

May 10, 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  
CONTAINMENT INSERVICE INSPECTION (ISI) REQUIREMENTS OF  
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE,  
SECTION XI, (TAC NOS. MA9664 AND MA9665 )

Dear Mr. Cottle:

By letter dated August 1, 2000, as supplemented by letter dated November 21, 2000, the South Texas Project submitted relief request RR-ENG-IWL-02 as an alternative to the requirements of the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code*, Section XI, Subsection IWL.

The licensee proposes alternative visual examination methods to those specified in IWL-2510(a) and IWL-2524.1. Instead of performing VT-3C, VT-1C, and VT-1 examinations, the licensee proposes a general visual examination of accessible areas, and a detailed visual examination of suspect areas.

The regulations require that ISI of certain Code Class MC and CC components be performed in accordance with Section XI of the ASME Code and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (g)(6)(i) of 10 CFR 50.55a.

The Nuclear Regulatory Commission (NRC) staff reviewed the licensee's relief request. The NRC staff concludes that the licensee's proposed alternative visual examination methods provide an acceptable level of quality and safety for ensuring the pressure boundary integrity of the South Texas Project containments. Therefore, the proposed alternative is authorized for the first containment ISI pursuant to 10 CFR 50.55a(a)(3)(i).

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 & Decommissioning  
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

-2-

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Docket Nos. 50-498 and 50-499

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cc w/encl: See next page

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ACCESSION NO.: ML011300229

\*No substantive change from SE

\*\*No legal objection with changes

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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, the Nuclear Regulatory Commission (NRC) amended the *Code of Federal Regulations*, 10 CFR 50.55a, to incorporate by reference Section XI of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code*, 1992 Edition through 1992 Addenda of Subsections IWE and IWL. Subsection IWE provides the requirements for ISI of Class MC (metallic containment components) and the metallic liner of Class CC (concrete containment components). Subsection IWL provides the requirements for ISI of Class CC components.

The regulations require that ISI of certain Code Class MC and CC components be performed in accordance with Section XI of the ASME Code and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (g)(6)(i) of 10 CFR 50.55a. In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility.

By letter dated August 1, 2000, and supplemental letter dated November 21, 2000, the South Texas Project licensee submitted Relief Request RR-ENG-IWL-02, pursuant to 10 CFR 50.55a(a)(3)(i), that proposes an alternative to the requirements of IWL for Units 1 and 2. The NRC's findings with regard to Relief Request RR-ENG-IWL-02 are provided below.

## 2.0 RELIEF REQUEST

The licensee proposes alternative visual examination methods to those specified in IWL-2510(a) and IWL-2524.1. Instead of performing VT-3C, VT-1C, and VT-1 examinations, the licensee proposes a general visual examination of accessible areas, and a detailed visual examination of suspect areas.

The licensee states that, because of the physical size and layout of the South Texas Project concrete containment structures, direct visual examination of the concrete containment surface and anchor assemblies requires extensive use of scaffolding and rigging for compliance with the direct examination distance and minimum illumination requirements of Table IWA-2210-1 for VT-1, VT-1C and VT-3C visual examinations. Consequently, compliance with the maximum direct examination distance and minimum illumination requirements specified in IWA-2210 would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The licensee proposes the following alternate testing:

**IWL-2510:** A general visual examination of concrete surfaces is the proposed alternative to the VT-3C examination specified by IWL-2510. The general visual examination shall be performed in sufficient detail to identify areas of concrete damage or degradation, as defined in ACI 201.1.

For suspect areas, a detailed visual examination and evaluation of examination results will be performed in lieu of a VT-1C examination. Note that L1.12 of Table IWL-2500-1 of the 1998 Edition applies a general visual examination. However, the licensee understands that this is in error and was intended to require a detailed visual examination for suspect areas.

**IWL-2524.1:** Detailed visual examination of anchorage hardware and surrounding concrete is proposed as an alternative to the VT-1 examination specified by IWL-2524.1. Findings under IWL-2524.1(a), (b), and (c) are documented.

### 3.0 EVALUATION

The 1992 Edition and Addenda of the Code, IWL-2510, uses VT-1C and VT-3C to designate visual examinations to be performed on concrete containments. IWL-2524.1 states that a VT-1 visual examination shall be performed on the tendon anchorage hardware, including bearing plates, anchorheads, wedges, buttonheads, shims, and the concrete extending outward a distance of 2 feet from the edge of the bearing plate. Requirements for the visual examination are contained in Subsection IWA-2210 and include minimum illumination, maximum direct examination distance, and procedure demonstration with maximum lower case character height. The requirements for qualification of examination personnel are contained in IWA-2300. As an alternative to VT-1C and VT-3C examinations of IWL-2510, the licensee proposes to perform a general visual examination of the accessible areas and a detailed visual examination of those areas determined to be suspect. As an alternative to the VT-1 examination of IWL-2524.1, the licensee proposes to perform a detailed visual examination. This proposed alternative is consistent with the visual examination requirements of the 1998 Edition of the Code.

In the 1998 Edition of the Code, the requirements for VT-1C and VT-3C were removed and replaced with requirements for general and detailed visual examinations. The definition of these examinations has been left to the individual owners. Deferring these responsibilities to the individual owners creates a potential for substantial inconsistencies. To ensure consistent application throughout the industry, licensees who have been authorized to use the 1998 Edition of IWE and IWL have augmented these visual examination requirements.

In its November 21, 2000, submittal, the licensee states that the visual examinations will be performed in accordance with approved plant procedures and in sufficient detail to allow identification of concrete deterioration and distress as defined in the American Concrete Institute (ACI) Standard 201.1R, "Guide for Making a Condition Survey of Concrete in Service." Acceptance criteria for the examinations will be consistent with the guidance of ACI 349.3R, "Evaluation of Existing Nuclear Safety-Related Concrete Structures."

Qualification of personnel performing the VT-1 examination meets the requirements of ANSI/ASNT CP-189 and SNT-TC-1A. Site-specific training using the Electric Power Research Institute training materials is used to certify concrete examination personnel.

Incorporation of these provisions into the licensee's containment inservice inspection procedures provides reasonable assurance that the licensee's defined visual examination methods and personnel qualification procedures are adequate. Use of the general and detailed visual examination requirements in lieu of VT-1C, VT-3C, and VT-1, as augmented by the licensee, provides an acceptable level of quality and safety for ensuring the pressure boundary integrity of the South Texas Project containments.

#### 4.0 CONCLUSION

The licensee's proposed use of alternative visual examination methods to those specified in IWL-2510(a) and IWL-2524.1 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the first containment inservice inspection interval. The proposed alternative provides an acceptable level of quality and safety for ensuring the pressure boundary integrity of the South Texas Project containments.

Principal Contributor: M. Kotzalas

Date: May 10, 2001