January 30, 2006

Mr. Jack S. Keenan
Senior Vice President and CNO
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 - APPROVAL OF RELIEF REQUESTS P-RR1, P-RR2, AND P-RR3 FOR THE THIRD 10-YEAR PUMP AND VALVE INSERVICE TESTING PROGRAM INTERVAL (TAC NOS. MC6632 AND MC6633)

Dear Mr. Keenan:

By letter dated March 14, 2005, Pacific Gas and Electric Company (PG&E/the licensee) submitted Relief Requests P-RR1 and P-RR2 for its third 10-year inservice testing program interval at Diablo Canyon Power Plant, Units 1 and 2. In response to the Nuclear Regulatory Commission (NRC) staff's request for additional information, the licensee by letter dated July 26, 2005, revised Relief Requests P-RR1 and P-RR2, and submitted an additional Relief Request P-RR3.

The NRC staff has completed its review of the subject relief requests. Relief Requests P-RR1, P-RR2, and P-RR3 are authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the proposed alternatives provide an acceptable level of quality and safety. The NRC staff's safety evaluation is enclosed. If you have any questions regarding the safety evaluation, please contact Alan B. Wang at (301) 415-1445.

Sincerely,

/RA/

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

Docket Nos. 50-275 and 50-323

Enclosure: Safety Evaluation

cc w/encl: See next page

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Senior Vice President and CNO
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By letter dated March 14, 2005, Pacific Gas and Electric Company (PG&E/the licensee) submitted Relief Requests P-RR1 and P-RR2 for its third 10-year inservice testing program interval at Diablo Canyon Power Plant, Units 1 and 2. In response to the Nuclear Regulatory Commission (NRC) staff's request for additional information, the licensee by letter dated July 26, 2005, revised Relief Requests P-RR1 and P-RR2, and submitted an additional Relief Request P-RR3.

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF FROM THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

(ASME) SECTION XI INSERVICE INSPECTION PROGRAM

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 letter dated March 14, 2005, Pacific Gas and Electric Company (PG&E/the licensee) submitted Relief Requests P-RR1 and P-RR2 for its third 10-year inservice testing (IST) program interval at Diablo Canyon Power Plant, Units 1 and 2 (DCPP). In response to the staff's request for additional information, the licensee by letter dated July 26, 2005, revised Relief Requests P-RR1 and P-RR2, and submitted an additional Relief Request P-RR3.

2.0 REGULATORY EVALUATION

Section 50.55a of Title 10 of the *Code of Federal Regulations* (10 CFR) requires that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with the ASME Operations and Maintenance (OM) Code and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to Sections (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a.

In accordance with 10 CFR 50.55a(f)(4)(ii), licensees are required to comply with the requirements of the latest edition and addenda of the ASME Code incorporated by reference in the regulations 12 months prior to the start of subsequent 120-month IST program intervals.

In proposing alternatives that meet the requirements of Section (a)(3)(i), the licensee must demonstrate that the proposed alternatives provide an acceptable level of quality and safety. Section 50.55a authorizes the Commission to approve alternatives and to grant relief from ASME Code requirements upon making necessary findings. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to Code requirements which are acceptable. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidance for Inservice Testing at Nuclear Power Plants."

By letters dated March 14 and July 26, 2005, PG&E submitted Relief Requests P-RR1, P-RR2, and P-RR3 for its third 10-year IST program interval at DCPP. The third 10-year IST program was developed to meet the requirements of the 2001 Edition through 2003 Addenda of the ASME OM Code pursuant to 10 CFR 50.55a(f)(4)(ii).

3.0 TECHNICAL EVALUATION

The Nuclear Regulatory Commission (NRC) staff's findings with respect to authorizing alternatives pursuant to 10 CFR 50.55a(a)(3)(i) are given below.

3.1 Pump Relief Request P-RR1

3.1.1 Code Requirements

Paragraph ISTB-5121, Group A Test Procedure, requires "Group A tests shall be conducted with the pump operating at a specified reference point," and ISTB-5121(b) further states that "[t]he resistance of the system shall be varied until flow rate equals the reference point."

