



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN, REVISIONS 0 AND 3  
AND ASSOCIATED REQUESTS FOR RELIEF  
SOUTHERN CALIFORNIA EDISON COMPANY  
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3  
DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

The Technical Specifications for San Onofre Nuclear Generating Station, Units 2 and 3 state that the inservice inspection 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 the San Onofre Generating Station, Units 2 and 3 second 10-year inservice inspection (ISI) interval is the 1989 Edition. 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 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 letters dated October 4, 1993, and April 17, 1995, Southern California Edison Company submitted to the NRC its Second Ten-Year Interval Inservice Inspection Program Plan, Revisions 0 and 3 respectively and associated requests for relief for San Onofre Nuclear Generating Station, Units 2 and 3.

## 2.0 EVALUATION

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 Second Ten-Year Interval Inservice Inspection Program Plan, Revisions 0 and 3 and associated requests for relief for San Onofre Nuclear Generating Station, Units 2 and 3. However, this review is based on the licensee's Revision 3, of the second ten-year interval inservice inspection program for San Onofre Nuclear Generating Station, Units 2 and 3, because Revision 3 supersedes prior revisions.

Based on the information submitted, the staff adopts the contractor's conclusions and recommendations presented in the attached Technical Evaluation Report. The staff has concluded that no deviations from regulatory requirements or commitments were identified in the San Onofre Nuclear Station, Units 2 and 3 Second Ten-Year Interval Inservice Inspection Program Plan, Revision 3.

In addition, the staff has concluded that for requests for relief 3.3.3, 3.3.4 (Part 1) and 3.3.4 (Part 2) the examinations required by the Code are impractical and that the licensee's proposed alternatives to Code requirements provide reasonable assurance of operational readiness. Therefore, relief is granted for requests for relief 3.3.3, 3.3.4 (Part 1) and 3.3.4 (Part 2) pursuant to 10 CFR 50.55a(g)(6)(i) as requested.

In request for relief 3.3.2, the licensee proposes to perform 100 percent ultrasonic examination of the subject welds from the inside piping surface in lieu of the Code-required outside diameter (OD) surface examination. The purpose of the Code-required surface examination is to examine the welds on the OD surface of the piping for surface-connected cracks. If the ultrasonic examination technique is demonstrated to be as capable of detecting OD surface-connected weld cracks as the Code-required surface examination process, then the ultrasonic examination technique satisfies the objective of this Code requirement and will ensure weld integrity. The proposed alternative would then provide an acceptable level of quality and safety. Therefore, the alternative contained in request for relief 3.3.2 is authorized

pursuant to 10 CFR 50.55a(a)(3)(i), once the licensee has demonstrated that the ultrasonic examination technique satisfies the Code objective as discussed above.

In request for relief 3.4, the licensee proposes to use the Auto/Machine gas tungsten arc welding (GTAW) Temperbead technique specified in the 1992 Code Edition, Section XI, Paragraph IWA-4500 in lieu of the Shielded Metal Arc Welding process required by the 1989 Code Edition, Section XI. The Auto/Machine GTAW permits greater control of the process variables and therefore allows production of a higher quality weld than the Shielded Metal Arc Welding process. The staff concludes that the proposed alternative provides an acceptable level of quality and safety. Therefore, the alternative contained in request for relief 3.4 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) as requested.

In request for relief 3.3.1, the licensee proposes to defer all Item B1.30, B.90, and B3.100 examinations until the third period of the second 10-year interval when the rest of the reactor pressure vessel welds are scheduled to be inspected. The ASME Code requirement for these welds is to examine them during the first period of the second 10-year interval. Performing the examination as required by the Code will result in increased exposure to personnel. The objective of the Code-required examination schedule is to examine the welds every 10 years (as adjusted in accordance with IWA-2430) to assure operational readiness. The operational readiness of the welds was confirmed during the previous examination and imposing the Code-required examination schedule would result in examining the welds twice in a 3-year period, which exceeds the objective of the Code. The staff will require that the interval between examinations be no more than 10 years (except where the length of a 10-year interval is adjusted in accordance with IWA-2430), thus meeting the objective of the Code. The staff concludes that results of the previous examination, combined with the interval requirement discussed above provides reasonable assurance that the alternative schedule proposed by the licensee will meet the Code objective of operational readiness. The staff further concludes that compliance with the specified requirements of the Code would result in hardship without a compensating increase in the level of quality and safety. Therefore, the alternative contained in request for relief 3.3.1 is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) provided that there is not more than 10 years between examinations, except where the length of a ten-year interval is adjusted in accordance with IWA-2430.

Requests for relief 3.3.5 and 3.3.6 are denied, because the technical information provided does not support a determination of impracticality and the proposed alternatives do not provide a reasonable assurance of operational readiness.

### 3.0 CONCLUSION

Based on the information provided by the licensee, the staff has determined that, with respect to requests for relief 3.3.3, 3.3.4 (Part 1), and 3.3.4 (Part 2), the testing requirements for the subject components are impractical. Pursuant to 10 CFR 50.55a(g)(6)(i), the staff has concluded that granting of

relief is authorized by law, will not endanger life, property or the common defense and security, and is otherwise in the public interest. This relief has been granted considering the burden that would result if the requirements were imposed on the facility. The staff has determined that the proposed alternatives for requests for relief 3.3.2 and 3.4 are authorized pursuant to 10 CFR 50.55a(a)(3)(i) in that they provide an acceptable level of quality and safety. The staff has determined that with respect to request for relief 3.3.1, compliance by Southern California Edison Company would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, and therefore the proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

Attachments: 1. Summary of Relief Requests  
2. Technical Evaluation Report

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TABLE 1  
SUMMARY OF RELIEF REQUESTS

Relief Request Number	System or Component	Exam Category	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
3.3.1	Reactor Vessel	B-A B-D	B1.30 B3.90 B3.100	Shell-to-Flange Welds Nozzle-to-Vessel Welds Nozzle Inner Radius Sections	Volumetric examination of 50% during first period	Deferral of examinations to third period	Authorized Conditionally
3.3.2	Class 1 Piping Systems	B-J	B9.11 B9.12	Circumferential and Longitudinal Welds	Volumetric and surface examination	Volumetric exam of 100% of weld volume	Authorized Conditionally
3.3.3	Class 1 Valves	B-M-1	B12.40	Pressure-retaining welds in valve bodies	Volumetric examination	Surface, VT-3, and VT-2 Visual examinations	Granted
3.3.4 (Part 1)	Pressurizer	B-D	B3.110	Nozzle-to-Vessel Welds	Volumetric examination	Perform volumetric exam to the extent practical	Granted
3.3.4 (Part 2)	Steam Generator	B-D	B3.130	Nozzle-to-Vessel Welds	Volumetric examination	Perform volumetric exam to the extent practical	Granted
3.3.5		IWA-2312		Certification and recertification	Use of certified personnel for Code VT-3 visual examinations	Use of non-certified personnel for Code VT-3 visual examinations	Denied
3.3.6	Regenerative Heat Exchanger	C-A C-C F-A	C1.20 C1.30 C3.10 F1.40	Pressure-retaining welds, integral welded attachments, and supports	Volumetric, surface, or visual examinations	None	Denied

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3  
Second 10-Year ISI Interval

TABLE 1  
SUMMARY OF RELIEF REQUESTS

Relief Request Number	System or Component	Exam Category	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
3.4		IWA-4511		Half bead repair welding	Shielded metal arc welding process to perform half bead repair welding	Perform Gas tungsten arc welding	Authorized