Nuclear Operating Company

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

September 23, 2009
NOC-AE-09002467
File No.: G25
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2746

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, 50-499
Request for Relief from ASME Section XI Requirements for Ultrasonic
Examination of the Reactor Pressure Vessel Shell-to-Flange Weld (RR-ENG-2-53)

In accordance with the provisions of 10 CFR 50.55a(a)(3)(i), STP Nuclear Operating Company (STPNOC) proposes an alternative to the requirements of ASME Section XI applicable to ultrasonic examination of the Reactor Pressure Vessel (RPV) shell-to-flange weld. The applicable code, ASME Section XI 1995 Edition 1996 Addenda, Appendix I, Article I-2110(b), requires ultrasonic examination of the RPV shell-to-flange weld in accordance with ASME Section V, Article 4. Approval of this alternative will allow the RPV shell-to-flange weld examination to be performed with procedures, equipment, and personnel qualified to the Performance Demonstration Initiative requirements of ASME Section XI 1995 Edition through 1996 Addenda, Appendix VIII, Supplements 4 and 6, as modified by 10 CFR 50.55a. The proposed alternative will provide an acceptable level of quality and safety.

The NRC has approved similar requests for:

- Seabrook Station Unit 1 (April 7, 2009)
- Donald C. Cook Nuclear Plant (May 22, 2009)

Examination of the weld must be performed during the current 10-year inservice inspection intervals for Unit 1 and Unit 2 which end September 25, 2010, and October 19, 2010, respectively. Approval is requested by October 1, 2009, to support completion of the inspection prior to the end of the interval.

There are no commitments included with this request.

If there are any questions, please contact either Mr. P. L. Walker at (361) 972-8392 or me at (361) 972-7904.

Marco Ruvalcaba
Manager,
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PLW
Attachment: Request for Relief from ASME Section XI Requirements to Perform Ultrasonic Examination of the Reactor Pressure Vessel Shell-to-Flange Weld (RR-ENG-2-53)

STI: 32540233

A047
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SOUTH TEXAS PROJECT
UNITS 1 AND 2

Request for Relief from ASME Section XI Requirements for Ultrasonic Examination of the Reactor Pressure Vessel Shell-to-Flange Weld (RR-ENG-2-53)

1. Reference Code

ASME Section XI, 1995 Edition 1996 Addenda, Appendix I, Article I-2110(b), requiring ultrasonic examination in accordance with ASME Section V, Article 4

ASME Section XI, 1995 Edition 1996 Addenda, Appendix VIII, Supplements 4 and 6, as modified by 10 CFR 50.55a for performing ASME Section XI Appendix VIII qualified ultrasonic (UT) examinations using Performance Demonstration Initiative

2. Affected Components

Reactor Pressure Vessel (RPV) shell-to-flange weld (ASME Section XI Table IWB-2500-1, Examination Category B-A, Item B1.30)

3. Code Requirement for Which Alternative is Proposed

ASME Section XI 1989 Edition IWA-2232 requires that ultrasonic (UT) examinations be conducted in accordance with Appendix I. By NRC safety evaluation dated September 28, 2001 (ML012710500), STPNOC is approved to apply ASME Section XI 1995 Edition 1996 Addenda as alternative criteria for performing Appendix VIII-qualified ultrasonic examinations and qualification of examination personnel. 1995 Edition 1996 Addenda, Appendix I, Article I-2110(b) requires that UT examination of the Reactor Vessel shell-to-flange weld be performed in accordance with ASME Section V, Article 4. STPNOC proposes an alternative to Appendix I for RPV shell-to-flange weld examination.

4. Basis for Relief from Code Requirements

ASME Section V, Article 4, applies a prescriptive-based process for qualifying UT procedures and performing examinations. The prescriptive-based process has been replaced by performance-based methods implemented by ASME Section XI, 1995 Edition 1996 Addenda, Appendix VIII, Supplements 4 and 6. 10 CFR 50.55a requires performance-based methods for examination of RPV shell welds.

In addition, ASME Section XI, 2004 Edition 2005 Addenda, Appendix I, Article I-2600(a) states that for components to which Appendix VIII is not applicable [Article I-2110(b)], examination procedures, personnel, and equipment qualified in accordance with Appendix VIII may be applied.

5. Proposed Alternative

The RPV shell-to-flange weld will be examined in accordance with the performance-based methods of ASME Section XI 1995 Edition 1996 Addenda, Appendix VIII, Supplements 4 and 6, as modified by 10 CFR 50.55a.

6. Justification for Approving Alternative

The Appendix VIII Performance Demonstration Initiative (PDI) has demonstrated that, for detection and characterization of flaws in the RPV, UT examination techniques equal or surpass those of ASME Code Section V, Article 4. Therefore, use of the proposed alternative will provide an acceptable level of quality and safety. This justification is

based on review of NRC safety evaluations issued for alternatives proposed for RPV shell-to-flange weld examinations submitted by:

- Seabrook Station Unit 1 (April 7, 2009) (ML090690557)
- Donald C. Cook Nuclear Plant (May 22, 2009) (ML083570013)

7. Implementation Schedule:

STPNOC requests permission to implement the alternative RPV shell-to-flange weld examination requirements as described above for the examinations to be performed in the current Unit 1 and Unit 2 10-year inservice inspection intervals. The intervals end September 25, 2010, for Unit 1, and October 19, 2010, for Unit 2. Approval is requested by October 1, 2009, for the Unit 1 refueling outage to support completion of the inspection prior to the end of the interval.