

February 13, 1998

Mr. Gregory M. Rueger, Senior Vice President
and General Manager
Pacific Gas and Electric Company
Nuclear Power Generation N9B
P. O. Box 770000
San Francisco, California 94177

SUBJECT: ISSUANCE OF AMENDMENTS FOR DIABLO CANYON NUCLEAR POWER
PLANT, UNIT NO. 1 (TAC NO. M98827) AND UNIT NO. 2 (TAC NO. M98828)

Dear Mr. Rueger:

The Commission has issued the enclosed Amendment No. 121 to Facility Operating License No. DPR-80 and Amendment No. 119 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 May 14, 1997, as supplemented by letter dated December 15, 1997.

These amendments revise the combined Technical Specifications (TS) for the Diablo Canyon Power Plant (DCPP) Unit Nos. 1 and 2 to change TS 6.9.1.8.b.5 to replace reference WCAP-10266-P-A with WCAP-12945-P for best estimate loss-of-coolant accident (LOCA) analysis. The amendment also revises TS Bases 3/4.2.2 and 3/4.2.3 to change the emergency core cooling system (ECCS) acceptance criteria limit to state that there is a high level of probability that the ECCS acceptance criteria limits are not exceeded. This is consistent with the best estimate LOCA methodology.

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,
Original Signed By
Steven D. Bloom, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-275
and 50-323

Enclosures: 1. Amendment No. 121 to DPR-80
2. Amendment No. 119 to DPR-82
3. Safety Evaluation

cc w/encls: See next page

* For previous concurrences see attached ORC

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TCollins

DOCUMENT NAME: 98827DC.AMD

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Mr. Gregory M. Rueger

- 2 -

February 13, 1998

cc:

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Diablo Canyon Independent Safety
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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. 121
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 May 14, 1997, as supplemented by letter dated December 15, 1997, 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. 121 , 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 to be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Steven D. Bloom, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: February 13, 1998



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. 119
License No. DPR-82

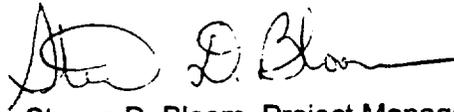
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Pacific Gas and Electric Company (the licensee) dated May 14, 1997, as supplemented by letter dated December 15, 1997, complies with the standards and requirements of the Atomic Energy Act of 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. 119 , 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 to be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Steven D. Bloom, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: February 13, 1998

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 121 TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 119 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 Amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE

B 3/4 2-1
B 3/4 2-2
6-19

INSERT

B 3/4 2-1
B 3/4 2-2
6-19

3/4.2 POWER DISTRIBUTION LIMITS

BASES

The specifications of this section provide assurance of fuel integrity during Condition I (Normal Operation) and II (Incidents of Moderate Frequency) events by: (a) maintaining the minimum DNBR in the core greater than or equal to 1.30 during normal operation and in short term transients, and (b) limiting the fission gas release, fuel pellet temperature and cladding mechanical properties to within assumed design criteria. In addition, limiting the peak linear power density during Condition I events provides assurance that the initial conditions assumed for the LOCA analyses are met and that there is a high level of probability that the ECCS acceptance criteria limit of 2200°F is not exceeded.

The definitions of certain hot channel and peaking factors as used in these specifications are as follows:

- $F_q(Z)$ Heat Flux Hot Channel Factor, is defined as the maximum local heat flux on the surface of a fuel rod at core elevation Z divided by the average fuel rod heat flux, allowing for manufacturing tolerances on fuel pellets and rods;
- $F_{\Delta H}^N$ Nuclear Enthalpy Rise Hot Channel Factor, is defined as the ratio of the integral of linear power along the rod with the highest integrated power to the average rod power; and
- $F_{xy}(Z)$ Radial Peaking Factor, is defined as the ratio of peak power density to average power density in the horizontal plane at core elevation Z.

3/4.2.1 AXIAL FLUX DIFFERENCE

The limits on AXIAL FLUX DIFFERENCE assure that the $F_q(Z)$ upper bound envelope of F_q^{limit} times the normalized axial peaking factor is not exceeded during either normal operation or in the event of xenon redistribution following power changes.

Provisions for monitoring the AFD on an automatic basis are derived from the plant process computer through the AFD Monitor Alarm. The computer determines the one minute average of each of the OPERABLE excore detector outputs and provides an alarm message immediately if the AFD for at least 2 of 4 or 2 of 3 OPERABLE excore channels are outside the AFD limits and the THERMAL POWER is greater than 50 percent of RATED THERMAL POWER.

POWER DISTRIBUTION LIMITS

BASES

3/4.2.2 and 3/4.2.3 HEAT FLUX HOT CHANNEL FACTOR, and RCS FLOWRATE AND NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR

The limits on Heat Flux Hot Channel Factor, RCS Flowrate, and Nuclear Enthalpy Rise Hot Channel Factor ensure that: (1) the design limits on peak local power density and minimum DNBR are not exceeded, and (2) in the event of a LOCA there is a high level of probability that the peak fuel clad temperature will not exceed the 2200°F ECCS acceptance criteria limit.

