



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

ENCLOSURE 1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO THE INSERVICE TESTING PROGRAM AND REQUESTS FOR RELIEF  
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NOS. 2 AND 3  
DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

In general, Technical Specification 4.0.5 for the San Onofre Nuclear Generating Station, Unit Nos. 2 and 3, states that the surveillance requirements for In-service Inspection and Testing of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1, 2, and 3 components shall be applicable as follows: Inservice Inspection of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME 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).

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 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) on the date twelve months prior to the date of issuance of the operating license, subject to the limitations and modifications listed therein. 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.

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 his 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 or property or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that would result if the requirements were imposed.

The licensee, Southern California Edison Company, et al., requested approval

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of a common ISI interval start date of August 18, 1983, for both San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The licensee has also requested that the 1977 Edition, Summer 1979 Addenda of the Code be used for both units.

Based on the September 7, 1982, date of issuance of the operating license for Unit 2, the licensee has prepared the San Onofre Nuclear Generating Station, Unit Nos. 2 and 3, First Ten-Year Interval Inservice Inspection (ISI) Program Plan to meet the requirements of the 1977 Edition, Summer 1979 Addenda of Section XI of the ASME Boiler and Pressure Vessel Code. However, the examination of Class 2 piping welds in the residual heat removal, emergency core cooling, and containment heat removal systems have been determined by the 1974 Edition, Summer 1975 Addenda as required by 10 CFR 50.55a(b)(2)(iv)(A).

The staff, with technical assistance from its contractor, Science Applications International Corporation (SAIC), has evaluated the First Ten-Year Interval Inservice Inspection Program Plan, additional information related to the Program Plan, and the requests for relief from certain ASME Code requirements are determined to be impractical for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3, during the first inspection interval.

## 2.0 EVALUATION

The ISI Program Plan has been evaluated for (a) application of the correct Section XI Code edition and addenda, (b) compliance with examination and test requirements of Section XI, (c) acceptability of the examination sample, (d) compliance with prior ISI commitments made by the licensee, (e) correctness of the application of system or component examination exclusion criteria, and (f) adequate information in support of requests for relief from impractical Section XI Code requirements. The staff has determined that the licensee's ISI Program Plan, with the exception of those requests for relief that are denied, reflects compliance with the requirements listed above.

It is noted that augmented ultrasonic examinations of the bores of the low pressure turbine disc have not been included in the ISI Program. The license should confirm that these examination will be performed as required by NUREG-0712, "Safety Evaluation Report Related to the Operation of San Onofre Nuclear Generating Station, Units 2 and 3."

We concur with the evaluation and recommendation for acceptance, in the attached SAIC Technical Evaluation Report SAIC-84/1664, of the licensee's request for a common ISI interval start date of August 18, 1983 and use of the 1977 Edition, Summer 1979 Addenda of the ASME Section XI Code for both units in lieu of using the 1977 Edition, Summer 1979 Addenda for Unit 2 and the 1980 Edition, Summer 1981 Addenda for Unit 3. The application of the earlier edition and addenda of the Code for both San Onofre Units 2 and 3 will not impact the health and safety of the public.

The information provided by the licensee in support of requests for relief from impractical requirements has been evaluated and the bases for granting relief from those requirements are documented in the attached SAIC Technical

Evaluation Report SAIC-84/1664. We concur with the findings and recommendations contained in the subject report with the exception of Relief Request No. B-7. In that case, the contractor recommended that interim relief be granted with the condition that the licensee either demonstrate that the actual procedure and instrumentation to be used for the proposed examination would detect 0. D. flaws in the existing configuration, or perform the Code-required surface examination. The staff does not agree that relief should be granted because the licensee has not provided sufficient detailed technical justification and has not demonstrated that the ultrasonic testing instrumentation and procedures are capable of detecting 0. D. surface-connected defects. The increase in safety achieved by performing the required surface examination outweighs the impracticalities cited by the licensee. In order for relief to be considered, the licensee must meet the following conditions: (a) additional information must be provided demonstrating that the Code-required surface examination is impractical to perform; (b) the remote volumetric examination must include the entire weld volume and heat affected zone instead of only the inner one-third of the weld; and (c) the ultrasonic testing instrumentation and procedures must be demonstrated to be capable of detecting 0. D. surface-connected defects, in the circumferential orientation, and in laboratory test blocks. The defects in the test blocks should be cracks and not machined notches.

Table 1 presents a summary of the reliefs requested and the status of the requests as determined by the staff.

### 3.0 CONCLUSION

The staff concludes that the San Onofre Nuclear Generating Station, Unit Nos. 2 and 3, First Ten-Year Interval Inservice Inspection Program Plan, with the additional information provided and the specific written relief, constitutes the basis for compliance with 10 CFR 50.55a(g) and Technical Specification 4.0.5 and is therefore acceptable, with the exception of Relief Request B-7, which is denied.

TABLE 1  
SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
B-1	Pressurizer and Steam Generators	B-D	B3.110 and B3.130	Nozzle-to-vessel welds	Volumetric examination	Ultrasonic scan from vessel side only using full V-path technique	Granted
B-4	Class 1 Piping	B-J	B9.31	Branch connection welds greater than 2-inch diameter	Volumetric and surface examinations	100% surface examination and ultrasonic examination from the piping side only using full V-path technique	Relief not required
B-7	Class 1 and Class 2 Piping	B-F	B5.50	Safe end welds	Volumetric and surface examination for B5.50, B9.10, B9.31, C5.21, and C5.22;  Surface examination for B9.20, B9.32, and B9.40	Applicable circ. and long. welds will receive full volumetric examination in lieu of surface and volumetric examination required in Figure IWB-2500-8	Denied
			B9.10	Circ. and long. welds 4-inch NPS and greater			
			B9.20	Circ. and long. welds less than 4-inch NPS			
			B9.30	Branch pipe connection welds NPS greater than 2 inches (B9.31) and NPS 2 inches or less (B9.32)			
		B9.40	Socket welds				
C-F	C5.21 and C5.22	Circ. and long. piping welds over 1/2-inch nominal wall thickness					

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Section 3.1.5.1 of TER	Class 1 Valves	B-M-1	B12.30	Valve body welds	Volumetric and surface examination	External surface examination per IWB-3518.1(d)	Granted with conditions stated in TER
C-1	Steam Generator	C-B	C2.20	Class 2 nozzle-to-vessel welds	Volumetric and surface examinations	Ultrasonic scan from vessel side only using full V-path technique	Granted
C-3	Class 2 Piping	C-F	C5.10, C5.20, C5.30	Longitudinal welds in RHR, ECC, and CHR systems	Volumetric and/or surface examinations of 100% of length of longitudinal weld joint in pipe fittings per 74S75	Volumetric and/or surface examinations of 2.5T of longitudinal weld at the intersecting circumferential weld per 77S79	Relief not required
C-4	Shutdown Cooling Heat Exchangers	C-B	C2.20	Nozzle-to-vessel welds	Volumetric and surface examinations	Surface examination of fillet welds attaching saddle-to-vessel and saddle-to-nozzle	Granted

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C-5 (Unit 3 only)	Class 2 Piping, Pumps, and Valves	C-E	C3.40, C3.70, and C3.100	Integrally welded support attachments	Surface examination per 77S79	Surface examination of welds whose support base material design thickness exceeds 3/4 inch per 74S76	Relief not required