINMENT INTEGRITY

1.8 CONTAINMENT INTEGRITY shall exist when:

a. All penetrations required to be closed during accident conditions are either:

1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except as provided in Table 3.6-1 of Specification 3.6.3.

b. All equipment hatches are closed and sealed,

c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,

d. The containment leakage rates are within the limits of Specification 3.6.1.2, and

e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.9 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

CORE ALTERATIONS

1.10 CORE ALTERATIONS shall be the movement or manipulation of any fuel, sources, or reactivity control components within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe conservative position.

## 3/4.9 REFUELING OPERATIONS

### 3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 The boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met either:

a. A $K_{eff}$ of 0.95 or less, which includes a 1% $\Delta k/k$ conservative allowance for uncertainties, or

b. A boron concentration of greater than or equal to 2000 ppm, which includes a 50 ppm conservative allowance for uncertainties.

APPLICABILITY: MODE 6*.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at greater than or equal to 10 gpm of a solution containing greater than or equal to 20,000 ppm boron or its equivalent until $K_{eff}$ is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 2000 ppm, whichever is the more restrictive.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full-length control rod in excess of 3 feet from its fully inserted position within the reactor vessel.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis at least once each 72 hours.

---

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 As a minimum, two Source Range Neutron Flux Monitors shall be OPERABLE each with continuous visual indication in the control room and one with audible indication in containment and the control room.

APPLICABILITY: MODE 6.

ACTION:

a. With one of the above required monitors inoperable or not operating, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes except for latching the control rod drive mechanism shaft to the rod cluster control assemblies and friction testing of individual control rods.

b. With both of the above required monitors inoperable or not operating, determine the boron concentration of the Reactor Coolant System at least once per 12 hours.

SURVEILLANCE REQUIREMENTS

4.9.2 Each Source Range Neutron Flux Monitor shall be demonstrated OPERABLE by performance of:

a. A CHANNEL CHECK at least once per 12 hours,

b. An ANALOG CHANNEL OPERATIONAL TEST within 8 hours prior to the initial start of CORE ALTERATIONS, and

c. An ANALOG CHANNEL OPERATIONAL TEST at least once per 7 days.

REFUELING OPERATIONS

3/4.9.3 DECAY TIME

LIMITING CONDITION FOR OPERATION

3.9.3 The reactor shall be subcritical for at least 100 hours.

APPLICABILITY: During movement of irradiated fuel in the reactor vessel.

ACTION:

With the reactor subcritical for less than 100 hours, suspend all operations involving movement of irradiated fuel in the reactor vessel.

SURVEILLANCE REQUIREMENTS

4.9.3 The reactor shall be determined to have been subcritical for at least 100 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel in the reactor vessel.

## 3/4.9.4 CONTAINMENT PENETRATIONS

### LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts,

b. A minimum of one door in each airlock is closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1) Closed by an isolation valve, blind flange, or manual valve, or

2) Be capable of being closed by an OPERABLE automatic containment ventilation isolation valve.

APPLICABILITY: During CORE ALTERATIONS, movement of irradiated fuel within containment, movement of the reactor vessel head over fuel, or movement of the upper internals over fuel.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel in containment, movement of the reactor vessel head over fuel, or movement of the upper internals over fuel.

### SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment ventilation isolation valve within 100 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS, movement of irradiated fuel in containment, movement of the reactor vessel head over fuel, or movement of the upper internals over fuel by:

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing the containment ventilation isolation valves per Specification 4.6.3.2c.

## 3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: (1) the reactor will remain subcritical during CORE ALTERATIONS, and (2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the safety analysis.

## 3/4.9.2 INSTRUMENTATION

The OPERABILITY of the Source Range Neutron Flux Monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core. The use of one portable source range detector, in conjunction with an operable, permanently installed detector, is permitted for fuel movement, provided the LCO requirements regarding having two detectors OPERABLE, each with continuous visual indication in the control room and one with audible indication in containment and the control room, are met. If used, the portable detector shall be functionally equivalent to the permanently installed source range detectors and shall be positioned such that the combination of the remaining OPERABLE permanent source range detector and the temporary detector monitors the reactivity of the core alteration.

It is acceptable to individually latch all control rods and withdraw single control rods for performance of friction tests with only one OPERABLE permanent source range detector because the core is fully loaded and therefore will be neutronically coupled to the OPERABLE source range detector. Sufficient SHUTDOWN MARGIN exists to accommodate the most reactive withdrawn rod.

## 3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the safety analyses.

## 3/4.9.4 CONTAINMENT PENETRATIONS

The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

## 3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

## 3/4.9.6 MANIPULATOR CRANE

The OPERABILITY requirements for the manipulator cranes ensure that: (1) manipulator cranes will be used for movement of control rods and fuel assemblies, (2) each crane has sufficient load capacity to lift a control rod or fuel assembly, and (3) the core internals and reactor vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

## 3/4.9.7 CRANE TRAVEL - FUEL HANDLING BUILDING

The restriction on movement of loads in excess of the nominal weight of a fuel and control assembly and associated handling tool, except the movable fuel handling building walls, over other fuel assemblies in the spent fuel pool ensures that in the event this load is dropped: (1) the activity release will be limited to that contained in a single fuel assembly, and (2) any possible distortion of the fuel in the storage racks will not result in a critical array. This assumption is consistent with the activity release assumed in the safety analyses. The movable fuel handling building walls travel on rollers over the spent fuel pool and have been designed to remain in place during postulated seismic events.

