Pacific Gas and Electric Company

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PG&E Letter DCL-00-092

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Inservice Inspection Relief Request - Use of ASME Code Case N-616

Dear Commissioners and Staff:

Pursuant to 10 CFR 50.55a(g)(5)(iii), enclosed is an Inservice Inspection relief request (RR) for Units 1 and 2 to use ASME Code Case N-616, Alternative Requirements for VT-2 Visual Examination of Class I, 2, and 3 Insulated Pressure-Retaining Bolted Connections, Section XI, Division 1.

The 1989 Edition, Article IWA-5000, paragraph IWA-5242(a), requires that for systems borated for the purpose of controlling reactivity, the insulation shall be removed from pressure retaining bolted connections for visual examination VT-2. ASME Code Case N-616 states that when corrosive resistant bolting material that is used has a chromium content greater than or equal to 10 percent, it is permissible to perform the VT-2 examination without insulation removal.

PG&E requests that the NRC assign a medium priority and approve this RR prior to the potential need during piping examinations to be performed during the Unit 2 tenth refueling outage, which is currently scheduled to begin May 1, 2001; and if possible prior to the Unit 1 tenth refueling outage, which is currently scheduled to begin October 8, 2000.

Sincerely,

David H. Oatley

RGN-001

A047

cc: Steven D. Bloom
Ellis W. Merschoff
David L. Proulx
State of California
Diablo Distribution

Enclosure

DDM/469/A0505784

INSERVICE INSPECTION (ISI) RELIEF REQUEST #PRS-6

Pressure Test Requirement for Which Relief is Requested

Removal of the insulation from Classes 1, 2 and 3 pressure retaining bolted connections to perform VT-2 visual examination, when the bolting material is resistant to boric acid degradation.

ASME Section XI Code Requirements

1989 Edition, Article IWA-5000, paragraph IWA-5242(a), requires that for systems borated for the purpose of controlling reactivity, the insulation shall be removed from pressure retaining bolted connections for visual examination VT-2.

Code Requirement from Which Relief is Requested

Relief is requested from removal of insulation at bolted connections for visual examination VT-2, when the bolting material is resistant to boric acid degradation.

Basis for Relief Request

ASME Code Case N-616 states that when corrosive resistant bolting material that is used has a chromium content greater than or equal to 10 percent, such as SA-564 Grade 630 H1100, SA453 Grade 660, SB-637 UNS N07718, or SB-637 UNS N07750, it is permissible to perform the VT-2 examination without insulation removal. The similar corrosion resistance of 410 series stainless steels (such as SA-193 B 6) has been demonstrated in EPRI Reports NP-5769 and TR-104748.

PG&E has invested significant resources of material, time, and radiation exposure to replace originally installed ASTM A193 Grade B7 steel bolting material with SA453 Grade 660 and SA564 Grade 630 corrosion resistant bolting at nearly all locations in Class 1 borated systems, and most locations in Class 2 systems. Table 1 (attached) lists the remaining insulated connections having low alloy or carbon steel bolting as of April 7, 2000. PG&E expects to install corrosive resistant bolting material at many of these remaining locations in the future, and after such installation, this request would extend to those locations as well.

INSERVICE INSPECTION RELIEF REQUEST #PRS-6

Proposed Alternative

PG&E will implement ASME Code Case N-616 for performance of VT-2 visual examination at all of the locations where corrosive resistant bolting is installed, without removal of the insulation.

The following restrictions will apply to those locations where this relief is used:

1) A four hour hold at system normal operating pressure will be utilized prior to examination.

2) This relief will not apply to:
   a. A453 Grade 660 bolting that is preloaded to 85 percent of yield or greater.
   b. Bolts made from A193 Grade B6 material (Grade 410 Stainless Steel) tempered below 1100° F.
   c. Bolts made from SA 564 Grade 630 material that were not hardened to H1100 condition.
   d. UNS-S66286 (previously known as A286, also known as AISI 660) bolting that is preloaded to greater than 100,000 psi.

If evidence of leakage is detected at locations where corrosive resistant bolting material is used, either by discovery of active leakage or evidence of boric acid crystals, the insulation shall be removed and the bolted connection shall be reexamined and, if necessary, evaluated in accordance with the corrective measures of subarticle IWA-5250.

Justification for Granting of Relief

Pressure tests are conducted at nominal operating pressure with a hold time of 4 hours in accordance with Code Cases N-498-1 and N-416-1, approved for use at Diablo Canyon Power Plant (DCPP) via NRC Safety Evaluations dated May 1, 1998, and June 14, 1995, respectively. The mechanical joints in systems are not subjected to excessively high pressures formerly associated with hydrostatic tests, and thus are not susceptible to leakage initiated from stress to the joint caused by the abnormally high hydrostatic test pressures.

PG&E has invested considerable resources in replacing original steel bolting with corrosive resistant bolting material that is not subject to degradation from boric acid. Corrosive resistant bolting has been in service for many years in DCPP systems and there have not been any incidents of corrosion of these materials.

INSERVICE INSPECTION RELIEF REQUEST #PRS-6

Justification for Granting of Relief, continued

Removing and reinstalling insulation, including erection and removal of scaffolding when necessary to provide access, would require significant time and radiation exposure to facilitate examination for a condition which experience throughout the industry has shown to be very unlikely to occur.

Removing and reinstalling insulation on bolted connections in systems at high temperature during pressurization, as would be required by Section XI absent ameliorating Code Cases, also poses an unnecessary physical hazard to maintenance personnel. Insulation design was not intended to accommodate removal with the systems in service at temperature.

The use of corrosive resistant bolting material in pressure retaining bolted connections, and the proposed use of Code Case N-616 for visual examination VT-2 without removal of insulation at those connections in accordance with PG&E's proposed alternative provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(a)(3)(i). This relief request is similar to one granted for Union Electric Company Callaway Plant on July 30, 1999.

This request does not affect examination procedures for the remaining connections having noncorrosive resistant steel bolting material (itemized in Table 1), which require VT-2 examination at pressure followed by insulation removal and reexamination when the joint is not pressurized as required by Code Case N-533-1, approved for use at DCPP in NRC Safety Evaluation dated March 16, 2000.

Implementation Schedule

This relief request will be implemented during the DCPP Units 1 and 2 second ISI intervals.

This new request is based on the 1989 Edition, Section XI, Code requirements and Code Case N-616, approved May 7, 1999.

Table 1

Insulated connections using carbon steel bolting as of April 7, 2000

Unit 1	Unit 2
Class 1:	
SI-1-8879A	CVCS-2-8166
SI-1-8879B	SI-2-8956A
SI-1-8879C	SI-2-8956B
SI-1-8956C	SI-2-8956D
RHR-1-8701	RHR-2-8701

Class 2:

Unit 1		Unit 2	
SI-1-8809A	SI-1-8809B	SI-2-8981	SI-2-8804B
RHR-1-8741	RHR-1-8716A	SI-2-8809A	SI-2-8809B
RHR-1-8716B	RHR-1-8700A	RHR-2-8741	RHR-2-8716A
RHR-1-8700B	RHR HX 1-1	RHR-2-8700A	RHR-2-8700B
RHR HX 1-2	RHR Pp 1-1	RHR-2-8726A	RHR-2-8728A
RHR Pp 1-1 Drain Flange		RHR-2-8728B	RHR-2-8726B
RHR-1-8728A	RHR Pp 1-2	RHR-2-8724B	RHR HX 2-1
CVCS-1-8146		RHR HX 2-2	CVCS-2-8146
		CVCS-2-8147	