

June 29, 2001

Mr. William T. Cottle
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - REQUEST FOR RELIEF FROM IMPLEMENTATION OF CONTAINMENT INSPECTION UNDER SUBSECTION IWE OF AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE SECTION XI (TAC NOS. MB0701 AND MB0702)

Dear Mr. Cottle:

By letter dated November 27, 2000, the South Texas Project Nuclear Operating Company (the licensee) submitted relief request RR-ENG-IWE-06 for South Texas Project Units 1 and 2, for the Nuclear Regulatory Commission (NRC) staff approval.

Article IWE-5000 of ASME Code, Section XI, requires that following repair or modification of pressure-retaining boundaries, or replacement of Class MC and Class CC components, VT-2 examination be conducted by examining the accessible external exposed surfaces of pressure-retaining components for evidence of leakage.

The licensee proposes an alternative to performing VT-2 examination. In lieu of VT-2 examination, the licensee will rely on Type B and Type C testing conducted pursuant to 10 CFR Part 50, Appendix J, to identify any evidence of leakage.

The NRC staff reviewed the licensee's relief request. The NRC staff concludes that the licensee has provided alternative examination method which will provide an acceptable level of quality and safety for protecting the containment pressure boundary integrity. Therefore, the proposed alternative is authorized by law pursuant to 10 CFR 50.55a(a)(3)(i) for the remainder of the term of the current operating licenses for South Texas Project Units 1 and 2.

W. Cottle

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The NRC staff's evaluation and conclusions are contained in the enclosed safety evaluation. Should you have questions regarding this safety evaluation, please contact Mr. Mohan C. Thadani, at 301-415-1476.

Sincerely,

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure: Safety Evaluation

cc w/encl: See next page

W. Cottle

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST FOR RELIEF FROM REQUIREMENTS OF AMERICAN SOCIETY OF
MECHANICAL ENGINEERS (ASME)
CONTAINMENT INSERVICE INSPECTION (ISI) REQUIREMENTS
SOUTH TEXAS PROJECT, UNITS 1 AND 2
SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY (STPNOC)
DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION

In the *Federal Register* dated August 8, 1996, (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended its regulations to incorporate by reference the 1992 edition with 1992 addenda of Subsections IWE and IWL of Section XI of the ASME Boiler and Pressure Vessel Code (Code). Subsections IWE and IWL provide the requirements for ISI of Class CC (concrete containment), and Class MC (metallic containment) of light-water cooled power plants. The effective date for the amended rule was September 9, 1996, and it requires the licensees to incorporate the new requirements into their ISI plans and to complete the first containment inspection by September 9, 2001. However, a licensee may propose alternatives to or submit a request for relief from the requirements of the regulation pursuant to 10 CFR 50.55a(a)(3) and (g)(5).

By letter dated November 27, 2000 (Reference 1), STPNOC, the licensee, proposed an alternative to the requirements of Subsection IWE of ASME Section XI (Relief Requests RR-ENG-IWE-06) for its South Texas Project (STP), Units 1 and 2. The NRC's findings with respect to authorizing the alternative or denying the proposed request are discussed in this evaluation.

2.0 EVALUATION OF RR-ENG-IWE-06

2.1 Code Requirements from Which Relief Is Requested:

IWE-5240 of ASME Section XI, 1992 Edition, 1992 Addenda, states that the requirements of IWA-5240 (corrected from IWA-5246 to IWA-5240 in the 1993 Addenda) for visual examination are applicable following repair or modification of pressure-retaining boundaries, or replacement of Class MC and Class CC components. IWA-5240 requires that VT-2 examinations be conducted by examining the accessible external exposed surfaces of pressure-retaining components for evidence of leakage.

The STP requests relief from performing VT-2 examinations in connection with system pressure testing following repair or modification to the pressure-retaining boundaries, or replacement of Class MC and Class CC components under Article IWE-5000.

2.2 Basis for Relief from Code Requirements:

Table IWE-2500-1, Examination Category E-P, specifies 10 CFR Part 50, Appendix J, as the examination method for pressure-retaining components and does not specifically identify application of VT-2 visual examinations. Section 10 CFR Part 50, Appendix J of Title 10 of the *Code of Federal Regulations* (10 CFR) provides requirements for testing as well as leakage criteria. VT-2 visual examinations are required primarily to locate potential sources of water or steam leaks from pressure-retaining components. Appendix J applies pneumatic leakage tests to identify sources of leakages.

2.3 Alternative Examination:

Type B and Type C pressure testing conducted in accordance with 10 CFR Part 50, Appendix J will be performed to identify any leakage from the subject welds in lieu of VT-2 examination under IWA-5240 of ASME Section XI.

