October 6, 2004

Mr. Gregory M. Rueger
Senior Vice President, Generation and
Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P. O. Box 3
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENT RE: EXTENSION OF LOCAL LEAKAGE RATE TESTING INTERVALS FOR CONTAINMENT PURGE AND VENT VALVES (TAC NOS. MC1208 AND MC1209)

Dear Mr. Rueger:

The Commission has issued the enclosed Amendment No. 175 to Facility Operating License No. DPR-80 and Amendment No. 177 to Facility Operating License No. DPR-82 for the Diablo Canyon Power Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated October 22, 2003.

The amendments revise TS Section 3.6.3 to extend the local leakage rate testing intervals for the containment purge and vent valves with resilient seals from 184 days to 24 months.

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

Sincerely,

/RA/

Girija S. Shukla, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:
1. Amendment No. 175 to DPR-80
2. Amendment No. 177to DPR-82
3. Safety Evaluation

cc w/encls: See next page

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PACIFIC GAS AND ELECTRIC COMPANY

DOCKET NO. 50-275

DIABLO CANYON NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 175
License No. DPR-80

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Pacific Gas and Electric Company (the licensee) dated October 22, 2003, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 175, are hereby incorporated in the license. Pacific Gas and 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 its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 6, 2004

PACIFIC GAS AND ELECTRIC COMPANY

DOCKET NO. 50-323

DIABLO CANYON NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 177
License No. DPR-82

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Pacific Gas and Electric Company (the licensee) dated October 22, 2003, 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. 177, are hereby incorporated in the license. Pacific Gas and 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 its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 6, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 175

TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 177 TO FACILITY OPERATING LICENSE NO. DPR-82

DOCKET NOS. 50-275 AND 50-323

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE	INSERT
3.6-10	3.6-10

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 177 TO FACILITY OPERATING LICENSE NO. DPR-82

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-275 AND 50-323

1.0 INTRODUCTION

By application dated October 22, 2003, Pacific Gas and Electric Company (PG&E or licensee) requested changes to the Technical Specifications (TSs) (Appendix A to Facility Operating License Nos. DPR-80 and DPR-82) for the Diablo Canyon Power Plant (DCPP), Units 1 and 2.

The amendments would extend the interval between local leakage rate tests of the containment purge and vent valves with resilient seals (i.e., containment purge supply and exhaust, and vacuum/pressure relief valves) to 24 months, while retaining the current requirement to test the containment purge supply and exhaust valves within 92 days after opening.

The current TS Surveillance Requirement (SR) 3.6.3.7 of TS 3.6.3, "Containment Isolation Valves," states:

> Perform leakage rate testing for containment purge supply and exhaust and vacuum/pressure relief valves with resilient seals.

The frequency for this SR is:

> 184 days AND Within 92 days after opening the valve

The licensee's proposal is to change the frequency to:

> 24 months AND For containment purge supply and exhaust valves only, within 92 days after opening the valve.

2.0 REGULATORY EVALUATION

At the time that the DCPP units received their operating licenses, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR) required containment isolation valves, including containment purge and vent valves, to be subjected to local leakage rate tests at every

refueling outage, but not to exceed two-year intervals. Then and now, compliance with Appendix J provides assurance that the leakage rate of the containment, including those systems and components which penetrate the containment, does not exceed the allowable leakage rate specified in the TS and Bases. The allowable leakage rate is determined so that the leakage rate assumed in the safety analyses is not exceeded.

However, in the 1970s, experience had shown that containment purge and vent valves with resilient seals were more susceptible than other containment isolation valves to degradation caused by environmental factors (such as temperature extremes, and changes in humidity and barometric pressure) and mechanical factors (such as wear and tear, and hardening of resilient seals due to aging and exposure to radiation). This degradation not only could cause high and rapidly increasing leakage rates, but the radiological consequences of such leaks were more significant than for other valves because of the containment purge and vent valves' typically large diameters and the direct connection they provided between the containment atmosphere and the outside environment.

As part of the resolution of Generic Issue B-20 (also known as Multi-Plant Action MPA-B020), "Containment Leakage Due to Seal Deterioration," the NRC staff decided to increase the frequency of local leakage rate testing of containment purge and vent valves, beyond the frequency required by Appendix J (additional background may be found in IE Circular 77-11, "Leakage of Containment Isolation Valves with Resilient Seals," issued September 6, 1977). This would limit the time during which the valves might be inoperable due to excessive leakage, and make it more likely that a licensee would identify and correct advancing degradation before it became extreme. Although there was some variation, a typical testing arrangement was to have "passive" valves (those not opened during plant operation) tested every six months and "active" valves (those opened during plant operation) tested every three months. This is essentially the current testing arrangement at DCPP, where the test interval is 184 days if the valves have not been opened and 92 days for valves that have been opened.

