



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
OF THE SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN

REQUEST TO USE ASME SECTION XI CODE CASE N-546

STP NUCLEAR OPERATING COMPANY

SOUTH TEXAS PROJECT, UNITS 1 AND 2

DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION

The Technical Specifications for the South Texas Project, Units 1 and 2 (STP), state that the inservice inspection (ISI) and testing 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). The regulation at 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission, 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 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 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) on the date 12 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 STP for the second 10-year 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.

By letter dated May 13, 1999, the licensee, STP Nuclear Operating Company (STPNOC), requested approval (Relief Request RR-ENG-2-9) for the implementation of the alternative rules of ASME Section XI Code Case N-546 dated August 24, 1995, titled "Alternative Requirements for Qualification of VT-2 Examination Personnel, Section XI, Division 1," pursuant to 10 CFR 50.55a(a)(3)(i) in lieu of the requirements of IWA-2300 to the ISI program for STP.

The staff has reviewed and evaluated the licensee's request and supporting information to use Code Case N-546 as a proposed alternative to the Code requirements for STP.

## 2.0 DISCUSSION

- A. Request for Authorization to Implement Alternatives to Code Requirements Contained in Code Case N-546, "Alternative Requirements for Qualification of VT-2 Examination Personnel, Section XI, Division 1."

Code Requirement: The ASME Code Section XI, 1989 Edition, Subsection IWA-2300, "Qualification of Nondestructive Examination Personnel," requires that all personnel performing VT-2 visual examinations be certified to comparable levels of competency defined in ANSI N45.2.6. The VT-2 visual examination is conducted in accordance with ASME Code, Section XI, paragraph IWA-2212 and subarticle IWA-5240 to locate evidence of leakage from pressure-retaining components, or abnormal leakage from components with or without leakage collection system, as required, during the conduct of pressure testing.

Licensee's Code Relief Request: The licensee has requested approval to implement alternatives to the Code requirements contained in Code Case N-546, which is not yet approved by the NRC by reference in Regulatory Guide (RG) 1.147.

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

As stated in Code Case N-546, plant personnel (e.g., licensed and non-licensed operators, system engineers, testing technicians) with the specified training and plant walkdown experience need not be qualified nor certified to comparable levels of competence in accordance with ANSI N45.2.6. Experience in identifying equipment problems and knowledge of operating conditions will enhance the ability of plant personnel to locate leakage during VT-2 examinations. With the specified four hours of training on Section XI requirements and plant specific procedures for VT-2 examinations, the designated plant personnel will understand how leaks should be identified and documented and be fully capable of performing VT-2 examinations.



Qualifying personnel for VT-2 examinations under Code Case N-546 is less burdensome than qualifying and maintaining the present VT-2 certification. Adopting this Code Case makes it feasible to train more people to perform these tasks. Furthermore, using personnel who are already required to perform functions in the plant will reduce the number of people required to enter into areas that may be radiologically restricted, resulting in fewer plant workers exposed to potential radiation dose and keeping radiation exposure as low as reasonably achievable.

Additionally, use of on-shift personnel will improve the process of returning systems to service. Prompt return of safety systems to service will improve the safety of the plant and the public.

C. Licensee's Proposed Alternative to Code Requirements:

The licensee proposes to implement the Code Case N-546 as an alternative to the requirements of IWA-2300 for qualification of VT-2 visual examination personnel as follows:

- (a) At least 40 hours plant walkdown experience, such as that gained by licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel;
- (b) At least four hours of training on Section XI requirements and plant specific procedures for VT-2 visual examination; and
- (c) Vision test requirements of IWA-2321, 1995 Edition.

D. Licensee's Justification

The licensee stated that in accordance with 10 CFR 50.55a(a)(3)(i), the proposed alternative qualification requirements will provide an acceptable level of quality and safety. The proposed alternative qualifications are identical to those of ASME Section XI Code Case N-546. STPNOC has received NRC approval to use Code Case N-546 for the first Unit 1 and Unit 2 ISI interval.

### 3.0 EVALUATION AND CONCLUSION

The Code requires that VT-2 visual examination personnel be qualified to comparable levels of competency as defined in ANSI N45.2.6. The Code also requires that the examination personnel be qualified for near and far distance vision acuity.

The staff considers the qualification requirements in Code Case N-546 to be comparable to those of the ASME Code, Section XI, paragraph IWA-2300 for VT-2 visual examination personnel. In regard to selection of personnel to conduct the test, the Code Case states that

licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel are eligible due to their plant experience. Typically, these individuals have sound working knowledge of plant components and piping layouts. Hence, they make good candidates for performing VT-2 visual examinations. Furthermore, the licensee follows plant-specific procedures to obtain consistent VT-2 visual examination results even with the varied experience levels and potentially different leakage interpretations by employees performing the VT-2 visual examinations. The Code Case further requires a vision test for examination personnel similar to that of the Code.

On the basis of its review of Code Case N-546, the staff has concluded that the alternatives to the Code qualification requirements for examination personnel will provide an acceptable level of quality and safety in that it will provide adequate leakage detection. Therefore, the licensee's request to implement alternatives contained in Code Case N-546 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the second interval until such time as the Code Case is approved by reference in RG 1.147. At that time, if the licensee intends to continue to implement this Code Case, the licensee must follow all provisions in Code Case N-546 with the limitations issued in RG 1.147, if any.

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Date: July 8, 1999