

March 22, 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, UNIT 2 - SAFETY EVALUATION OF REQUEST
FOR RELIEF FROM THE AMERICAN SOCIETY OF MECHANICAL
ENGINEERS (ASME) CODE REPAIR REQUIREMENTS FOR AMERICAN
SOCIETY OF MECHANICAL ENGINEERS CODE CLASS 3 PIPING
ESSENTIAL COOLING WATER SYSTEM (ECWS) WELD (TAC NO. MA8269)

Dear Mr. Cottle:

By a letter dated February 14, 2000, as supplemented by letter dated May 22, 2000, South Texas Project Nuclear Operating Company (the licensee) requested relief (RR-ENG-35) from ASME Code, Section XI, requirements regarding repair to discoloration indications in a Class 3 piping flange-to-pipe weld of the essential cooling water system (ECWS). The licensee's request was based on the guidance provided in Generic Letter (GL) 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping."

The licensee determined that the Code repair of the ECWS isolation valve within the outage time might not be practical because of the potential fit-up problems during repair. Hence, pursuant to 10 CFR 50.55a(g)(6)(i) the licensee submitted request for relief as described above. The licensee requested relief until a Code repair can be performed during the next outage of sufficient duration (around March 2001).

The Nuclear Regulatory Commission's (NRC) staff reviewed the licensee's request using the guidance in GL 90-05. Based on NRC's review, the staff has concluded that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) from the Code repair requirements is authorized by law and will not endanger life or property or common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

W. Cottle

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

This completes our efforts for TAC No. MA8269.

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

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** No legal objections

ML010810423

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SOUTH TEXAS PROJECT, UNIT 2

SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

1.0 INTRODUCTION

By letter dated February 14, 2000, and supplemented by letter dated May 22, 2000, South Texas Project Operating Company (the licensee) requested relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (the ASME Code), Section XI, requirements regarding repair to discoloration indications (at three locations) in a Class 3, low energy pipe at South Texas Project, Unit 2. The discoloration was detected in a 10-inch flange-to-pipe weld of the essential cooling water system (ECWS) Train 2C to Train 2B essential chiller supply cross-tie isolation valve. The ECWS has an operating pressure of 50 psig and a design pressure of 120 psig.

Discoloration of aluminum-bronze welds indicates through-wall dealloying defects. However, there is no leakage or moisture at these locations. An ultrasonic testing (UT) examination performed on January 20, 2000, at the flaw location revealed no cracks or linear indications. The licensee currently attributed the de-alloying to a combination of an existing crevice and susceptible material.

The licensee determined that the Code repair of the ECWS isolation valve within the outage time might not be practical because of the potential fit-up problems during repair. Hence, the licensee submitted a relief request in accordance with the provisions of Generic Letter (GL) 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping." The licensee requests relief until a Code repair can be performed during the next outage of sufficient duration (around March 2001).

2.0 DISCUSSION AND EVALUATION

The *Code of Federal Regulations*, Part 10 CFR 50.55a(g), requires nuclear power facility piping and components to meet the applicable requirements of Section XI of the Code. This section of the Code specifies Code-acceptable repair methods for flaws that exceed Code acceptance limits in piping that is in service. A Code repair is required to restore the structural integrity of flawed Code piping, independent of the operational mode of the plant when the flaw is detected. Those repairs not in compliance with Section XI of the Code are non-Code repairs. In some circumstances the required Code repair may be impractical unless the facility is shut down. In such cases, the Commission may evaluate determinations of impracticality and may grant relief and impose alternative requirements pursuant to 10 CFR 50.55a(g)(6)(i). GL 90-05 provides guidance to the staff for evaluating relief requests submitted by licensees for temporary non-Code repairs to Code Class 3 piping.

On November 7, 1991, the Commission issued GL 91-18, "Information to Licensees Regarding Two Nuclear Regulatory Commission (NRC) Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability." This generic letter and the NRC Inspection Manual Part 9900 provided detailed discussions of specific operability determinations, one of which was operational leakage. In this regard, Section 6.15 of Part 9900 states the following:

"Upon discovery of leakage from a Class 1, 2, or 3 component pressure boundary (i.e., pipe wall, valve body, pump casing, etc.) the licensee should declare the component inoperable. The only exception is Class 3 moderate energy piping as discussed in Generic Letter 90-05. For Class 3 moderate energy piping, the licensee may treat the system containing the through-wall flaw(s), evaluated and found to meet the acceptance criteria in Generic Letter 90-05, as operable until relief is obtained from the NRC."

The licensee cited report 8804-06FA, Revision (Rev.) 3, entitled, "Failure Analysis and Structural Integrity Evaluation of Leaking Small Bore Aluminum-Bronze Cast Valve Bodies and Fittings in the ECW System," and maintained that the Appendix III and Appendix XI analyses documented there bound the current application. The staff reviewed the above-mentioned report and determined that although the Appendix III and Appendix XI analyses in 8804-06FA, Rev. 3, adequately addressed all issues related to the structural integrity of the valves and fittings in the 2-inch and smaller piping in the ECWS, the licensee has not firmly established the general applicability of this report to the current 10-inch flange-to-pipe weld. However, considering that a UT examination performed on January 20, 2000, at the flaw location revealed no cracks or linear indications, and there is no leakage or moisture at these locations, the staff concluded that the characterized flaw could be very small and it would satisfy the criteria for the through-wall flaw approach of GL 90-05. Hence, the staff confirmed that the licensee's evaluation meets the intent of GL 90-05. Further, the issues of flooding, water spraying on other equipment, and loss of flow were analyzed and found to be insignificant to the operation of the ECWS.

The licensee has implemented an augmented monthly inspection to detect any changes in the size of the discolored areas or leakage. A regularly scheduled walkdown using VT-2 examination is also proposed.

3.0 CONCLUSION

The staff has reviewed the licensee's request for relief and finds that the licensee's evaluation meets the intent of GL 90-05. Further, the staff finds that performing a Code repair on the ECWS system isolation valve flange-to-pipe weld within this outage time is not practical. Based on its review, the staff concludes that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) from the Code repair requirements is authorized by law and will not endanger life or property or common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

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Date: March 22, 2001

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