ADMINISTRATIVE CONTROLS

CORE OPERATING LIMITS REPORT (Continued)

3. WCAP-8385, Power Distribution Control and Load Following Procedures, September 1974 (Westinghouse Proprietary),
 4. WCAP-10054-P-A, Westinghouse Small Break LOCA ECCS Evaluation Model Using the NOTRUMP Code, August 1985. (Westinghouse Proprietary), and
 5. WCAP-12945-P, Westinghouse Code Qualification Document for Best-Estimate Loss of Coolant Analysis, June 1996 (Westinghouse Proprietary).*
- c. The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, such as SHUTDOWN MARGIN, and transient and accident analysis limits) of the safety analysis are met.
- d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided, upon issuance for each reload cycle, to the NRC Document Control Desk, with copies to the Regional Administrator and Resident Inspector.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the NRC in accordance with 10 CFR 50.4 within the time period specified for each report.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

- 6.10.1 The following records shall be retained for at least 5 years:
- a. Records and logs of unit operation covering time interval at each power level;
 - b. Records and lots of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety;
 - c. ALL REPORTABLE EVENTS;

*As evaluated in NRC Safety Evaluation dated **February 13, 1998.**

ADMINISTRATIVE CONTROLS

RECORD RETENTION (Continued)

- d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications;
- e. Records of changes made to procedures required by Specification 6.8.1;
- f. Records of radioactive shipments;
- g. Records of sealed source and fission detector leak tests and results; and
- h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the unit Operating License:

- a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report;
- b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories;
- c. Records of radiation exposure for all individuals entering radiation control areas;
- d. Records of gaseous and liquid radioactive material released to the environs;
- e. Records of transient or operational cycles for those unit components identified in Table 5.7-1;
- f. Records of reactor tests and experiments;
- g. Records of training and qualification for current members of the unit staff;
- h. Records of in-service inspections performed pursuant to these Technical Specifications;
- i. Records of Quality Assurance activities required by the QA Manual;
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;
- k. Records of meetings of the PSRC and NSOC;



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 121 TO FACILITY OPERATING LICENSE NO. DPR-80
AND AMENDMENT NO. 119 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 application dated May 14, 1997, as supplemented by letter dated December 15, 1997, Pacific Gas and Electric Company (or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License Nos. DPR-80 and DPR-82) for the Diablo Canyon Nuclear Power Plant, Units 1 and 2. The proposed changes revise the combined Technical Specifications (TS) for the Diablo Canyon Power Plant (DCPP) Unit Nos. 1 and 2 to revise TS 6.9.1.8.b.5 to replace reference WCAP-10266-P-A with WCAP-12945-P for best estimate loss of coolant accident (LOCA) analysis. The amendment would also revise TS Bases 3/4.2.2 and 3/4.2.3 to change the emergency core cooling system (ECCS) acceptance criteria limit to state that there is a high level of probability that the ECCS acceptance criteria limits are not exceeded. This is consistent with the best estimate LOCA methodology.

Pacific Gas and Electric Company (PG&E) requested approval to reference the Westinghouse (W) generic best estimate (BE) large break (LB) loss-of-coolant accident (LOCA) analysis evaluation model (EM), described in WCAP-12945, June 1996, (approved on June 28, 1996) in licensing documentation for Diablo Canyon Units 1 and 2 (Diablo Canyon), and apply that methodology to the Diablo Canyon licensing analyses. WCAP-12945 was originally submitted in September 1992 and underwent several model revisions prior to its approval. WCAP-12945, June 1996, as approved, described a model revision designated as MOD 7A, Revision 1.

The December 15, 1997, supplemental letter provided additional clarifying information and did not change the initial no significant hazards consideration determination published in the Federal Register on July 30, 1997 (62 FR 40855).

2.0 EVALUATION

In its review, the NRC considered the acceptability of the W BE LBLOCA EM described in WCAP-12945, June 1996, for reference in Diablo Canyon licensing documentation and use in Diablo Canyon licensing LBLOCA analyses.

PG&E requested approval to reference the W BE LBLOCA EM described in WCAP-12945, June 1996, in licensing documentation for its Diablo Canyon plants. In its safety evaluation report of June 28, 1996, the NRC concluded that this methodology meets the requirements of 10 CFR 50.46, and the NRC found that W BE LBLOCA EM as described in WCAP-12945, June 1996, is acceptable for use in 3 and 4 loop Westinghouse design licensing applications, including reference in plant technical specifications and core operating limits reports (COLRs).

Diablo Canyon Units 1 and 2 are of 4 loop Westinghouse design with no significant differences from the designs for which the methodology was approved. Therefore, the staff finds that the W BE LBLOCA EM described in WCAP-12945, June 1996, is acceptable for use in Diablo Canyon licensing applications, including reference in the Diablo Canyon Technical Specification 6.9.1.8.b.5. Inclusion of this methodology in the TS will provide assurance that values for cycle-specific parameters are determined such that all applicable ECCS limits of the safety analysis are met. From its review, the staff concludes that W BE LBLOCA EM, described in WCAP-12945, June 1996, is acceptable for use in Diablo Canyon, Units 1 and 2 licensing applications, including reference in the Diablo Canyon technical specifications and COLR, as approved in the staff evaluation published June 28, 1996 (letter from R. C. Jones [U.S. NRC] to N. J. Liparulo [W], "Acceptance for Referencing of the Topical Report WCAP-12945(P) 'Westinghouse Code Qualification Document for Best Estimate Loss of Coolant Analysis'."

The scope of the review documented in this safety evaluation is limited to the use of W BE LBLOCA EM described in WCAP-12945, June 1996, for analyses of LBLOCA scenarios from the time of event initiation to the time of stable core quench. Other uses of this methodology, such as long term (post-quench) cooling (e.g., during ECCS switchover) analyses, are beyond the scope of this evaluation. Use of the EM for these and other applications outside the scope of this report must be separately reviewed.

Diablo Canyon in their submittal also proposed revising the Bases for the ECCS acceptance criteria limit to state that there is a high probability that the ECCS acceptance criteria limits are not exceeded. This is consistent with the wording in 10 CFR 50.46 and is therefore acceptable to the NRC.

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. 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

(62 FR 40855). The change also modifies a recordkeeping or reporting requirement. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (c)(10). 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: F. Orr
S. Bloom

Date: February 13, 1998