July 14, 2000

Mr. Gregory M. Rueger
Senior Vice President and General Manager
Pacific Gas and Electric Company
Diablo Canyon Nuclear Power Plant
P. O. Box 3
Avila Beach, CA 93424

SUBJECT: SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN REQUESTS FOR RELIEF NDE-13.2.R9, NDE-15.2R9 AND NDE-33.2R9 FOR DIABLO CANYON, UNIT 2 (TAC NO. MA7814)

Dear Mr. Rueger:

By letter dated December 17, 1999, Pacific Gas and Electric Company submitted its requests for relief NDE-13.2.R9, NDE-15.2R9 and NDE-33.2R9, from the American Society of Mechanical Engineers Code Section XI requirements, for the second 10-year interval for Diablo Canyon Power Plant, Unit 2 Inservice Inspection Program. The staff has reviewed and evaluated the information provided in the relief request and has considered the impracticality of performing the required testing and the burden on the licensee if the requirements were imposed. The staff concludes that the relief requests as evaluated by the enclosed safety evaluation provides reasonable assurance of structural integrity of the subject components in the licensee's requests for relief. The staff has determined that granting relief pursuant to 10 CFR 50.55a (g)(6)(i) for the remainder of the second 10-year inservice inspection interval is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest. In making this determination, the staff has considered the impracticality of performing the required testing and the burden on the licensee if the requirements were imposed.

Sincerely,

/RA/

Stephen Dembek, Chief, Section 2
Project Directorate IV and Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-323

Enclosure: Safety Evaluation

cc w/encl: See next page

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Sincerely
/RA/
Stephen Dembek, Chief, Section 2
Project Directorate IV and Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No: 50-323

Enclosures: 1. Safety Evaluation
2. Table of relief requests
3. INEEL Technical Letter Report

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE INSERVICE INSPECTION PROGRAM

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT, UNIT NO. 2

DOCKET NO. 50-323

1.0 INTRODUCTION

By letter dated December 17, 1999, Pacific Gas and Electric Company (PG&E or the licensee) submitted requests for relief from the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code Section XI requirements for the second ten-year interval for the Diablo Canyon Power Plant (DCPP), Unit 2 Inservice Inspection (ISI) Program.

2.0 BACKGROUND

Inservice inspection of the ASME Code Class 1, 2, and 3 components is performed in accordance with Section XI of the ASME B&PV Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). The Code of Federal Regulations 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the U.S. Nuclear Regulatory Commission's (NRC's) staff, if (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The Code of record for the Diablo Canyon, Unit 2, second 10-year ISI interval is the 1989 Edition of the ASME Code.

3.0 EVALUATION

The NRC, with technical assistance from Idaho National Engineering and Environmental Laboratory (INEEL), has reviewed the information concerning the ISI program requests for relief NDE-13.2.R9, NDE-15.2R9, and NDE -33.2R9 submitted by the licensee. The staff adopts the evaluations and recommendations for granting relief contained in the Technical Letter Report (TLR) prepared by INEEL (Attachment 1 to this SE). Attachment 2 lists each relief request and the status of approval.

For the Diablo Canyon, Unit 2, relief is granted from the inspection requirements which have been determined to be impractical to perform. The ISI program requests for relief are granted for the second 10-year inspection ISI interval, which began on June 1, 1996, for Diablo Canyon, Unit 2.

4.0 CONCLUSION

The Diablo Canyon, Unit 2, ISI program requests for relief from the Code requirements have been reviewed by the staff with the assistance of its contractor, INEEL. The TLR provides INEEL's evaluation of these relief requests. The staff has reviewed the TLR and adopts the evaluations and recommendations for granting relief. A summary of the relief request determinations is presented in Attachment 2.

The staff concludes that the relief requests as evaluated by this safety evaluation provides reasonable assurance of structural integrity of the subject components in the licensee’s requests for relief. The staff has determined that granting relief pursuant to 10 CFR 50.55a (g)(6)(i) is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest. In making this determination, the staff has considered the impracticality of performing the required testing and the burden on the licensee if the requirements were imposed.

