

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

November 9, 2004 NOC-AE-04001817 File No.: G25 10CFR50.55a

U.S. Nuclear Regulatory Commission Attention: Document Control Desk One White Flint North 11555 Rockville Pike Rockville, MD 208952

South Texas Project Unit 2 Docket No. STN 50-499 Revised Request for Authorization to Use an Alternative to the ASME Boiler and Pressure Vessel Code Section XI Requirements (Relief Request VRR-05)

Reference: Letter from John Crenshaw, STPNOC, to NRC Document Control Desk, dated September 30, 2004, "Request for Authorization to Use an Alternative to the ASME Boiler and Pressure Vessel Code Section XI Requirements (Relief Request VRR-05) (NOC-AE-04001747)

This submittal revises the basis for Relief Request VRR-05 from 10CFR50.55a(a)(3)(i), as described in the referenced correspondence, to 10CFR50.55a(a)(3)(ii). Changes are identified with change bars in the margin.

In accordance with the provisions of 10CFR50.55a(a)(3)(ii), the South Texas Project requests authorization to use an alternative to the requirements of ASME Section XI 1989 Edition (OM Code 1987 Edition with 1988 addenda). The ASME Code requires stroke-time testing of motor-operated valves on a quarterly basis and after maintenance. However, surveillance testing on one Unit 2 motor-operated valve as specified by the Code is not appropriate at this time.

The subject valve has been identified as a source of leakage inside containment. The leakage rate when discovered was approximately 5 gallons per day. A flaw on the stem has been identified as the probable cause of damage to the valve packing when the valve is stroked, resulting in a packing leak. Tightening the packing reduced the leak rate to an acceptable level. However, until the flaw is repaired, further surveillance tests by stroking the valve may cause additional damage to the valve packing and contribute to more leakage. The valve can not be repaired without plant shutdown, fuel removal, and draindown of the reactor vessel below the nozzle line. Consequently, the South Texas Project requests relief from stroke-time testing the valve quarterly and after maintenance until the valve is repaired.

There are no commitments included with this letter.

AO47

NOC-AE-04001817 Page 2 of 3

The attached relief request includes a discussion of the basis and justification for the relief request as well as an implementation schedule. NRC approval is requested by December 1, 2004.

If there are any questions, please contact either Mr. Philip L. Walker at (361) 972-8392 or me at (361) 972-7074.

John W. Crenshaw ^A Manager, Plant Engineering

PLW

Attachment: Revised Request for Authorization to Use an Alternative to the ASME Boiler and Pressure Vessel Code Section XI Requirements (Relief Request VRR-05)

NOC-AE-04001817 Page 3 of 3

cc: (paper copy)

Bruce S. Mallett Regional Administrator, Region IV U. S. Nuclear Regulatory Commission 611 Ryan Plaza Drive, Suite 400 Arlington, Texas 76011-8064

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

Richard A. Ratliff Bureau of Radiation Control Texas Department of State Health Services 1100 West 49th Street Austin, TX 78756-3189

Jeffrey Cruz 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)

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

J. J. Nesrsta City Public Service

David H. Jaffe U. S. Nuclear Regulatory Commission

R. L. Balcom Texas Genco, LP

C. A. Johnson AEP Texas Central Company

Jon C. Wood Cox Smith Matthews

C. Kirksey City of Austin

R. K. Temple City Public Service

NOC-AE-04001817 Page 1 of 3

SOUTH TEXAS PROJECT UNIT 2

REQUEST FOR AUTHORIZATION TO USE AN ALTERNATIVE TO THE ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI REQUIREMENTS

(RELIEF REQUEST VRR-05)

1. ASME Code Component Affected

Systems: Residual Heat Removal (RHR) System and Safety Injection (SI) system

Valve ID: 2-RH-0031A

Function: This valve is normally open to provide low head safety injection flow to the cold leg of the Reactor Coolant System under accident conditions. The valve is closed during switchover of recirculation flow from the cold leg to the hot leg of the RCS.

Under normal cooldown procedures, this valve is closed during initiation of residual heat removal operation. The valve is opened to provide RHR flow to the RCS.

Class: ASME Code Class 2

2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition (OM Code 1987 Edition and 1988 addenda)

3. <u>Applicable Code Requirements</u>

ASME OM Code, 1988 Addenda, Part 10:

3.4 Effect of Valve or Actuator Replacement, Repair, and Maintenance on Reference Values

When a valve or its control system has been replaced, repaired, or has undergone maintenance that could affect the valve's performance, a new reference value shall be determined or the previous value reconfirmed by an inservice test run prior to the time it is returned to service or immediately if not removed from service, to demonstrate that performance parameters which could be affected by the replacement, repair, or maintenance are within acceptable limits.

4.2.1.1 Exercising Test Frequency:

Active Category A and B valves shall be tested nominally every 3 months....

4.2.1.4 Power-Operated Valve Stroke Testing:

The limiting value(s) of full-stroke time of each power-operated valve shall be specified by the Owner.