Paragraph ISTB-5123, Comprehensive Test Procedure, requires "Comprehensive tests shall be conducted with the pump operating at a specified reference point," and ISTB-5123(b) further states that "[t]he resistance of the system shall be varied until flow rate equals the reference point."

3.1.2 Specific Relief Requested

The licensee requests relief from the Code requirements of paragraphs ISTB-5121 and ISTB-5123 for component cooling water (CCW) pumps 1-1, 1-2, 1-3, 2-1, 2-2, and 2-3.

3.1.3 Component Identification

The components affected by this relief request are CCW pumps 1-1, 1-2, and 1-3 for Diablo Canyon Unit 1, and CCW pumps 2-1, 2-2, and 2-3 for Diablo Canyon Unit 2. These pumps are classified as ASME Class 3, Group A pumps.

The CCW pumps supply cooling water to the component cooling heat exchangers, which remove heat from systems containing radioactive fluids.

3.1.4 Licensee's Basis for Requesting Relief

The CCW system has varying heat loads, and therefore, varying flow requirements. A full flow test line with a single throttle valve for the purpose of testing was not incorporated in the initial design of the system. For some plant conditions, a reference flow condition cannot be established without adversely affecting the system flow balance and Technical Specification (TS) operability requirements. Thus, these pumps must be tested in a manner such that the CCW system remains properly flow balanced during and after the testing and operation. During some refueling outages, CCW flow demand varies greatly due to reactor coolant system cooldown, clearing of components for maintenance, and spent fuel pool heat exchanger cooling water demand. Past experience at DCPP has shown that CCW flow during a refueling outage is usually greater than flow during power operation, and it is not practical to reduce flow in order to perform the CCW pump IST. At a minimum, perturbation of multiple systems is required to establish a flow point due to multiple parallel flow paths of the CCW system. This abnormal configuration would have to be maintained for the length of time required to take vibration and

pump hydraulic data. In addition, requiring operators to maintain valves required to adjust CCW flow to the reference point is adverse to maintaining radiation exposure as low as reasonably achievable.

Plant conditions may not be the same as when the reference values were established. Many reference points must be established to anticipate future conditions. In the service water system, reproducing one of these references flow points is not practical with the large butterfly valves installed, and it may be desirable to alter cooling because of other plant operating parameters. Therefore, the pumps will be tested over a range of flows, and the results will be compared to the acceptable criteria based on a portion of the pump curve and the hydraulic acceptance criteria given in ISTB.

The guidelines set forth in Code Case OMN-9, "Use of a Pump Curve for Testing," and conditions identified in Regulatory Guide (RG) 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," will be followed. The conditions identified in RG 1.192 are:

(1) When a reference curve may have been affected by repair, replacement, or routine servicing of a pump, a new reference curve must be determined, or an existing reference curve must be reconfirmed, in accordance with Section 3 of this Code Case.

(2) If it is necessary or desirable, for some reason other than that stated in Section 4 of this Code Case, to establish an additional reference curve or set of curves, these new curves must be determined in accordance with Section 3 [of the Code Case.]

The licensee states that past vibration data for the subject pumps have been reviewed, and it has been determined that pump vibration does not vary significantly with flow rate over the range of the test flow rates.

3.1.5 Licensee's Proposed Alternative Testing

PG&E requests to use the guidelines set forth in Code Case OMN-9, "Use of a Pump Curve for Testing," and conditions identified in RG 1.192, Operation and Maintenance Code Case Acceptability, ASME OM Code, in lieu of the ASME OM Code paragraphs ISTB-5121 and ISTB-5123 requirements for CCW pumps 1-1, 1-2, 1-3, 2-1, 2-2, and 2-3.

PG&E requests to use the alternative testing guidance of Code Case OMN-9, to allow the use of pump curves for pump testing. However, since OMN-9 is only applicable to ASME OM Code 1990 through the OMb 1992 Addenda. The use of Code Case OMN-9 is acceptable with certain conditions as identified by the NRC in RG 1.192. PG&E proposed to use Code Case OMN-9 as follows.