Attachments: 1. Technical Letter Report
2. Table - Summary of Relief Requests

Principal Contributor: Tom McLellan

Date: July 14, 2000

TECHNICAL LETTER REPORT
ON SECOND 10-YEAR INTERVAL INSERVICE INSPECTION
REQUESTS FOR RELIEF
FOR
PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON, UNIT 2
DOCKET NUMBER: 50-323

1. INTRODUCTION

By letter dated December 17, 1999, the licensee, Pacific Gas and Electric Company, submitted requests for relief from the requirements of the ASME Code, Section XI, for Diablo Canyon, Unit 2. These relief requests are for the second 10-year inservice inspection (ISI) interval. The Idaho National Engineering and Environmental Laboratory (INEEL) staff's evaluation of the subject requests for relief is in the following section.

2. EVALUATION

The information provided by Pacific Gas and Electric Company in support of the requests for relief from Code and Augmented Examination requirements has been evaluated and the bases for disposition are documented below. The Code of record for the Diablo Canyon, Unit 2, second 10-year ISI interval, which began June 1, 1996, is the 1989 Edition of Section XI of the ASME Boiler and Pressure Vessel Code.

2.1 Request for Relief No. NDE-13.2R9, Examination Category B-J, Item No. B9.21 Circumferential Welds Less than NPS 4

Code Requirement: Examination Category B-J, Item B9.21 requires 100% surface examination of circumferential welds in pressure-retaining piping less than NPS 4 during each inspection interval, as defined by Figure IWB-2500-8.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee has requested relief from performing the surface examination to the extent required by the Code for circumferential pipe Weld WIB-408.

Licensee's Basis for Requesting Relief (as stated):
"Design of the pipe welds limits access for surface examination due to Code identification bands or pipe supports welded to the pipe. Redesign and modification of the support or removal of the Code identification plate would be required to provide additional access.

"The pipe weld designs limit full surface examination due to the welded support or Code ID plate obstructions. Surface examination was performed on the entire accessible examination area and visual examination is conducted as required by Code Category B-P. This partial surface exam combined with the visual examinations provide continued assurance of the welds integrity. The redesign and modification necessary to provide further access is impractical in accordance with 10 CFR 50.55a(g)(5)(iii)."

Licensee's Proposed Alternative Examination (as stated):
"All accessible areas of the circumferential pipe welds were completely examined as required, using liquid penetrant examination methods and visual examination is conducted during pressure test per Code Category B-P."

Evaluation: The Code requires 100% surface examination of the subject circumferential piping weld. However, due to a welded pipe support and Code identification plate, complete surface examination coverage to the extent that is specified by the Code, is not achievable. To complete the examination to the extent required by the Code, the licensee would have to redesign and modify the subject piping support and/or Code ID Plate. Imposition of the coverage requirements would result in a considerable burden on the licensee.

For the subject Item B9.21 weld, the licensee has achieved a significant portion (88%) of the Code-required surface examination. Based upon the surface examination coverage obtained, it is concluded that significant patterns of degradation would have been detected, and reasonable assurance of the structural integrity of this circumferential weld is provided.

Considering the impracticality of meeting the Code requirements for the subject examination area, and the reasonable assurance provided by the examination that was completed, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i) for the subject welds.

2.2 Request for Relief No. NDE-15.2R9, Examination Category B-J, Item B9.40, Pressure Retaining Socket Welds

Code Requirement: Examination Category B-J, Item Number B9.40 requires a surface examination on essentially 100% of weld length as defined by Figure IWB-2500-8.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee has requested relief from performing the surface examination to the extent required by the Code for pipe socket Weld WIB-870A.

Licensee's Basis for Requesting Relief (as stated):
"Design of certain socket welds limits access for surface examination due to the presence of physical obstructions such as welded supports, Code nameplates, adjacent piping, or structures. These conditions or combination of conditions may physically prevent access to portions of the required examination area.

"The design of access provisions for the welds listed above limit full surface examination of the welds. Surface examination was performed on the entire accessible examination area and visual examination is conducted as required by Code Category B-P. This partial surface exam combined with the visual examinations provide continued assurance of the welds integrity. The redesign and modification necessary to provide further access is impractical in accordance with 10 CFR 50.55a(g)(5)(iii)."

Licensee's Proposed Alternative Examination (as stated):

"All accessible areas of the pipe socket welds were completely examined as required, using liquid penetrant examination methods and visual examination is conducted during pressure test per Code Category B-P."

Evaluation: The Code requires 100% surface examination of the subject pipe socket weld. However, due to physical obstructions including pipe supports, Code Identification plate and adjacent piping, complete surface examination coverage to the extent that is specified by the Code, is not achievable. To complete the examination to the extent required by the Code, the licensee would have to redesign and modify the piping supports, Code ID Plate and/or adjacent piping. Imposition of the Code coverage requirements would result in a considerable burden on the licensee.

