

April 17, 2007

Mr. John S. Keenan
Senior Vice President and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 770000
San Francisco, CA 94177-0001

SUBJECT: DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS RE: TECHNICAL SPECIFICATION (TS) 3.4.1, "REACTOR COOLANT SYSTEM (RCS) PRESSURE, TEMPERATURE, AND FLOW DEPARTURE FROM NUCLEATE BOILING (DNB) LIMITS", AND TS 5.6.5, "CORE OPERATING LIMITS REPORT (COLR)" (TAC NOS. MD3979 AND MD3980)

Dear Mr. Keenan:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 195 to Facility Operating License No. DPR-80 and Amendment No. 196 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 in response to your application dated December 29, 2006.

The amendments revise TS 3.4.1, "Reactor Coolant System (RCS) Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits," and TS 5.6.5, "Core Operating Limits Report (COLR)." This license amendment request relocates the RCS DNB parameters for pressurizer pressure and RCS average temperature to the COLR. In addition, TS 5.6.5 is revised to add Westinghouse topical reports WCAP-8567-P-A, "Improved Thermal Design Procedure," and WCAP-11596-P-A, "Qualification of the PHOENIX-P/ANC Nuclear Design System for Pressurized Water Reactor Cores."

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/

Alan Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures: 1. Amendment No. 195 to DPR-80
2. Amendment No. 196 to DPR-82
3. Safety Evaluation

cc w/encls: See next page

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ADAMS Accession Nos.: Pkg ML071140459 (Amendment/License Pgs. ML070350051, Tech Spec Pgs ML070350052)

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	DIRS/ITSB/BC	OGC Nio	NRR/LPL4/BC
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Diablo Canyon Power Plant, Units 1 and 2

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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.195
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 December 29, 2006, 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 and paragraph 2.C.(2) of Facility Operating License No. DPR-80 as indicated in the attachment to this license amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

David Terao, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility
Operating License and
Technical Specifications

Date of Issuance: April 17, 2007

PACIFIC GAS AND ELECTRIC COMPANY

DOCKET NO. 50-323

DIABLO CANYON NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 196
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 December 29, 2006, 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 and paragraph 2.C.(2) of Facility Operating License No. DPR-82 as indicated in the attachment to this license amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

David Terao, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility
Operating License and
Technical Specifications

Date of Issuance: April 17, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 195

TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 196 TO FACILITY OPERATING LICENSE NO. DPR-82

DOCKET NOS. 50-275 AND 50-323

Replace the following pages of the Facility Operating Licenses, Nos. DPR-80 and DPR-82, and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating Licenses, Nos. DPR-80 and DPR-82

REMOVE

- 3 -
- 3 -

INSERT

- 3 -
- 3 -

Technical Specifications

REMOVE

3.4-1
5.0-26
5.0-27

INSERT

3.4-1
5.0-26
5.0-27

- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This License shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

The Pacific Gas and Electric Company is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100% rated power) in accordance with the conditions specified herein.
 - (2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 195, 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) Initial Test Program

The Pacific Gas and Electric Company shall conduct the post-fuel-loading initial test program (set forth in Section 14 of Pacific Gas and Electric Company's Final Safety Analysis Report, as amended), without making any major modifications of this program unless modifications have been identified and have received prior NRC approval. Major modifications are defined as:

 - a. Elimination of any test identified in Section 14 of PG&E's Final Safety Analysis Report as amended as being essential;

- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This License shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Pacific Gas and Electric Company is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100% rated power) in accordance with the conditions specified herein.

(2) Technical Specifications (SSER 32, Section 8)* and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 196, 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) Initial Test Program (SSER 31, Section 4.4.1)

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

*The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 195 TO FACILITY OPERATING LICENSE NO. DPR-80
AND AMENDMENT NO. 196 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 December 29, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML070160254), Pacific Gas and Electric Company (the 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, Units 1 and 2.

The proposed amendments would revise TS 3.4.1, "Reactor Coolant System (RCS) Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits," and TS 5.6.5, "Core Operating Limits Report (COLR)." Specifically, the proposed changes would relocate the RCS DNB parameters for pressurizer pressure and RCS average temperature to the COLR. This relocation is consistent with Technical Specification Task Force (TSTF) Traveler number TSTF-339, Revision 2, "Relocate TS Parameters to COLR," approved by the U.S. Nuclear Regulatory Commission (NRC) staff on June 13, 2000 (Reference 1). TS 5.6.5, "Core Operating Limits Report (COLR)," is revised to identify selected topical reports by title and number only. These changes are consistent with TSTF-363, Revision 0, "Revise Topical Report References in ITS [Improved Technical Specification] 5.6.5, COLR" (Reference 2). Also TS 5.6.5 is revised to add Westinghouse topical reports WCAP-8567-P-A, "Improved Thermal Design Procedure" (Reference 3), and WCAP-11596-P-A, "Qualification of the PHOENIX-P/ANC Nuclear Design System for Pressurized Water Reactor Cores" (Reference 4).

2.0 REGULATORY EVALUATION

Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.36), "Technical specifications," provides criteria for which limiting conditions for operation must be established. Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications" (Reference 5), which provides guidance for removal of cycle-specific parameter limits from TSs and addresses conformance with 10 CFR 50.36 as follows:

The current method of controlling reactor physics parameters to assure conformance to 10 CFR 50.36 is to specify the specific value(s) determined to be

within specified acceptance criteria (usually the limits of the safety analyses) using an approved calculation methodology. The alternative contained in this guidance controls the values of cycle-specific parameters and assures conformance to 10 CFR 50.36, which calls for specifying the lowest functional performance levels acceptable for continued staff operation, by specifying the calculation methodology and acceptance criteria. This permits operation at any specific value determined by the licensee using the specified methodology, to be within the acceptance criteria. The Core Operating Limits Report will document the specific value of parameter limits resulting from licensee's calculations including any mid-cycle revisions to such parameter values.