PG&E would perform testing in accordance with the OM Code 2001 with Addenda though 2003, with the following adjustments for the CCW pumps:

C The supplemental definitions of ISTB-2000 will be augmented with the additional definitions provided in Code Case OMN-9, Section 1;

- Reference values shall be determined in accordance with OMN-9, Section 2, in lieu of ISTB-3300(a) through (d), and reference curves shall be established in accordance with OMN-9, Section 3, supplemented with the flow requirements of ISTB-3300(e);

- The effect of pump replacement, repair, and maintenance on reference values or reference curves shall be performed per OMN-9, Section 4, with the provision that if new reference curves are required, they shall be established per OMN-9, Section 3, in lieu of ISTB-3310;

- Additional sets of reference values or reference curves shall be established in accordance with OMN-9, Section 5, with the provision that if new reference curves are required, they shall be established per OMN-9, Section 3, in lieu of ISTB-3320;

- Group A test pump reference curve(s) shall be established per the requirements of OMN-9, Section 6, in lieu of ISTB-5121 (with the reference to Table ISTB 5.2-1 changed to Table ISTB-3000-1, and the references in 6(d) changed from Table ISTB 5.2-2 and Figure ISTB 5.2-1 to Table ISTB-5100-1 and Figure ISTB-5200-1, respectively);

- Comprehensive pump test reference curve(s) shall be established per the requirements of OMN-9, Section 6, in lieu of ISTB-5123 (with the reference to Table ISTB 5.2-1 changed to Table ISTB-3000-1, and the references in 6(d) changed from Table ISTB 5.2-2 and Figure ISTB 5.2-1 to Table ISTB-5100-1 and Figure ISTB-5200-1, respectively);

- Corrective Actions shall be taken per OMN-9, Section 7, in lieu of ISTB-6200(a) and ISTB-6200(b) (with the reference to Figure ISTB 5.2-1 changed to Figure ISTB-5200-1, the reference to Table ISTB 5.2-2 changed to Table ISTB-5100-1, and the reference to ISTB 5.1 changed to ISTB-3400); and

- ISTB-9000 shall be used in lieu of the reference to ISTB 7 in the various sections of OMN-9.

The OM Code currently allows the use of multiple reference points per ISTB-3320. This relief request effectively establishes many reference points through the interpolation of area between reference points and the establishment of a reference curve. The existing Code acceptance criteria are then applied over the curve.

3.1.6 Evaluation of Pump Relief Request P-RR1

ASME OM Code, paragraphs ISTB-5121 and ISTB-5123 require that Group A and Comprehensive tests shall be conducted with the pump operating at a specified reference point. ISTB-5121(b) and ISTB-5123(b) further state that “[t]he resistance of the system shall be varied until flow rate equals the reference point.”

The licensee states that plant conditions may not be the same as when the reference values were established and many reference points must be established to anticipate future conditions.

In the CCW system, reproducing one of these reference flow points is not practical. The CCW pumps operate under a variety of flow rate and differential pressure conditions. Varying the flow rate of these pumps is impractical during normal plant operating conditions because of the potential loss of adequate flow to heat exchangers and the potential of creating plant transients. Therefore, the CCW pumps will be tested over a range of flows, and results will be compared to acceptance criteria based on a portion of the pump curve and the hydraulic acceptance criteria given in the OM Code, Subsection ISTB.

As discussed in NUREG-1482, Section 5.2, the use of pump curves for reference values of flow rate and differential pressure is acceptable when it is impractical to establish a fixed set of reference values. Pump curves represent a set of infinite reference points of flow rate and differential pressure. Establishing a reference curve for the pump when it is known to be operating acceptably and basing the acceptance criteria on this curve can permit evaluation of pump condition and detection of degradation. However, because of a greater potential for error associated with the use of pump curves, Section 5.2 of NUREG-1482 delineates seven elements on the procedures for developing and implementing the curves that should be incorporated into the IST program. These elements are included in Code Case OMN-9. Code Case OMN-9 is applicable to OM Code 1990 through OMb Code 1992, therefore, relief is required to implement Code Case OMN-9 approved with the OM Code 2001 Edition through 2003 Addenda.

