



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE FIRST TEN YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN

REQUEST FOR RELIEF

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT

DOCKET NOS. 50-275 AND 50-323

1.0 INTRODUCTION

The Technical Specifications for Diablo Canyon Nuclear Power Plant, Units 1 and 2 (DCPP) state that the inservice inspection (ISI) of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel 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). Section 50.55a(a)(3) of Title 10 of the Code of Federal Regulations states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, 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 difficulties 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 preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection 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 ten-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) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for DCPP for the first 10-year ISI interval is the 1977 Edition through Summer 1978 Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME



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Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed. In a letter dated April 18, 1995, Pacific Gas and Electric Company (PG&E) submitted to the NRC its first ten-year interval inservice inspection program plan requests for relief regarding internal surface examinations of residual heat removal suction isolation valve nos. 8701 and 8702 for DCPD.

2.0 EVALUATION AND CONCLUSIONS

The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of its first ten-year interval ISI program plan requests for relief regarding internal surface examinations of the residual heat removal suction isolation valve nos. 8701 and 8702 for DCPD.

Based on the information submitted, the staff adopts the contractor's conclusions and recommendations presented in the attached Technical Letter Report. The staff concludes that the licensee's proposed alternative is equivalent to the requirements of Examination Category B-M-2, Inspection Item B12.50 of the 1989 Edition of the ASME Code. This Code edition has been approved for general use by incorporation into 10 CFR 50.55a and is an acceptable alternative to the Code of record. Therefore, the licensee's use of the requirements of Examination Category B-M-2, Item B12.20, of the 1989 Code Edition is approved, pursuant to 10 CFR 50.55a(g)(4)(iv), provided that all associated requirements of the 1989 Code Edition are met.

Attachment: Technical Letter Report

Principal Contributor: T. McClellan

Date: July 6, 1995

Attachment

TECHNICAL LETTER REPORT ON THE
FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION
REQUEST FOR RELIEF REGARDING
INTERNAL VISUAL EXAMINATION OF VALVES 8701 AND 8702
FOR
PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2
DOCKET NUMBERS: 50-275 AND 50-323

1.0 INTRODUCTION

In a letter dated April 18, 1995, the licensee, Pacific Gas and Electric Company (PG&E), submitted a request for relief regarding visual examination of the internal surfaces of valves 8701 and 8702 (residual heat removal (RHR) suction isolation valves). This request for relief is applicable for the first 10-year inservice inspection (ISI) interval at Diablo Canyon Nuclear Power Plant, Units 1 and 2 (DCPP). The Idaho National Engineering Laboratory (INEL) staff has evaluated the subject request for relief in the following section.

2.0 EVALUATION

The Code of record for the DCPP first 10-year ISI interval is the 1977 Edition through Summer 1978 Addenda (77S78). The information provided by the licensee in support of the request for relief has been evaluated and the basis for granting relief is documented below.

Request for Relief: Examination Category B-M-2, Item B12.40 Visual Examination of Valve Internals

Code Requirement: Table IWB-2500-1, Examination Category B-M-2, Item B12.40 requires a VT-1 visual examination of the internal surfaces of one valve of each group of valves each inspection interval.

Licensee's Code Relief Request: Relief is requested from the Code-required VT-1 visual examination of the internal surfaces of valves 8701 and 8702 during the first 10-year inspection interval.

Licensee's Basis for Requesting Relief (as stated):

"Performing the required visual examination would require disassembly of the valve resulting in an undue burden with no compensating increase in safety. An attempt was made to perform the inspection using a videoprobe inserted through the cut open vent and drain lines closest in proximity to valve 8701 during the last refueling outage. This attempt was unsuccessful due to the very limited access port and inability to move the probe in the main run pipe. Access to valve 8702 is even more limited due to the higher radiation area inside the shield wall.



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"Valves 8701 and 8702 have never been opened for maintenance and they are not expected to require any maintenance during 1R7 or 2R7, the seventh and last refueling outage in the first 10-year ISI interval for each unit.

"Since these valves are in the RHR suction line, they can only be disassembled with the reactor core offloaded, and thereby constitute a high impact on the refueling outage critical path. Additionally valve 8702 is immediately adjacent to Reactor Coolant Loop 4. During the last refueling outage, radiation dose rates in the area ranged from 20 to over 100 mR per hour. At valve 8701, which is outside the biological shield wall, rates were still 16 to over 60 mR per hour due to the valve being in the very recently used RHR suction line.

"Industry and PG&E experience with these valves have been excellent and continued excellent service performance is anticipated.

"Compliance with the Code requirement to visually examine the interior of valve 8701 or 8702 imposes an undue burden with no compensating benefit in quality or safety. Later approved Editions of ASME Code Section XI only require the examination when the valves are disassembled in the course of maintenance work. Again, these valves have never been opened and no such maintenance is anticipated."

Licensee's Proposed Alternative (as stated):

"If either valve 8701 or 8702 is disassembled for maintenance, the VT-1 examination of the internal surface will be performed to meet the Section XI requirement."

Evaluation: The Code of record (77S78) at DCPD requires a VT-1 visual examination of valve body internal surfaces. The disassembly of a valve to gain access for the examination requires a significant amount of manpower, time, and radiation exposure. As a result, later editions of the Code were modified to eliminate the impracticality of disassembling a valve for the sole purpose of performing the VT-1 visual examination. In the 1989 Edition of Section XI, the visual examination is required only when a valve is disassembled for maintenance, repair, or other inspection. The licensee's proposed alternative is equivalent to the requirements of Examination Category B-M-2, Inspection Item B12.50, of the 1989 Code. Since this Code edition has been approved for general use by incorporation into the regulations, it is considered an acceptable alternative to the requirements of the Code of record.

3.0 CONCLUSION

Based on the above evaluation, the INEL staff recommends that use of the requirements of Examination Category B-M-2, Item B12.20, of the 1989 Code be approved, pursuant to 10 CFR 50.55a(g)(4)(iv).