2.4 Justification for Granting Relief:

The integrity of the pressure-retaining boundary and Class MC and Class CC components is assured by implementation of the following requirements:

- Requirements for leakage testing:
 - As stated in IWE-5221, repairs or modifications to the pressure-retaining boundary or replacement of Class MC or Class CC components are to be subjected to a pneumatic leakage test in accordance with 10 CFR Part 50, Appendix J.
 - Table IWE-2500-1, Examination Category E-P, requires application of 10 CFR Part 50, Appendix J examination methods for all containment pressure-retaining components.
 - Appendix J provides requirements for testing as well as acceptable leakage criteria.
- Section 10 CFR 50.55a(b)(2)(ix)(E) requires a general visual examination for the containment once each period that would identify any structural degradation that may contribute to leakage.
- Appendix J tests utilize calibrated equipment to provide assurance of leakage rate acceptability.

A VT-2 visual examination will not provide additional assurance of safety beyond that provided by current Appendix J practices. Pressure testing performed in accordance with 10 CFR Part 50, Appendix J provides an acceptable level of quality and safety. Therefore, relief from IWE-5240 is requested in accordance with 10 CFR 50.55a(a)(3)(i).

2.5 Staff Evaluation of RR-ENG-IWE-06:

In lieu of the requirements of ASME Section XI, Paragraph IWA-5240 for the visual examination, VT-2, to be applied following repair, replacement or modification, the licensee proposed to perform Type B and Type C pressure testing in accordance with 10 CFR Part 50, Appendix J to identify any leakage from the subject welds.

In the “Basis for Relief from Code Requirements” and “Justification for Granting Relief” sections, the licensee justified that Table IWE-2500-1, Examination Category E-P, requires only the application of 10 CFR Part 50, Appendix J examination methods for all containment pressure-retaining components. Also, 10 CFR Part 50, Appendix J provides requirements for testing utilizing calibrated equipment to determine acceptability. In addition, 10 CFR 50.55a(b)(2)(ix)(E) requires a general visual examination of the containment each period that would identify any structural degradation that may contribute to leakage. However, the licensee did not provide any description to demonstrate that the implementation of the alternative will meet the requirement of 10 CFR 50.55a(a)(3). In addition, the licensee provided three reasons in its “Justification for Granting Relief”: (1) Table IWE-2500-1, Examination Category E-P identifies the examination method of 10 CFR Part 50, Appendix J and does not specifically identify a VT-2 visual examination, (2) Section 10 CFR Part 50, Appendix J provides requirements for testing as well as acceptable leakage criteria, and (3) Section 10 CFR 50.55a(b)(2)(ix)(E) requires a general visual examination. The NRC staff considered that the first reason merely pointed out an inconsistency in the code, and the second and the third reasons identified existing regulatory requirements without explaining why these requirements provided an acceptable level of quality and safety. As an alternative, the licensee should either (1) conduct a general (or VT-3) visual examination during or after the pressure test on areas affected by the repair/replacement activity if a pressure test is performed for the leak-tight integrity of the pressure boundary, or (2) perform a VT-1 (or detailed) visual examination on areas affected by the repair/replacement activity if a pressure test is deferred. For the second option, the requirements of IWE-5240 shall be met, when the pressure test is performed.

In response to the staff’s concern, the licensee added in the “Alternative Examination” section of the topic relief request (Reference 2) that in addition, a general visual examination of the accessible areas shall be performed during or after the pressure test to ensure the overall integrity of the repaired/replaced component. For any repair or replacement affecting the containment pressure boundary, where a pressure test is deferred or not performed, a VT-1 or detailed visual examination shall be performed to ensure the overall integrity of the repaired/replaced component with the containment.

As discussed above, the NRC staff finds that the alternative examination proposed by the licensee will provide an acceptable level of quality and safety for protecting the containment pressure boundary integrity. On this basis, the NRC staff concludes that the licensee’s alternative coating program is authorized pursuant to 10 CFR 50.55a(a)(3)(i).

3.0 CONCLUSION:

Based on our review of the information provided in the request for relief (Relief Request RR-ENG-IWE-06), the NRC staff concludes that the licensee’s proposed alternative provides

an acceptable level of quality and safety. Therefore, the proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the remainder of the term of the current operating licenses for South Texas Units 1 and 2.

4.0 References:

1. Letter from T. J. Jordan, STP Nuclear Operating Company to NRC, "Request for Relief from ASME Boiler and Pressure Vessel Code Section XI, Subsection IWE-5240 (Relief Request RR-ENG-IWE-06)," dated November 27, 2000.
2. Letter from T. J. Jordan, STP Nuclear Operating Company to NRC, "Amended Request for Relief from ASME Boiler and Pressure Vessel Code Section XI, Subsection IWE-5240 (Relief Request RR-ENG-IWE-06)," dated May 2, 2001.

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