The licensee proposed use of Code Case OMN-9, “Use of a Pump Curve for Testing,” along with OM Code 2001 Edition through 2003 Addenda, which is consistent with the guidelines in Section 5.2 of NUREG-1482 and provides reasonable assurance of the operational readiness of the CCW pumps. However, NUREG-1482 was developed based on the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition. The latest NRC staff guidance is described in NUREG-1482, Revision 1, which is developed based on the ASME OM Code, 1995 Edition through 2000 Addenda. NUREG-1482, Revision 1, Section 5.2 allows the use of Code Case OMN-9, Revision 0, “Use of Pump Curves for Testing.” NRC RG 1.192, “Operation and Maintenance Code Case Acceptability, ASME OM Code,” lists the OM Code Cases that the NRC staff finds acceptable for licensees to implement in their IST program. In particular, the staff accepted Code Case OMN-9, with the conditions identified in RG 1.192. The NRC staff considers the provisions in OMN-9 to be acceptable for establishing reference curves for comprehensive and quarterly pump testing and for the determination of the applicable alert and action ranges. On the basis that new pump curves will be developed in accordance with OMN-9 and the conditions identified in RG 1.192, the NRC staff finds that the proposed alternative provides an acceptable level of quality and safety.

3.1.7 Conclusion

The proposed alternative to the Code requirements of paragraphs ISTB-5121 and ISTB-5123 for CCW pumps is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the alternative provides an acceptable level of quality and safety.

3.2 Pump Relief Request P-RR2

3.2.1 Code Requirements

Paragraph ISTB-5221, Group A Test Procedure, requires that "Group A tests shall be conducted with the pump operating at a specified reference point," and ISTB-5221(b) further states that "[t]he resistance of the system shall be varied until flow rate equals the reference point."
Paragraph ISTB-5223, Comprehensive Test Procedure, requires that "Comprehensive tests shall be conducted with the pump operating at a specified reference point," and ISTB-5223(b) further states that "[t]he resistance of the system shall be varied until flow rate equals the reference point."

3.2.2 Specific Relief Requested

The licensee requests relief from the Code requirements of paragraphs ISTB-5221 and ISTB-5223 for auxiliary saltwater (ASW) pumps 1-1, 1-2, 2-1, and 2-2.

3.2.3 Component Identification

The components affected by this relief request are ASW pumps 1-1 and 1-2 for Diablo Canyon Unit 1, and 2-1 and 2-2 for Diablo Canyon Unit 2. These pumps are classified as ASME Class 3, Group A pumps.

The ASW pumps supply cooling water to the component cooling heat exchangers, which remove heat from systems.

3.2.4 Licensee's Basis for Requesting Relief

The licensee states that adjustment to a specific reference value for the ASW pump test is not practical because the pump flow rate varies based on tide level (suction pressure) and heat exchanger differential pressure (system resistance), which cannot be readily controlled. The CCW heat exchanger outlet throttle valves are the only valves which can be adjusted to set ASW pump flow at the desired test flow. These valves are sealed in a throttled position which ensures the train can perform its required safety function under worst case conditions. A CCW heat exchanger is considered inoperable after its outlet valve is adjusted until a flow verification test is performed. The flow verification test requires that the system alignment with the most system resistance, for example, ASW pump #1 to CCW heat exchanger #2 (or ASW pump #2 to CCW heat exchanger #1) be used. This realignment, test and subsequent data analysis takes several hours, during which time the CCW heat exchanger is inoperable. Under these conditions reference pump flow is between 11,500 and 12,500 gpm. DCPP Technical Specification 3.7.9 requires that the second vital CCW heat exchanger be placed in service whenever ultimate heat sink temperature is greater than 64 degrees Fahrenheit. Under these conditions, ASW pump flows could be as high as 14,000 gpm.

Plant conditions may not be the same as when the reference values were established. Many reference points must be established to anticipate future conditions. In the service water system, reproducing one of these reference flow points is not practical with the large butterfly

valves installed, and it may be desirable to alter cooling because of other plant operating parameters. Therefore, the pumps will be tested over a range of flows, and the results will be compared to the acceptable criteria based on a portion of the pump curve and the hydraulic acceptance criteria given in ISTB.

The guidelines set forth in Code Case OMN-9, "Use of a Pump Curve for Testing," and conditions identified in RG 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," will be followed. The conditions identified in RG 1.192 are:

(1) When a reference curve may have been affected by repair, replacement, or routine servicing of a pump, a new reference curve must be determined, or an existing reference curve must be reconfirmed, in accordance with Section 3 of this Code Case.

