



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

May 15, 2003  
NOC-AE-03001533  
10CFR50.55a

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

South Texas Project  
Units 1 and 2  
Docket Nos. STN 50-498 and STN 50-499  
Request for Approval of ASME Section IX Code Cases 2142-1 and 2143-1 for the  
Second Ten-Year Inspection Interval (Relief Request RR-ENG-2-31)

Pursuant to 10CFR50.55a(a)(3)(i), STP Nuclear Operating Company (STPNOC) hereby requests NRC approval of ASME Section IX Code Cases 2142-1 and 2143-1 for use during the second ten-year inspection interval at the South Texas Project. These Code Cases were previously approved for use on the replacement steam generators at the South Texas Project. The details of the 10CFR50.55a request are attached.

STPNOC requests approval on an expedited basis by June 9, 2003, based on the schedule for repairing bottom mounted instrument nozzles in the Unit 1 reactor pressure vessel during the current forced outage.

If there are any questions regarding this request, please contact Michael S. Lashley at (361) 972-7523 or me at (361) 972-7902.

A handwritten signature in black ink, appearing to read 'T. J. Jordan', is written over a horizontal line.

T. J. Jordan  
Vice President  
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jtc

Attachment: 10CFR50.55a Relief Request RR-ENG-2-31

A047

STI: 31607502

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**10CFR50.55a Relief Request RR-ENG-2-31****Proposed Alternative  
in Accordance with 10 CFR 50.55a(a)(3)(i)****--Alternative Provides Acceptable Level of Quality and Safety--****1. ASME Code Components Affected**

Components, component supports, or other items fabricated from Alloy 690 material and requiring the use of UNS N06052 filler metal or UNS W86152 electrodes for welding operations.

**2. Applicable Code Edition and Addenda**

American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 1989 Edition with no Addenda.

**3. Applicable Code Requirement**

IWA-4000 of the South Texas Project (STP) Section XI Code of record requires that repair welds and installation welds for replacement items meet the requirements of the original construction codes, or later approved code, including materials requirements. The ASME Section III codes applied to the original construction and the corresponding Section II material codes for most STP components do not address the welding materials specified in Code Cases 2142-1 and 2143-1.

**4. Reason for the Request**

STP Nuclear Operating Company (STPNOC) requests relief to employ the alternative welding materials of ASME Section IX Code Cases 2142-1 and 2143-1 as necessary during the second ten-year inservice inspection interval of South Texas Project Units 1 and 2. The immediate need for these Code Cases is for repairing the bottom mounted instrument nozzles in the Unit 1 reactor vessel.

**5. Proposed Alternative and Basis for Use**

Industry studies have demonstrated that Alloy 690 weld materials possess a high resistance to primary water corrosion. The use of Alloy 690 weld materials has been previously approved for other applications at several operating nuclear power plants (refer to Section 7 below.)

Code Cases 2142-1 and 2143-1 introduce and classify nickel-based weld materials that closely match and are intended for welding Alloy 690. Code Case 2142-1 establishes welding classifications and other requirements for bare filler metal. Code Case 2143-1 establishes welding classifications and other requirements for coated electrodes. The Code Cases were approved by ASME on June 5, 1995, and published in the 1995 Edition of the ASME Boiler and Pressure Vessel Code, Code Cases Supplement No. 1.

Code Case 2142-1 lists the American Welding Society (AWS) specification A5.14 and Universal Numbering System (UNS) designation N06052 for a filler metal conforming to Inco 52 (Inconel 52). It establishes this weld metal as F-No. 43 for both procedure and performance qualification purposes. Code Case 2143-1 lists appropriate AWS specification A5.11 and UNS specification W86152 for a coated electrode conforming to Inco 152 (Inconel 152) and establishes F-No. 43 for this material for welding purposes. By this set of specifications and F-No. assignments, the materials are completely described for welding purposes as similar in their welding characteristics to many other Code nickel-based weld metals. These materials are similar in composition and mechanical and thermal properties to approved metals; thus, existing welding procedures may be used with the Inco 52 or 152 (Inconel 52/152) type weld metals.

STPNOC has determined that the proposed alternative to employ the alternative welding materials of Code Cases 2142-1 and 2143-1 provides an acceptable level of quality and safety.

#### 6. Duration of Proposed Alternative

This relief request will be implemented during the second ten-year inservice inspection interval of South Texas Project Units 1 and 2.

#### 7. Precedents

Catawba Nuclear Station Unit 2  
Docket No. 50-414  
TAC No. MB3003  
January 18, 2002

Three Mile Island Nuclear Station Unit 1  
Docket No. 50-289  
TAC No. MB2323  
November 7, 2001

Oconee Nuclear Station Units 1 & 3  
Docket Nos. 50-269 and 50-287  
TAC No. MB2681 and MB2682  
September 6, 2001

Oconee Nuclear Station Unit 2  
Docket No. 50-270  
TAC No. MB1918  
May 23, 2001

South Texas Project Units 1 & 2  
Docket Nos. 50-498 and 50-499  
TAC Nos. MA2250 and MA2251  
December 15, 1998