



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

September 5, 2013

Mr. Edward D. Halpin
Senior Vice President and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 56, Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS RE: REVISION TO TECHNICAL SPECIFICATION 5.5.7, "REACTOR COOLANT PUMP FLYWHEEL INSPECTION PROGRAM," IN ACCORDANCE WITH TSTF-421-A, REVISION 1 (TAC NOS. ME9566 AND ME9567)

Dear Mr. Halpin:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 216 to Facility Operating License No. DPR-80 and Amendment No. 218 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 September 12, 2012.

The amendments revise TS 5.5.7, "Reactor Coolant Pump Flywheel Inspection Program," to extend the reactor coolant pump (RCP) motor flywheel examination frequency from the currently approved 10-year examination frequency to an interval not to exceed 20 years, in accordance with NRC-approved Technical Specifications Task Force (TSTF) change traveler TSTF-421-A, Revision 0, "Revision to RCP Flywheel Inspection Program (WCAP-15666)," that has been approved generically for the Westinghouse Standard Technical Specifications (STS), NUREG-1431. A notice announcing the availability of this proposed TS change using the Consolidated Line Item Improvement Process was published in the *Federal Register* on October 22, 2003 (68 FR 60422). The TSTF-421 model safety evaluation, model no significant hazards consideration determination, and model license amendment request were published in the *Federal Register* on June 24, 2003 (68 FR 37590).

E. Halpin

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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,

A handwritten signature in black ink that reads "Jennie Rankin". The signature is written in a cursive style with a large initial "J".

Jennie K. Rankin, 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. 216 to DPR-80
2. Amendment No. 218 to DPR-82
3. Safety Evaluation

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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. 216
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 September 12, 2012, 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.

Enclosure 1

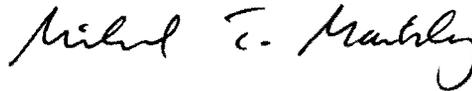
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. DPR-80 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 216, 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 is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility
Operating License No. DPR-80
and Technical Specifications

Date of Issuance: September 5, 2013



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. 218
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 September 12, 2012, 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.

Enclosure 2

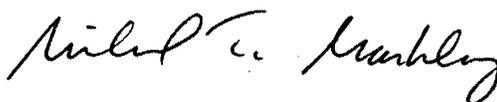
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. DPR-82 is hereby amended to read as follows:

(2) Technical Specifications (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. 218, 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 is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility
Operating License No. DPR-82
and Technical Specifications

Date of Issuance: September 5, 2013

ATTACHMENT TO LICENSE AMENDMENT NO. 216

TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 218 TO FACILITY OPERATING LICENSE NO. DPR-82

DOCKET NOS. 50-275 AND 50-323

Replace the following pages of the Facility Operating License 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 License No. DPR-80

<u>REMOVE</u>	<u>INSERT</u>
3	3

Facility Operating License No. DPR-82

<u>REMOVE</u>	<u>INSERT</u>
3	3

Technical Specifications

<u>REMOVE</u>	<u>INSERT</u>
5.0-9	5.0-9

- (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. 216, 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. 218, 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.

5.5 Programs and Manuals (continued)

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of Regulatory Position c.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

In lieu of Position c.4.b(1) and c.4.b(2), a qualified in-place UT examination over the volume from the inner-bore of the flywheel to the circle one-half of the outer radius or a surface examination (MT and/or PT) of exposed surfaces of the removed flywheels may be conducted at an interval not to exceed 20 years.

5.5.8 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. The program shall include the following:

- a. Testing frequencies applicable to the ASME Code for Operations and Maintenance of Nuclear Power Plants (ASME OM Code) and applicable Addenda as follows:

ASME OM Code and applicable Addenda terminology for inservice testing activities	Required Frequencies for performing inservice testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

- b. The provisions of SR 3.0.2 are applicable to the above required Frequencies and to other normal and accelerated Frequencies specified as 2 years or less in the Inservice Testing Program for performing inservice testing activities;
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and
- d. Nothing in the ASME OM Code shall be construed to supersede the requirements of any TS.

(continued)



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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 216 TO FACILITY OPERATING LICENSE NO. DPR-80
AND AMENDMENT NO. 218 TO FACILITY OPERATING LICENSE NO. DPR-82
PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-275 AND 50-323

1.0 INTRODUCTION

By application dated September 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12256A909), 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 Diablo Canyon Power Plant (DCPP) Unit Nos. 1 and 2.

The proposed changes would extend the reactor coolant pump (RCP) motor flywheel examination frequency from the currently approved 10-year inspection interval to an interval not to exceed 20 years. These changes are based on the U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) change traveler TSTF-421-A, Revision 0, "Revision to RCP Flywheel Inspection Program (WCAP-15666)," that has been approved generically for the Westinghouse Standard Technical Specifications (STS), NUREG-1431. A notice announcing the availability of this proposed TS change using the consolidated line item improvement process (CLIIP) was published in the *Federal Register* on October 22, 2003 (68 FR 60422).

2.0 REGULATORY EVALUATION

The function of the RCP in the reactor coolant system (RCS) of a pressurized-water reactor plant is to maintain an adequate cooling flow rate by circulating a large volume of primary coolant water at high temperature and pressure through the RCS. Following an assumed loss of power to the RCP motor, the flywheel, in conjunction with the impeller and motor assembly, provides sufficient rotational inertia to assure adequate primary coolant flow during RCP coastdown, thus resulting in adequate core cooling.