(2) If it is necessary or desirable, for some reason other than that stated in Section 4 of this Code Case, to establish an additional reference curve or set of curves, these new curves must be determined in accordance with Section 3 of the Code Case.

Past vibration data for the subject pumps have been reviewed, and it has been determined that pump vibration does not vary significantly with flow rate over the range of the test flow rates.

3.2.5 Licensee's Proposed Alternative Testing

PG&E requests to use the guidelines set forth in Code Case OMN-9, "Use of a Pump Curve for Testing," and conditions identified in RG 1.192, Operation and Maintenance Code Case Acceptability, ASME OM Code, in lieu of the ASME OM Code paragraphs ISTB-5221 and ISTB-5223 requirements for ASW pumps 1-1, 1-2, 2-1, and 2-2.

PG&E requests to use the alternative testing guidance of Code Case OMN-9, to allow the use of pump curves for pump testing. However, since OMN-9 is only applicable to ASME OM Code 1990 through the OMb 1992 Addenda. The use of Code Case OMN-9 is acceptable with certain conditions as identified by the NRC in RG 1.192. PG&E proposed to use Code Case OMN-9 as follows.

PG&E would perform testing in accordance with the OM Code 2001 with Addenda though 2003, with the following adjustments for the CCW pumps:

- The supplemental definitions of ISTB-2000 will be augmented with the additional definitions provided in Code Case OMN-9, Section 1;

- Reference values shall be determined in accordance with OMN-9, Section 2, in lieu of ISTB-3300(a) through (d), and reference curves shall be established in accordance with OMN-9, Section 3, supplemented with the flow requirements of ISTB-3300(e);

- The effect of pump replacement, repair, and maintenance on reference values or reference curves shall be performed per OMN-9, Section 4, with the provision that if new reference curves are required, they shall be established per OMN-9, Section 3, in lieu of ISTB-3310;

- Additional sets of reference values or reference curves shall be established in accordance with OMN-9, Section 5, with the provision that if new reference curves are required, they shall be established per OMN-9, Section 3, in lieu of ISTB-3320;

- Group A test pump reference curve(s) shall be established per the requirements of OMN-9, Section 6, in lieu of ISTB-5221 (with the reference to Table ISTB 5.2-1 changed to Table ISTB-3000-1, and the references in 6(d) changed from Table ISTB 5.2-2 and Figure ISTB 5.2-1 to Table ISTB-5200-1 and Figure ISTB-5200-1, respectively);

- Comprehensive pump test reference curve(s) shall be established per the requirements of OMN-9, Section 6, in lieu of ISTB-5223 (with the reference to Table ISTB 5.2-1 changed to Table ISTB-3000-1, and the references in 6(d) changed from Table ISTB 5.2-2 and Figure ISTB 5.2-1 to Table ISTB-5200-1 and Figure ISTB-5200-1, respectively);

- Corrective Actions shall be taken per OMN-9, Section 7, in lieu of ISTB-6200(a) and ISTB-6200(b) (with the reference to Figure ISTB 5.2-1 changed to Figure ISTB-5200-1, the reference to Table ISTB 5.2-2 changed to Table ISTB-5200-1, and the reference to ISTB 5.1 changed to ISTB-3400); and

- ISTB-9000 shall be used in lieu of the reference to ISTB-7 in the various sections of OMN-9.

The OM Code currently allows the use of multiple reference points per ISTB-3320. This relief request effectively establishes many reference points through the interpolation of area between reference points and the establishment of a reference curve. The existing Code acceptance criteria are then applied over the curve.

3.2.6 Evaluation of Pump Relief Request P-RR2

ASME OM Code, paragraphs ISTB-5221 and ISTB-5223 require that Group A and Comprehensive tests shall be conducted with the pump operating at a specified reference point. ISTB-5221(b) and ISTB-5223(b) further state that “[t]he resistance of the system shall be varied until flow rate equals the reference point.”

The licensee states that plant conditions may not be the same as when the reference values were established and many reference points must be established to anticipate future conditions. In the ASW system, reproducing one of these reference flow points is not practical. The ASW pumps operate under a variety of flow rate and differential pressure conditions. Varying the flow rate of these pumps is impractical during normal plant operating conditions because of the potential loss of adequate flow to heat exchangers and the potential of creating plant transients. Therefore, the ASW pumps will be tested over a range of flows, and results will be compared to acceptance criteria based on a portion of the pump curve and the hydraulic acceptance criteria given in the OM Code Subsection ISTB.