The regulatory basis for TS 5.6.5 is to ensure that core operating limits are established in accordance with NRC-approved methodologies and documented in the COLR. GL 88-16 provided guidance for the removal of cycle-specific parameters from the TSs, since processing cycle-specific limit changes was an unnecessary burden on both licensees and the NRC. The GL was intended to apply to those TS changes that were developed with NRC-approved methodologies. To support the removal of cycle-specific parameters, the GL recommended that cycle-specific parameter limit values be placed in a COLR, thereby eliminating the need for reload license amendments. The COLR would be submitted to the NRC to allow continued trending of information, even though NRC approval of these limits would not be required.

3.0 TECHNICAL EVALUATION

The justification to expand the COLR is provided in WCAP-14483-A (Reference 6), which was approved by the NRC staff on January 19, 1999. The changes to the Standard Technical Specifications were approved in TSTF-339, Revision 2.

The cycle-specific parameters being transferred from the TS to the COLR will continue to be controlled under existing programs and procedures. The Final Safety Analysis Report Update (FSARU) accident analyses will continue to be examined with respect to changes in the cycle-dependent parameters obtained using NRC-reviewed and approved reload design methodologies, ensuring that the transient evaluation of new reload designs are bounded by previously accepted analyses. This examination will continue to be performed pursuant to 10 CFR 50.59 requirements to ensure that future reload designs use NRC-approved methodologies and do not involve more than a minimal increase in the probability or consequences of an accident previously evaluated in the FSARU.

TS 5.6.5 is revised to add topical reports WCAP-8567-P-A and WCAP-11596-P-A.

1. WCAP-8567-P-A is the NRC-reviewed and approved methodology topical report that describes the design method employed to meet the DNB design basis. With the Improved Thermal Design Procedure (ITDP) methodology, uncertainties in plant operating parameters, nuclear and thermal parameters, fuel fabrication parameters, computer codes, and DNB correlation predictions are combined statistically to obtain the overall DNB uncertainty factor that is used to define the design limit departure from nucleate boiling ratio (DNBR) that satisfies the DNB design criterion. Diablo Canyon Power Plant FSARU Chapter 4.4, "Thermal and Hydraulic Design," discusses use of IDTP for DNBR calculations.

2. WCAP-11596-P-A, is the NRC-reviewed and approved methodology topical report for an advanced nodal code (ANC) capable of two-dimensional and three-dimensional calculations. In this design, ANC is employed as the reference model for all safety analysis calculations, power distributions, peaking factors, critical boron concentrations, control rod worths, and reactivity coefficients. In addition, three-dimensional ANC is used to validate one and two-dimensional results and to provide information about radial peaking factors as a function of axial position. PHOENIX-P is a two-dimensional, multi-group transport theory code that utilizes a 70 energy-group cross-section library. It provides the capability for cell lattice modeling on an assembly level. In this design, PHOENIX-P is used to provide homogenized, two-group cross sections for nodal calculations and feedback models. It is also used in a special geometry to generate appropriately weighted constants for the baffle/reflector regions. Diablo Canyon Power Plant FSARU Chapter 4.3, "Nuclear Design," describes use of the ANC and PHOENIX-P codes for core neutronic calculations.

Relocating the DNB parameters limit values to the COLR allows the flexibility to utilize the available margins to increase cycle operating margins and improve core reload designs without the need for cycle-specific license amendments. The relocation of the DNB parameters to the COLR results in a more complete COLR, containing not only cycle-specific core reload-related parameters, but also cycle-specific operating condition parameters. Thus, the safety analyses could credit the actual cycle-specific operating conditions in the same way that the core reload designs currently do. The COLR and safety analysis will more closely reflect the cycle-specific conditions for which the plant control and protection systems are set.

The proposed change to TS 5.6.5b to reference only the topical report number and title for five of the topical reports listed in TS 5.6.5b (1, 2, 3, and new numbers 9 and 10) is consistent with TSTF-363. The purpose for this change is to allow the use of current topical reports to support limits in the COLR without having to submit a request for an amendment to the operating license. Implementation of revisions to these topical reports would still be reviewed in accordance with 10 CFR 50.59 and, where required, prior NRC review and approval would be requested. The remaining topical reports listed in TS 5.6.5b (4, 5, 6, and 7) are loss-of-coolant accident (LOCA) analysis methods. Consistent with recent NRC staff guidance regarding LOCA methodology and 10 CFR 50.46 reporting requirements, the revision number and dates for these LOCA-related topical reports are being retained in TS 5.6.5b.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to 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 (72 FR 6786 published on February 13, 2007). 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.

7.0 REFERENCES

1. TSTF-339, Revision 2, "Relocate TS Parameters to COLR," (ADAMS Accession No. ML003723269).
2. TSTF-363, Revision 0, "Revise Topical Report References in ITS 5.6.5, COLR," (ADAMS Accession No. ML040630088).
3. WCAP-8567-P-A, "Improved Thermal Design Procedure," February 1989.
4. WCAP-11596-P-A, "Qualification of the PHOENIX-P/ANC Nuclear Design System for Pressurized Water Reactor Cores," June 1988.
5. NRC Generic Letter 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications," October 3, 1988.
6. WCAP-14483-A, "Generic Methodology for Expanded Core Operating Limits Report," November 1995 (ADAMS Accession No. ML020430092).

Principal Contributor: A. Lewin

Date: April 17, 2007