In 1995, the NRC revised Appendix J to add a new, performance-based option for testing, called Option B. The NRC also published Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, which was developed as a method acceptable to the NRC staff for implementing Option B. This RG states that the Nuclear Energy Institute (NEI) guidance document NEI 94-01, Rev. 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated July 26, 1995, provides methods acceptable to the NRC staff for complying with Option B, with four exceptions which are described therein. Virtually all of the plants that have adopted Option B, including DCPP, have committed to complying with the provisions of RG 1.163.

RG 1.163 allows an extension in the Type A (integrated leakage rate) test interval to ten years based upon two consecutive successful tests. Type B tests (local leakage rate tests of containment penetrations such as electrical penetrations) may be extended up to a maximum interval of ten years based upon completion of two consecutive successful tests. Type C tests (local leakage rate tests of containment isolation valves) may have intervals extended to five years based on two consecutive successful tests.

However, despite the fact that most other containment isolation valves may have test intervals of up to 5 years, RG 1.163 does not allow for the containment purge and vent valves to go into an extended interval. This is in consideration of their past poor operating experience and the safety significance of their large diameter and direct connection between the containment atmosphere and the outside environment. Also, although RG 1.163 discusses a 30-month interval, this still does not directly affect the more frequent (3 and 6 month) tests contained in plant TS.

Subsequent to the experiences of the 1970s, the industry has made considerable strides in correcting the deficiencies of containment purge and vent valves with resilient seals. Improved seal materials, quality control, and modifications of equipment and environmental conditions have largely corrected valve deficiencies in many plants. Several plants have requested, and the NRC staff has granted, TS changes to eliminate the more-frequent testing requirements, allowing testing at what is essentially a refueling outage interval (e.g., see References 1 through 4). The NRC staff has granted these reliefs on the basis of good valve performance demonstrated by plant-specific historical leakage rate testing results. Each plant must show that their containment purge and vent valves have had consistently good performance and are thus unlikely to experience significant degradation between tests when the test interval is lengthened.

3.0 TECHNICAL EVALUATION

The licensee provided information on purge and vent valve test failures since the startup of the plant in 1985. The licensee identified a total of 4 instances of an unacceptable leakage rate on Unit 1 and 5 instances of an unacceptable leakage rate on Unit 2. A preventive maintenance program was initiated in late 1987 and implemented during the Unit 1 second refueling outage (1R2) and the Unit 2 second refueling outage (2R2) in 1988. Since then, there were only two instances of the valves failing the leak rate test.

On October 26, 1989, the Unit 1 containment purge supply line penetration was unable to be pressurized for the leak rate test. The reason was leakage at the inside containment purge valve's T-ring. The T-ring was repaired and there has been no recurrence since the repair.

On February 21, 2003, the Unit 1 containment vacuum/pressure relief line penetration leak rate test result exceeded its administrative limit. The penetration was still able to maintain test pressure. Troubleshooting revealed that the outside containment isolation valves were leak-tight but the inside containment isolation valve disc was not in full engagement with the valve seat, allowing air to leak through. The licensee determined this to have been due to the travel stop on the valve actuator being at the outer bound of its adjustment limit though it was still within the tolerance specification. The travel stop was adjusted and the post-repair leakage rate test, performed on February 23, 2003, was within its administrative limit. This failure was due to a slight misalignment of the valve actuator travel stop, and not due to a degradation of the valve seat. This failure was determined to have been an isolated case for the containment purge and vacuum/pressure relief valves. No similar failure was identified when reviewing the maintenance history of the valve. In addition to the post-repair leakage rate test performed on February 23, 2003, another leakage rate test was performed on May 16, 2003, after the penetration was used to regulate containment pressure. The leakage rate test result was again

acceptable. The success of these two leakage rate tests adds confidence to the effectiveness of the repair. The NRC staff finds that this recent instance of a failed Unit 1 leakage rate test, which is unrelated to the resilient seals, does not affect the conclusion that DCPP has experienced a very low incidence of failure on these containment isolation valves since 1988.

For Unit 2, there have been no unacceptable leakage rate test results on the purge supply and exhaust and vacuum/pressure relief penetrations since the preventive maintenance program was implemented in the 2R2 refueling outage in 1988.

Based on the test results, the NRC staff finds it acceptable to extend the maximum interval between leakage rate tests of the containment purge and vent valves to 24 months.

Based on the evaluation above, the NRC staff finds that the proposed TS changes are acceptable.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a surveillance requirement. 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 (68 FR 66139). 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.

6.0 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Pulsipher

Date: October 6, 2004