As discussed in NUREG-1482, Section 5.2, the use of pump curves for reference values of flow rate and differential pressure is acceptable when it is impractical to establish a fixed set of reference values. Pump curves represent a set of infinite reference points of flow rate and differential pressure. Establishing a reference curve for the pump when it is known to be operating acceptably and basing the acceptance criteria on this curve can permit evaluation of pump condition and detection of degradation. However, because of a greater potential for error associated with the use of pump curves, Section 5.2 of NUREG-1482 delineates seven elements on the procedures for developing and implementing the curves that should be incorporated into the IST program. These elements are included in the Code Case OMN-9. Code Case OMN-9 is applicable to OM Code 1990 through OMb Code 1992, therefore, relief is required to implement Code Case OMN-9 with the OM Code 2001 Edition through 2003 Addenda.

The licensee proposed use of Code Case OMN-9, "Use of a Pump Curve for Testing," along with OM Code 2001 Edition through 2003 Addenda, is consistent with the guidelines in Section 5.2 of NUREG-1482 and provides reasonable assurance of the operational readiness of the ASW pumps. However, NUREG-1482 was developed based on the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition. The latest NRC staff guidance is described in NUREG-1482, which is developed based on the ASME OM Code, 1995 Edition through 2000 Addenda. NUREG-1482, Revision 1, Section 5.2 allows the use of Code Case OMN-9, Revision 0, "Use of Pump Curves for Testing." NRC RG 1.192, "Operation and Maintenance Code Case Acceptability, ASME Code Case," lists the OM Code Cases that the NRC staff finds acceptable for licensees to implement in their IST program. In particular, the NRC staff accepted Code Case OMN-9, with the conditions identified in RG 1.192. The NRC staff considers the provisions in OMN-9 to be acceptable for establishing reference curves for comprehensive and quarterly pump testing and for the determination of the applicable alert and action ranges. On the basis that new pump curves will be developed in accordance with OMN-9 and the conditions identified in RG 1.192, the NRC staff finds that the proposed alternative provides an acceptable level of quality and safety.

3.2.7 Conclusion

The proposed alternative to the Code requirements of paragraphs ISTB-5221 and ISTB-5223 for the ASW pumps is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the alternative provides an acceptable level of quality and safety.

3.3 Pump Relief Request P-RR-3

3.3.1 Code Requirements

Paragraph ISTB-3510(b)(2) requires that "digital instruments shall be selected such that the reference value does not exceed 70% of the calibrated range of the instrument."

3.3.2 Specific Relief Requested

The licensee requests relief from the Code requirements of paragraph ISTB-3510(b)(2) for unspecified instruments.

3.3.3 Licensee's Basis for Requesting Relief

The licensee requests relief from the digital instrument range requirements of paragraph ISTB-3510(b)(2), for unspecified instruments in the licensee's IST program.

The purpose of this request is to allow greater flexibility in selection of instruments and to prevent having to install multiple instruments to monitor the same parameter during testing. Digital instruments shall be selected such that the reference value does not exceed 90 percent of the calibrated range of the instrument.

For the instruments used by the OM Code for pump testing, other than vibration instruments which are exempted from the subject paragraph by ISTB-3510(b)(3), the maximum allowed increase from the reference value is 10 percent before the pump is in the required action range. If an instrument is selected with the reference value at 90 percent of the range of the instrument, the maximum reading before the pump is in the required action range is 99 percent of the instrument range, which is still within the calibrated range of the instrument. Since digital instrumentation accuracy is independent of the reading relative to the range of the instrument, the percentage error does not change as a result of expanding the usage range of the instrument. As a result, the pump condition is assessed with the same accuracy with the expanded range of usage.

Code Case OMN-6 allows this option, and has been identified by the NRC as acceptable in RG 1.192. However, currently OMN-6 is applicable to the ASME OM Code 1990 Edition through ASME OMb Code 1997 Addenda.