A concern regarding the overspeed of the RCP and its potential for failure led to the issuance of NRC Regulatory Guide (RG) 1.14, "Reactor Coolant Pump Flywheel Integrity," Revision 1,

dated August 1975 (ADAMS Accession No. ML003739936). RG 1.14 describes a method acceptable to the NRC staff of addressing concerns related to RCP vibration and the possible effects of missiles that might result from the failure of the RCP flywheel. The need to protect components important to safety from such missiles are included in General Design Criterion (GDC) 4, "Environmental and Dynamic Effects Design Basis," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," which is applicable to plants that obtained their construction permits after May 21, 1971.

DCCP's construction permits for Units 1 and 2 were issued prior to 1971. DCCP is in compliance with the General Design Criteria published in 1967 (Draft GDC) by the Atomic Energy Commission, with the exception of a few current criteria. Compliance with GDC 4 is discussed in the DCCP Final Safety Analysis Report Update, Revision 20, Section 3.1.8.4.1, "Criterion 4, 1987 revision - Environmental and dynamic effects design bases."

Specific requirements to have an RCP Flywheel Inspection Program consistent with RG 1.14 or previously issued relaxations from the regulatory guide are included in the Administrative Controls Section of the TSs. The purpose of the testing and inspection programs defined in the TSs is to ensure that the probability of a flywheel failure is sufficiently small such that additional safety features are not needed to protect against a flywheel failure. The RG provides criteria in terms of critical speeds that could result in the failure of a RCP flywheel during normal or accident conditions. In addition to the guidance in RG 1.14, the NRC has more recently issued RG 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," May 2011 (ADAMS Accession No. ML100910006), which provides guidance and criteria for evaluating proposed changes that use risk-informed justifications.

A proposed justification for extending the RCP flywheel inspections from a 10-year inspection interval to an interval not to exceed 20 years was provided by the Westinghouse Owners Group (WOG) in topical report (TR) WCAP-15666, "Extension of Reactor Coolant Pump Motor Flywheel Examination," transmitted by letter dated August 24, 2001 (ADAMS Accession No. ML012420149). The topical report addressed the proposed extension for all domestic WOG plants. The NRC accepted the topical report for referencing in license applications in a letter and safety evaluation dated May 5, 2003 (ADAMS Accession No. ML031250595).

The licensee has reviewed the NRC staff's model safety evaluation, which was published in the *Federal Register* on June 24, 2003 (68 FR 37590), as well as the information provided to support TSTF-421, including topical report WCAP-15666 and the related safety evaluation dated May 5, 2003. The licensee's evaluation concluded TSTF-421 and the model safety evaluation are applicable to DCCP, Units 1 and 2, and appropriate to incorporate into the DCCP TSs.

3.0 TECHNICAL EVALUATION

TS 5.5.7, "Reactor Coolant Pump Flywheel Inspection Program," reflects the licensee's previous adoption of a TS change that defined the allowable alternative to the inspections described in RG 1.14. The inspections are defined as in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle of one-half of the outer radius or an alternative

surface examination (magnetic particle testing (MT) and/or liquid penetrant testing (PT)) of exposed surfaces defined by the volume of the disassembled flywheel. The allowable interval for these inspections was extended in the previous amendment to "once every ten years coinciding with the inservice inspection schedule as required by ASME [American Society of Mechanical Engineers, Boiler and Pressure Vessel Code], Section XI." The change proposed in this amendment application would revise the allowable inspection interval to "an interval not to exceed 20 years." This change deviates slightly from TSTF-421, which uses "at 20-year intervals." However, the change agrees with the phrasing in WCAP-15666 and is more conservative than the requirement as stated in TSTF-421.

The justification for the proposed change was provided in WCAP-15666, which the NRC staff accepted for referencing in license applications by a letter and safety evaluation dated May 5, 2003. The topical report addresses the three critical speeds defined in RG 1.14: (a) the critical speed for ductile failure, (b) the critical speed for non-ductile failure, and (c) the critical speed for excessive deformation of the flywheel. The NRC staff concluded that the methodologies in the topical report adequately addressed these issues and demonstrated that acceptance criteria, for normal and accident conditions defined in RG 1.14, would continue to be met for all domestic WOG plants following an extension of the inspection interval. The topical report also provided a risk assessment for extending the RCP flywheel inspection interval. The NRC staff's review, documented in the safety evaluation for the topical report, determined that the analysis methods and risk estimates are acceptable when compared to the guidance in RG 1.174.

Based on the above, the NRC staff concludes that the regulatory positions in RG 1.14 concerning the three critical speeds are satisfied, and that the evaluation indicating that critical crack sizes are not expected to be attained during a 20-year inspection interval is reasonable and acceptable. The potential for failure of the RCP flywheel is, and will continue to be, negligible during normal and accident conditions. The change is, therefore, 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 requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. 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 published in the *Federal Register* on November 27, 2012 (77 FR 70841). 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) there is reasonable assurance that 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: K. Hemphill, NRR/DSS/STSB
R. Grover, NRR/DSS/STSB

Date: September 5, 2013

E. Halpin

- 2 -

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/

Jennie K. Rankin, 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. 216 to DPR-80
2. Amendment No. 218 to DPR-82
3. Safety Evaluation

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