



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

October 10, 2000
NOC-AE-00000938
File No.: G09.16
10CFR50.55a

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, 50-499
Request for Relief from ASME Boiler and Pressure Vessel Code Section XI
Requirements for Use of Code Case N-416-2 (Relief Request RR-ENG-2-20)

- References:
- 1) "Request to Use ASME Section XI Code Case N-416-1 (RR-ENG-15)," T. J. Jordan to NRC Document Control Desk, dated March 26, 1997 (ST-HL-AE-5594)
 - 2) "First Ten-Year Interval Inservice Inspection Program Plan - Request To Use ASME Section XI Code Case N-416-1, South Texas Project, Units 1 and 2 (STP) (TAC Nos. M98294 and M98295)," NRC to William T. Cottle, dated July 14, 1997

In accordance with the provisions of 10CFR50.55a(a)(3)(i), the South Texas Project requests Nuclear Regulatory Commission approval to use ASME Section XI Code Case N-416-2, "Alternative Pressure Test Requirement for Welded Repairs, Fabrication Welds for Replacement Parts and Piping Subassemblies, or Installation of Replacement Items by Welding, Class 1, 2, and 3." ASME Code Case N-416-2 allows an alternative pressure test in lieu of a hydrostatic pressure test, specified by paragraph IWA-4700, following welded repairs, fabrication welds for replacement parts and piping subassemblies, or welds for installation of replacement items. The alternative pressure testing and non-destructive examination requirements specified by Code Case N-416-2 will provide an acceptable level of quality and safety.

Reference 1 requested relief for the South Texas Project to use N-416-1, which was granted in Reference 2. N-416-1 was approved by the NRC in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," Revision 12. ASME recently superceded Code Case N-416-1 with Section XI Code Case N-416-2. However, N-416-2 has not yet been similarly approved by the Nuclear Regulatory Commission.

Code Case N-416-2 is very similar to Code Case N-416-1. Code Case N-416-2 includes fabrication welds for replacement parts and piping subassemblies which were not specified in N-

A047

416-1. Code Case N-416-2 makes no technical revisions from N-416-1 in the examination process.

The South Texas Project requests NRC approval of this relief request by January 1, 2001, to support development and issuance of the South Texas Project Ten Year ISI Plan for the second inspection interval. In the interim, the South Texas Project will continue implementing N-416-1 as approved by the Nuclear Regulatory Commission, although the intent of N-416-2 will also be satisfied.

If there are any questions, please contact either Mr. M. S. Lashley at (361) 972-7523 or me at (361) 972-7902.



T. J. Jordan

Manager,

Nuclear Engineering

PLW/

Attachment: Request for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements for Use of Code Case N-416-2 (Relief Request RR-ENG-2-20)

cc:

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

Jon C. Wood
Matthews & Branscomb
112 East Pecan, Suite 1100
San Antonio, TX 78205-3692

John A. Nakoski
Addressee Only
Project Manager, Mail Stop OWFN/7-D-1
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Institute of Nuclear Power
Operations - Records Center
700 Galleria Parkway
Atlanta, GA 30339-5957

Tae (T. J.) Kim
Addressee Only
Project Manager, Mail Code OWFN/7-D-1
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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

Cornelius F. O'Keefe
c/o U. S. Nuclear Regulatory Commission
P. O. Box 910
Bay City, TX 77404-0910

D. G. Tees/R. L. Balcom
Houston Lighting & Power Co.
P. O. Box 1700
Houston, TX 77251

A. H. Gutterman
Morgan, Lewis & Bockius
1800 M. Street, N.W.
Washington, DC 20036-5869

C. A. Johnson/R. P. Powers
AEP - Central Power and Light
P. O. Box 289, Mail Code: N5022
Wadsworth, TX 77483

M. T. Hardt/W. C. Gunst
City Public Service
P. O. Box 1771
San Antonio, TX 78296

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

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

**SOUTH TEXAS PROJECT
UNITS 1 AND 2
REQUEST FOR RELIEF FROM ASME BOILER AND PRESSURE VESSEL CODE
SECTION XI REQUIREMENTS FOR USE OF CODE CASE N-416-2
(RELIEF REQUEST RR-ENG-2-20)**

Reference Code: ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition

A. Components for Which Exemption is Requested:

(a) Name: Components subject to pressure testing following repair, fabrication or installation by welding

(b) Function: Pressure retention

(c) Class: ASME Code Class 1, 2, and 3

B. Code Requirement from Which Relief is Requested:

IWA-4700 requires a system hydrostatic test for detection of leakage after a welded repair on a pressure-retaining boundary or installation of a replacement by welding. The South Texas Project previously received approval to use the provisions of Section XI Code Case N-416-1, "Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items by Welding, Class 1, 2, and 3," which allows use of a system leakage test, in conjunction with specified non-destructive examination, in lieu of a system hydrostatic test.