## 3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) train be in operation ensures that: (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor vessel below 140°F as required during the REFUELING MODE and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification. The requirement to maintain a 3000 gpm flowrate with the reactor subcritical less than 57 hours ensures that there is adequate decay heat removal capability. After the reactor is subcritical for 57 hours, the flowrate can be reduced to 1300 gpm and meet the decay heat removal requirements. The reduced flowrate provides additional margin to vortexing at the RHR pump suction while in partial drain operation.

The requirement to have two RHR trains OPERABLE when there is less than 23 feet of water above the reactor vessel flange ensures that a single failure of the operating RHR train will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR train, adequate time is provided to initiate emergency procedures to cool the core.

3/4.9.9 CONTAINMENT VENTILATION ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment ventilation penetrations will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and SPENT FUEL POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the safety analysis.

The minimum water level for movement of fuel assemblies (23 feet above the vessel flange) assures that sufficient water depth is maintained above fuel elements being moved to or from the vessel. With the upper internals in place, fuel assemblies and control rods cannot be removed from the vessel. Operations involving the unlatching of control rods with the vessel upper internals in place may proceed with less than 23 feet of water above the vessel flange provided that 23 feet of water (12 feet above the flange) is maintained above all irradiated fuel assemblies within the reactor vessel.

3/4.9.12 FUEL HANDLING BUILDING VENTILATION SYSTEM

The limitations on the Fuel Handling Building Ventilation System ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. Transfer of system operation into the iodine removal mode (exhaust through HEPA filters and charcoal adsorbers) is initiated automatically by either the new fuel storage or spent fuel pool area radiation monitors required by Specification 3.3.3. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

3/4.9.13 SPENT FUEL SHIPPING CASK MOVEMENT

The restriction on spent fuel shipping cask movement ensures that no fuel assemblies will be ruptured in the event of a spent fuel shipping cask accident. The dose consequences of this accident are within the dose guideline values of 10 CFR Part 100.

3/4.9.14 SPENT FUEL ASSEMBLY STORAGE

The restrictions placed on spent fuel assemblies stored in Region 2 of the spent fuel pool and the requirement for 2000 ppm boron concentration ensure that keff will not be greater than 0.95. The spent fuel storage has been designed and analyzed for a maximum enrichment of 4.5 weight percent U-235.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 46 TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 45 TO FACILITY OPERATING LICENSE NO. DPR-82

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

DOCKET NO. 50-275 AND 50-323

## 1.0 INTRODUCTION

By letter dated August 15, 1989 (Reference LAR 89-09), Pacific Gas and Electric Company (PG&E or the licensee) requested amendments to the combined Technical Specifications (TS) appended to Facility Operating License Nos. DPR-80 and DPR-82 for the Diablo Canyon Power Plant (DCPP), Unit Nos. 1 and 2, respectively. The amendments change the TS to (1) allow the use of a temporary source range detector during refueling if one of the two permanently installed excore source range detectors fails, (2) clarify that certain activities, which do not significantly affect core reactivity, are not considered core alterations, (3) require containment closure during movement of the reactor vessel upper internals and head, and (4) allow latching the control rod mechanism shaft to the rod cluster control assemblies (RCCAs or control rods) and friction testing of individual control rods with one operable source range detector.

The amended TS will apply to two situations that may occur if one of the two permanent source range detectors fails during refueling. The two situations are: (1) The amended TS will permit core reconstitution to be conducted with an inoperable permanent detector if a temporary detector is made operable. In this event, the temporary detector (three fission chambers connected in parallel) will be lowered into the core region of the vessel to act as the second source range detector. (2) The amended TS will permit latching and friction testing of the RCCAs with only one operable source range detector. In this event, the temporary detector can not be used because the upper reactor vessel internals will prevent the temporary detector from being lowered into the core region.

The staff evaluation of these changes is given below.

## 2.0 EVALUATION

The NRC staff has evaluated the proposed changes and finds them acceptable, based on the analyses and evaluations given by the licensee. A discussion of each of the specific technical specification changes made by these amendments, in the order of TS number, is presented below.

(1) TS 1.10, "Core Alterations" (Definition), is revised to restrict the definition of core alterations to cover only activities which may significantly affect core reactivity.

Specifically, the definition of "core alterations" has been revised to include only the movement or manipulation of fuel, fuel sources, and reactivity control components within the reactor vessel. The previous TS defined "core alterations" as the movement or manipulation of any component within the reactor vessel. The revised TS will permit a temporary source range detector or other small components, such as cameras, tools, etc., to be moved or manipulated within the reactor vessel without this activity being considered a "core alteration." In addition, the revised TS will permit the reactor vessel head and the upper vessel internals to be moved over the fuel without constituting a "core alteration."