For the subject Item B9.40 weld, the licensee has achieved a significant portion (81%) of the Code-required surface examination. Based upon surface examination coverage obtained, it is concluded that significant patterns of degradation would have been detected, and reasonable assurance of the structural integrity of this socket weld is provided.

Considering the impracticality of meeting the Code requirements for the subject examination area, and the reasonable assurance provided by the examination that was completed, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i) for the subject welds.

2.3 Request for Relief No. NDE-33.2R9, Class 2 Systems, Circumferential Pipe Welds in Containment Spray Lines.

Augmented Examination Requirement: The licensee's second 10-year interval Inservice Inspection Program Plan includes the volumetric examination of an augmented sample of thin-walled piping in the residual heat removal (RHR), containment heat removal (CHR), and emergency core cooling (ECC) systems.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the augmented volumetric examination of circumferential containment spray piping Welds WIC- 264A and WIC-264B.

Licensee's Basis for Requesting Relief (as stated):
"Design of the pipe welds limits access for volumetric examination due to the as-welded crown reinforcement surface condition which limits circumferential scans from the weld crown. Grinding the weld crown of these thin wall welds would be required to provide additional access, which could unacceptably reduce the minimum wall thickness.

"The pipe weld designs limit full volumetric examination due to the weld crown reinforcement which limits circumferential scans from the weld surface. Volumetric examination was performed on the entire accessible examination area and visual examination is conducted as required by Code Category C-H. This partial volumetric exam combined with the visual examinations provide continued assurance of the welds integrity. The redesign and modification necessary to provide further access is impractical in accordance with 10 CFR 50.55a(g)(5)(iii)."

Licensee's Proposed Alternative Examination (as stated):
"All accessible areas of the containment spray pipe welds were completely examined as required, using ultrasonic volumetric examination methods and visual examination is conducted during pressure test per Code Category C-H."

Evaluation: The augmented examination requirements committed to by the licensee include 100% volumetric examination of the subject thin-walled containment spray piping circumferential welds. These welds are to be examined in accordance with ASME Section XI ultrasonic requirements. However, due to the pipe weld configuration (weld crown reinforcement), complete volumetric examination coverage to the extent that is specified by the Code requirements, is not achievable. To complete the examination to the extent required by the Code, the licensee would have to redesign and/or modify the subject welds/piping. Imposition of the augmented examination requirements would result in a considerable burden on the licensee.

For the subject welds, the licensee has achieved a significant portion (85%) of the required volumetric examinations. Based upon volumetric examination coverages obtained, it is concluded that significant patterns of degradation would have been detected, and reasonable assurance of the structural integrity of the subject thin-walled containment spray piping welds is provided.

Considering the impracticality of meeting the augmented requirements for the subject examination areas, and the reasonable assurance provided by the examinations that were completed, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i) for the subject welds.

3. CONCLUSION

The INEEL staff evaluated the licensee's submittal and concludes that certain inservice examinations cannot be performed to the extent required by the Code at the Diablo Canyon, Unit 2. The INEEL staff concludes that for Request for Relief Nos. NDE-13.2R9, NDE-15.2R9, and NDE-33.2R9 the Code/Augmented Examination requirements are impractical to perform to the extent required, and that the examinations completed by the licensee provide reasonable assurance that significant patterns of degradation would have been detected. Therefore, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

Diablo Canyon, Unit 2
Second 10-Year ISI Interval

SUMMARY OF RELIEF REQUESTS

Relief Request Number	INEEL TLR Sec.	System or Component	Exam Category	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Disposition
NDE-13.2R9	2.1	Class 1 Piping	B-J	B9.21	Piping less that NPS 4	Surface	Partial surface examination be found acceptable	Granted 10 CFR 50.55a(g)(6)(i)
NDE-15.2R9	2.2	Class 1 Piping	B-J	B9.40	Piping socket welds	Surface	Partial surface examination be found acceptable	Granted 10 CFR 50.55a(g)(6)(i)
NDE-33.2R9	2.3	Class 2 Piping	Augmented Exam.	NA	Containment spray thin walled circumferential piping welds	Volumetric	Partial volumetric examination be found acceptable	Granted 10 CFR 50.55a(g)(6)(i)