C. Basis for Relief from Code Requirements:

The South Texas Project has concluded that system hydrostatic testing requirements impose significant hardships, while adding marginal (if any) value without a compensating increase in the level of quality and safety.

Hydrostatic testing subjects the components to a relatively small increase in pressure over the nominal operating pressure and is not intended to present a significant (potentially destructive) challenge to pressure boundary integrity. Accordingly, hydrostatic pressure testing is primarily regarded as a means to enhance leakage detection during examination of components under pressure, rather than a measure of the structural integrity of the components.

Industry experience has demonstrated that leaks are not discovered as a result of hydrostatic test pressures propagating a pre-existing flaw through the wall of a component. In most cases, leaks are found when the system is at normal operating pressure. Hydrostatic pressure testing other than that following welded repair or replacement is required only upon installation and at

10-year inspection intervals for Class 1, 2, and 3 systems. System leakage tests at normal operating pressure are conducted a minimum of once each refueling outage for Class 1 systems and portions of Class 2 systems, and once each 40-month inspection period for Class 3 and the remainder of Class 2 systems. Leaks may also be identified during routine system walkdowns by plant operators and system engineers.

Hardships associated with hydrostatic testing performed in accordance with the referenced Code are as follows:

- Hydrostatic pressure testing frequently requires significant effort in preparation and performance. Since the testing is of questionable benefit, the required resources could be better spent in activities that more effectively assure plant safety and reliability.
- Special valve lineups for these tests add unnecessary challenges to maintaining system configuration.
- Tests performed inside the radiologically restricted area increase the total exposure to plant personnel performing the tasks of modifying and restoring system lineups and removing contaminated test equipment.

In addition, hydrostatic tests have the added potential to initiate leak paths at mechanical connections (e.g., valve packing gland, flange joints).

D. Alternative Examination:

The South Texas Project requests Nuclear Regulatory Commission approval of Code Case N-416-2, "Alternative Pressure Test Requirement for Welded Repairs, Fabrication Welds for Replacement Parts and Piping Subassemblies, or Installation of Replacement Items by Welding, Class 1, 2, and 3," as an alternative to system hydrostatic testing to detect leakage from welded repairs, fabrication welds for replacement parts and piping subassemblies, or welds for installation of replacement items. N-416-2 has the same requirements as N-416-1 except for specified applicability of system leakage tests to fabrication welds for replacement parts and piping subassemblies. For a system leakage test to be used, Code Case N-416-2 requires, similarly to N-416-1:

- Performance of non-destructive examination in accordance with the methods and acceptance criteria of the applicable Subsection of the 1992 Edition of Section III.
- Performance of a visual examination (VT-2) prior to or immediately upon return to service in conjunction with a system leakage test, using the 1992 Edition of Section XI, in accordance with IWA-5000, at nominal operating pressure and temperature.
- Documentation of use of this Case on an NIS-2 Form.

The South Texas Project will comply with the additional limitations stated in Regulatory Guide 1.147 for Code Case N-416-1 requiring additional surface examinations on the root pass layer of butt and socket welds of the pressure-retaining boundary of Class 3 components when the surface examination method is used in accordance with Section III. Consequently, there is no change in non-destructive examination and pressure test requirements from what has already been approved by the Nuclear Regulatory Commission.

E. Justification for Granting Relief:

In accordance with the provisions of 10CFR50.55a(a)(3)(i), the South Texas Project requests approval to use a system leakage test to detect leakage from welded repairs, fabrication welds for replacement parts and piping subassemblies, or welds for installation of replacement items in accordance with Code Case N-416-2 as an alternative to system hydrostatic testing required by IWA-4700.

Section XI Code Case N-416-2 was recently issued by ASME, superceding Code Case N-416-1. Pursuant to IWA-2441(c), because Code Case N-416-1 is no longer in effect, it cannot be adopted in updated ISI plans. Therefore, approval of this relief request would be consistent with ASME code requirements.

Code Case N-416-2 is very similar to Code Case N-416-1 which was approved by the Nuclear Regulatory Commission in Regulatory Guide 1.147. Code Case N-416-2 specifies that fabrication welds for replacement parts and piping subassemblies are included in system leakage testing. N-416-2 makes no technical revisions in the examination process.

The South Texas Project believes the alternative pressure testing and non-destructive examination requirements of Code Case N-416-2, in conjunction with the additional limitations stated in Regulatory Guide 1.147 for Code Case N-416-1, will provide an acceptable level of quality and safety in accordance with 10CFR50.55a(a)(3)(i).

F. Implementation Schedule:

The South Texas Project requests Nuclear Regulatory Commission approval of this relief request by January 1, 2001, to support the development and issuance of the Unit 1 and Unit 2 Ten Year Inservice Inspection Plan for the second inspection interval.