The stroke time of all power-operated valves shall be measured to at least the nearest second.

- 4.2.1.8 Stroke Time Acceptance Criteria
- 4.2.1.9 Corrective Action

- (a) If a valve fails to exhibit the required change of obturator position or exceeds the limiting values of full-stroke time, the valve shall be immediately declared inoperable.
- (b) Valves with measured stroke times which do not meet the acceptance criteria of para. 4.2.1.8 shall be immediately retested or declared inoperable....

4. <u>Reason for Request</u>

Currently, the valve is subject to stroke time testing quarterly and prior to return to service after maintenance, as described in section 3. In addition, following valve or actuator maintenance, post-maintenance testing is applied which consists of the following:

- MOV Diagnostic testing MOV is stroked, with diagnostic test equipment installed, to obtain data for analysis to verify the condition of the MOV. Diagnostic testing requirements are based on the maintenance performed. Data collection may require removal of the actuator's limit switch compartment cover, in which case a valve stroke is performed following restoration of the actuator to verify that restoring the limit switch compartment cover did not damage any wires.
- Other post-maintenance testing as required for the maintenance performed.

The valve has a blemish on the stem in the packing area, which is postulated to be the source of damage to the valve packing and causing leakage of borated water at this location. Although the valve is not currently leaking, surveillance testing with full valve strokes increases the potential for damage to the valve packing.

In normal plant configuration, the only pressure on the valve is static head pressure from the Refueling Water Storage Tank. However, quarterly inservice testing of the associated Residual Heat Removal pump and Low Head Safety Injection pump pressurizes the line incorporating the valve, which could exacerbate the leakage rate if the packing has been damaged by stroke time testing.

Valve 2-RH-0031A is in a line connected directly to the Reactor Coolant System. To separate the high-pressure RCS from the low-pressure components of the Residual Heat Removal System, two check valves are located in series downstream of the motor-operated valve. While they meet their design intent, the check valves are not appropriate for use as isolation valves. Without isolation from the Reactor Coolant System, repairing the flaw in the valve stem will require shutdown of Unit 2, removal of the fuel, and draining the reactor pressure vessel below the nozzle line. The next scheduled drain down of Unit 2 does not occur until 2RE12 in March – April 2007.

Consequently, the South Texas Project requests relief from full stroke time testing of this valve.

5. **Proposed Alternative**

STP proposes to defer quarterly stroke time testing for this MOV until repairs can be accomplished as described in the previous section.

6. <u>Basis for Use</u>

Safety analyses do not assume a specific closure time for the valve.

The South Texas Project has confidence in the continued performance of the MOV based on a review of the data from MOV diagnostic testing, and work history for A2SIMOV0031A. Work history revealed the actuator has performed satisfactorily since the completion of the GL 89-10 program. MOV diagnostic testing data review shows consistent performance with no adverse trends or anomalies noted. Most recent full As-Left testing performed revealed an actuator close margin of HIGH per the MOV JOG methodology.

During the next refueling outage (2RE11, October 2005), the MOV must be operated as part of required surveillance on the Safety Injection System. After required testing has been completed, South Texas intends to perform a packing adjustment or repack the valve as necessary. Following this maintenance activity, a static diagnostic test will be performed as required by STP procedure and stroke time testing will be performed as required to demonstrate operability in accordance with Technical Specification 4.0.1.¹ The MOV will then be placed in the normal position for operation and returned to service. At this point, the South Texas Project will be confident that the valve is operable and not leaking. Approval of the proposed relief will preclude the need to stroke the valve for surveillance testing over the ensuing Unit 2 operating cycle and consequently minimize the likelihood of packing damage that would cause the valve to leak. The valve history described above provides a high level of confidence in the continued operability of the valve.

Based on the high level of confidence in the operability of the valve without performing stroke-time surveillance testing and the hardship associated with the off-load and draindown described in section 4 that would be necessary to repair the valve, the South Texas Project concludes the criteria of 10CFR50.55a(a)(3)(ii) are met.

7. Duration of Proposed Alternative

The South Texas Project requests NRC approval to use this alternative approach for testing this valve for the remainder of the current Unit 2 refueling cycle and the duration of the subsequent refueling cycle. The valve is expected to be repaired during the refueling outage in March – April 2007 (2RE12) when the reactor pressure vessel is drained down below the nozzle line. Consequently, the proposed relief will expire at the end of 2RE12.

8. <u>Implementation</u>

The South Texas Project requests permission to implement the proposed alternative described above immediately following approval of this relief request. Approval by December 1, 2004 is requested in order to minimize the number of times the valve is stroked for surveillance testing and post-maintenance testing until the repair is completed. The next surveillance test of this valve is currently scheduled for no later than December 23, 2004.

¹ This is not regarded as a commitment in the context of NEI 95-07. The static diagnostic test and the stroke-time test are existing STP programmatic requirements for restoration of the valve to service and would be performed whether the South Texas Project was asking for relief or not.