In support of this change, the licensee states that insertion of small components into the reactor vessel will have no effect on reactivity since these items displace a small volume of borated water, and sufficient borated water will surround the components and provide the necessary neutron absorption to neutronically isolate them from the reactor. The licensee specifically evaluated the effect on reactivity of lowering the temporary source range detector into the vessel, and concluded that it will increase source strength slightly, but will not affect reactivity. Also, the licensee showed that the consequences of dropping one of these small components into the vessel are bounded by the fuel handling accident discussed in Section 15.4.5.1.3 of the FSAR, in which a fuel assembly is assumed to be dropped onto the core.

The licensee stated that movement (removal and/or installation) of the upper reactor vessel internals is the only activity allowed by the modified TS that will displace a large enough volume of borated water to potentially affect reactivity. However, the upper plenum and the associated structures physically separate the the upper internals from the core by a distance of at least 11 inches. In this regard, the licensee states that its contractor, Holtec International, has performed a safety evaluation to determine whether or not movement of the upper internals will have any effect on reactivity. The analysis showed that a 9-inch separation is sufficient to neutronically decouple the upper internals from the core, thereby demonstrating that movement of the upper internals will not affect reactivity.

The licensee further stated that movement of the reactor vessel head over the fuel does not displace borated water near the reactor core, and therefore does not affect reactivity.

The NRC staff has reviewed the licensee's evaluations described above and find them acceptable, based on the analysis and evaluation given by the licensee.

(2) TS 3.9.2, "Instrumentation", is revised to allow latching the control rod drive shaft mechanisms to the associated rod cluster control assemblies and friction testing of individual control rods with only one operable source range detector.

RCCA latching and friction testing is conducted with the reactor vessel upper internals in place, thereby preventing the lowering of a temporary source range detector into the region of the core. This TS change will permit the control rods to be moved one at a time with only one operable source range detector. Friction testing, which involves fully withdrawing and reinserting each rod in turn, could change core reactivity by as much as one percent for the most reactive rod. The corresponding count rate change on a source range detector is calculated to be about one to two counts per second. Because the core is geometrically coupled, one source range detector will detect significant reactivity changes associated with control rod movements.

The licensee will continue to meet the five percent shutdown margin requirements of TS 3/4.9.1 including a one percent delta-k/k allowance for uncertainties. The requirement to meet this TS is independent of the number of operable detectors. The required uncertainty allowance alone is greater than the worth of the most reactive withdrawn rod. The licensee has stated that the rods are friction tested using a load cell to lift each rod. The rods can not be latched in the fully out position, thereby precluding more than one rod being withdrawn at a time. Therefore, the use of one source range detector during latching and friction testing of control rods is adequate for reactivity monitoring and does not compromise the core shutdown margin.

Based on the above, the licensee concludes that no adverse safety consequences result from the use of one source range detector while latching control rods and performing control rod friction testing.

The NRC staff has reviewed the licensee's evaluation and finds that it provides an acceptable basis for allowing the control rod cluster assemblies to be latched and friction tested with one source range monitor.

(3) TS 3/4.9.4, "Containment Penetrations", is revised to require containment integrity during movement of the reactor head and upper internals over fuel.

This TS change is necessary to provide assurance that containment integrity is maintained during movement of the reactor vessel head and the reactor vessel upper internals over the fuel. Under the old TS, movement of the upper internals was defined as a "core alteration." Since the revised definition of "core alteration" (TS 1.10) no longer covers movement of this component, a change in TS 3/4.9.4 is necessary to maintain the same degree of protection against an offsite release of radioactivity due to dropping the upper internals onto the core. Inclusion of the reactor vessel head in TS 3/4.9.4 is an additional restriction proposed by the licensee.

The NRC staff has reviewed the licensee's evaluation of this TS change and finds it acceptable, since it maintains and, in the case of the reactor vessel head, improves the protection against an accidental release.

(4) The bases for TS 3/4.9.2, "Instrumentation," are revised to state that a temporary source range detector may be used if the temporary detector is functionally equivalent to the permanently installed source range detectors.

This section is modified to describe the circumstances under which the temporary source range detector will be used. The staff has reviewed these changes and finds them acceptable because they appropriately describe the use of the temporary source range detector.

In summary, the NRC staff has reviewed the request by the Pacific Gas and Electric Company to modify the combined Technical Specifications for Diablo Canyon Units 1 and 2 to allow the use of a temporary source range detector, and finds it acceptable, as discussed above.

## 3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes in the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and a change in surveillance requirements. At Diablo Canyon, the restricted area coincides with the site boundary. We have 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. Accordingly, these 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 these amendments.

## 4.0 CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or the health and safety of the public.

Principal Contributor: Harry Rood

Dated: October 30, 1989