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

October 18, 2010
NOC-AE-10002600
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 Reactor Pressure Vessel Shell-to-Flange Welds (RR-ENG-3-05)

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 South Texas Project (STP) Code of Record for the third inspection interval is ASME Section XI 2004 Edition No Addenda. IWA-2232 of Section XI requires that ultrasonic (UT) examinations be conducted in accordance with Section XI Appendix I. Appendix I, Article I-2110(b) requires that UT examination of the RPV shell-to-flange weld be performed in accordance with ASME Section V, Article 4 which is qualified using a prescriptive-based process. STPNOC proposes an alternative using the performance-based methods of ASME Section XI, 2001 Edition (no Addenda), Appendix VIII Supplements 4 and 6, as modified by 10 CFR 50.55a(b)(2)(xxiv). The proposed alternative will provide an acceptable level of quality and safety.

STPNOC requests NRC approval of this alternate approach by October 30, 2011, to support scheduling activities to be performed later in the inspection 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,
Testing and Programs Engineering

PLW
Attachment: Request for Relief from ASME Section XI Requirements for Ultrasonic Examination of Reactor Pressure Vessel Shell-to-Flange Welds (RR-ENG-3-05)

STI: 32744693

A047
NRR

cc:
(paper copy)

Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
612 East Lamar Blvd, Suite 400
Arlington, Texas 76011-8064

Mohan C. Thadani
Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North (MS 8 B1A)
11555 Rockville Pike
Rockville, MD 20852

Senior Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 289, Mail Code: MN116
Wadsworth, TX 77483

C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

(electronic copy)

John Ragan
Catherine Callaway
Jim von Suskil
NRG South Texas LP

A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP

Mohan C. Thadani
U. S. Nuclear Regulatory Commission

Richard Pena
E. Alarcon
Kevin Pollo
City Public Service

C. Mele
City of Austin

Peter Nemeth
Crain Caton & James, P.C.

Richard A. Ratliff
Texas Department of State Health Services

Alice Rogers
Texas Department of State Health Services

SOUTH TEXAS PROJECT
UNITS 1 AND 2
REQUEST FOR RELIEF FROM ASME SECTION XI REQUIREMENTS FOR ULTRASONIC EXAMINATION OF REACTOR PRESSURE VESSEL SHELL-TO-FLANGE WELDS (RR-ENG-3-05)

1. Reference Code for Third Inservice Inspection Interval

- ASME Section XI, 2004 Edition (No Addenda)

2. Components Affected

(a) Component: Reactor Pressure Vessel (RPV)

(b) Description: Shell-to-flange weld RPV1-101-121

(c) Class: ASME Code Class 1

3. Applicable Code Requirement

The South Texas Project (STP) Code of Record for the third inspection interval is ASME Section XI 2004 Edition No Addenda. IWA-2232 of Section XI requires that ultrasonic (UT) examinations be conducted in accordance with Section XI Appendix I. Appendix I, Article I-2110(b) requires that UT examination of the RPV shell-to-flange weld be performed in accordance with ASME Section V, Article 4 which is qualified using a prescriptive-based inspection process.

STPNOC proposes an alternative to Appendix I Article I-2110(b) for RPV shell-to-flange weld UT examinations.

4. Basis for Relief from Code Requirements

The RPV shell-to-flange weld is the only circumferential shell weld in the RPV not examined according to ASME Section XI, Appendix VIII, Supplements 4 and 6 UT techniques [Article I-2110(a)].

Procedures, equipment, and personnel qualified by the Appendix VIII Performance Demonstration Initiative (PDI) Programs for Supplements 4 and 6 have demonstrated a high probability of detecting flaws, and are generally considered superior to those qualified under Section V, Article 4 criteria.

5. Proposed Alternative

The RPV shell-to-flange weld will be examined in accordance with the performance-based methods of ASME Section XI, 2001 Edition (no Addenda), Appendix VIII, Supplements 4 and 6, as modified by 10 CFR 50.55a(b)(2)(xxiv).

6. Justification for Granting Relief

ASME Section XI, 2004 Edition 2005 Addenda, Appendix I, Article I-2600(a) states that for components to which Appendix VIII is not applicable, examination procedures, personnel, and equipment qualified in accordance with Appendix VIII may be applied provided such components, materials, sizes, and shapes are within the scope of the qualified examination procedure.

Industry experience has shown that the Appendix VIII PDI approach for UT examinations equals or surpasses the UT examination techniques of the ASME Code, Section V, Article 4 for detection and characterization of flaws in reactor pressure vessels. The procedure requires the examiner to evaluate all indications determined to be flaws regardless of their amplitude.

The proposed qualification approach is more conservative. Therefore, use of the proposed alternative will provide an acceptable level of quality and safety.

7. Implementation Schedule:

The alternative RPV shell-to-flange weld examination requirements as described above are to be applied in both the Unit 1 and Unit 2 third 10-year inservice inspection intervals. The intervals end September 25, 2020, for Unit 1, and October 19, 2020, for Unit 2. STPNOC requests NRC approval of this alternate approach by October 30, 2011, to support scheduling activities to be performed later in the inspection interval.