3.3.4 Licensee's Proposed Alternative Testing

The licensee requests relief from the digital instrument range requirements of paragraph ISTB-3510(b)(2), for unspecified instruments in the licensee's IST program.

3.3.5 Evaluation of Pump Relief Request P-RR3

Paragraph ISTB 3510(b)(2) requires that the reference value of digital instruments not exceed 70 percent of the calibrated range of the instrument. The ASME OM Code Case OMN-6, allows owners to use digital instruments such that the reference value does not exceed 90 percent of the calibrated range of the instrument. The Code Case OMN-6 is applicable to OM Code 1990 through OMb Code 1997, therefore, relief is required to implement Code Case OMN-6 with the OM Code 2001 Edition through 2003 Addenda.

This Code Case was written to allow owners additional flexibility, since 70 percent was based on previous ASME Code, Section XI, requirements for pressure testing equipment, and to ensure that if readings were in the required action range, they could be read. The licensee has proposed that digital instruments shall be selected such that the measured parameter does not exceed the calibrated range of the instrument.

The licensee proposed use of Code Case OMN-6, "Alternate Rules for Digital Instruments," along with OM Code 2001 Edition through 2003 Addenda. The NRC issued RG 1.192,

"Operation and Maintenance Code Case Acceptability, ASME OM Code." This RG lists the OM Code Cases that the NRC staff finds acceptable for licensees to implement in their IST program. In particular, the NRC staff accepted Code Case OMN-6 without any condition, via this RG 1.192. On this basis, the NRC staff finds that the licensee's alternative provides an acceptable level of quality and safety.

3.3.6 Conclusion

The proposed alternative to the Code digital instrument requirements for the unspecified instrument is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the alternative provides an acceptable level of quality and safety.

4.0 CONCLUSION

The DCPP Relief Requests P-RR1, P-RR2, and P-RR3 have been reviewed by the NRC staff and based on the above evaluation, the NRC staff has concluded that the licensee's relief requests are authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the proposed alternatives provide an acceptable level of quality and safety.

5.0 REFERENCES

Code of Federal Regulations, "Energy," Part 50, "Domestic Licensing of Production and Utilization Facilities," Chapter I, Title 10, Section 50.55a, "Codes and standards."

U.S. Nuclear Regulatory Commission, "Guidance on Developing Acceptable Inservice Testing Programs," Generic Letter 89-04, Supplement 1, April 4, 1995.

U.S. Nuclear Regulatory Commission, "Guidance for Inservice Testing at Nuclear Power Plants," NUREG-1482, April 1995.

U.S. Nuclear Regulatory Commission, "Guidance for Inservice Testing at Nuclear Power Plants," NUREG-1482, Revision 1, January 2005.

Letter, Donna Jacobs, Pacific Gas and Electric Company (PG&E) to NRC, "Diablo Canyon Power Plants (DCPP) Units 1 and 2, Inservice Testing (IST) Program - Third Ten-Year Interval and IST Relief Requests," dated March 14, 2005 (TAC Nos. MC6632 and MC6633).

Letter, Donna Jacobs, Pacific Gas and Electric Company (PG&E) to NRC, "Diablo Canyon Power Plants (DCPP) Units 1 and 2, Supplement to Inservice Testing (IST) Program - Third Ten-Year Interval and IST Relief Requests," dated July 26, 2005 (TAC Nos. MC6632 and MC6633).

Principal Contributor: G.S. Bedi

Date: January 30, 2006

Attachment: Summary of Relief Request

Summary of Relief Requests

Diablo Canyon Power Plant Station Units 1 and 2

Related to Third 10-Year Interval Inservice Testing Program

Relief Request No.	10 CFR 50.55a; ASME OM Code 2001 Edition through 2002 and 2003 Addenda	Proposed Alternative	NRC Action	Remarks
P-RR1	ISTB 5121 ISTB 5123	Use of Code Case OMN-9	10 CFR 50.55a(a)(3)(i)	authorized
P-RR2	ISTB 5221 ISTB 5223	Use of Code Case OMN-9	10 CFR 50.55a(a)(3)(i)	authorized
P-RR3	ISTB 3510(b)(2)	Use of Code Case OMN-6	10 CFR 50.55a(a)(3)(i)	authorized

ATTACHMENT

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