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

November 15, 1999
NOC-AE-000703
File No.: G09.16
10CFR50.55a

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

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Revised Request for Relief from ASME Boiler and Pressure Vessel Code Section XI
Requirements for Use of Code Case N-566-1(Relief Request RR-ENG-2-10-R)

Reference: J. J. Sheppard to NRC Document Control Desk, "Request for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements for Use of Code Case N-566-1 (Relief Request RR-ENG-2-10), dated October 7, 1999 (NOC-AE-000610)

Pursuant to comments from the Nuclear Regulatory Commission staff, the South Texas Project submits the attached revised request for relief from the ASME Section XI code nondestructive examination requirements of IWA-5250(a)(2) for the second inservice inspection interval of South Texas Project Units 1 and 2. Revisions to the original relief request referenced above are indicated by change bars. The changes support revising the visual examination technique from VT-3 to VT-1.

In accordance with the provisions of 10CFR50.55a(a)(3)(i), the South Texas Project requests relief from the ASME Section XI code nondestructive examination requirements of IWA-5250(a)(2) for the second inservice inspection interval of South Texas Project Units 1 and 2. If leakage is detected at a bolted connection, IWA-5250(a)(2) requires that the bolting be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100. In lieu of these Section XI requirements, the South Texas Project requests Nuclear Regulatory Commission approval of Code Case N-566-1, "Corrective Action for Leakage Identified at Bolted Connections," for use as an acceptable alternative. If bolting is required to be removed for further examination, a VT-1 visual examination will be performed and the results evaluated in accordance with acceptance standard IWB-3517, in place of the VT-3 and IWA-3100 requirements of IWA-5250(a)(2). The South Texas Project believes this alternative approach will provide an acceptable level of quality and safety.

The attached relief request includes a discussion of the basis and justification for the relief request and an implementation schedule.

A047

The South Texas Project requests NRC review and approval of this relief request by June 1, 2000, to support development and submittal of the South Texas Project Unit 1 and 2 Ten Year Inservice Inspection Plan for the second interval.

If there are any questions, please contact either Mr. C. A. Murry at (361) 972-8285 or me at (361) 972-7902.

T. J. Jordan
Manager,
System Engineering

PLW/
Attachment: Revised Request for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements for Use of Code Case N-566-1(Relief Request RR-ENG-2-10-R)

cc:

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

Thomas W. Alexion
Project Manager, Mail Code 13H3
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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

J. R. Newman, Esquire
Morgan, Lewis & Bockius
1800 M. Street, N.W.
Washington, DC 20036-5869

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

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

Jon C. Wood
Matthews & Branscomb
One Alamo Center
106 S. St. Mary's Street, Suite 700
San Antonio, TX 78205-3692

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

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

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

Central Power and Light Company
ATTN: G. E. Vaughn/C. A. Johnson
P. O. Box 289, Mail Code: N5012
Wadsworth, TX 77483

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

SOUTH TEXAS PROJECT
UNITS 1 AND 2
REVISED REQUEST FOR RELIEF FROM ASME BOILER AND PRESSURE VESSEL CODE SECTION XI REQUIREMENTS FOR USE OF CODE CASE N-566-1
(RELIEF REQUEST RR-ENG-2-10-R)

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

A. Components for Which Exemption is Requested:

(a) Type: Pressure-retaining bolted connections

(b) Function: Maintain integrity of pressurized, borated systems

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

B. Code Requirement from Which Relief is Requested:

The South Texas Project requests relief from ASME Section XI code requirement IWA-5250(a)(2) which states that if leakage is detected at a bolted connection, the bolting is to be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100.

[ASME Section XI Interpretation XI-1-98-39 states that the intent of IWA-5250(a)(2) is for bolting to be removed and a VT-3 visual examination performed only when the system is borated for the purpose of controlling reactivity.]

C. Basis for Relief from Code Requirements:

Application of the IWA-5250(a)(2) requirement to a leaking connection necessitates draining of the affected system to allow disassembly of the connection. This requirement imposes an unnecessary expense in terms of man-hours and system outage, potential increased radiation exposure to craft personnel, as well as potential consequences of cycling the plant to allow the connection to be drained and disassembled.

When leakage is detected at a bolted connection, an engineering evaluation should first be performed to determine whether it is necessary to stop the leakage, evaluate the joint bolting and component material for integrity, and determine the need for bolting removal. The bolting should not be removed from the connection unless removal is necessary to determine the extent of corrosion or failure of the bolting or component material. The engineering evaluation should give consideration to the susceptibility of the bolting to corrosion and failure before bolting removal is undertaken. Additionally, it may be possible to stop the leakage by using sealants or other techniques without removing the bolting.

D. Alternative Requirements:

The South Texas Project requests Nuclear Regulatory Commission approval of Code Case N-566-1, "Corrective Action for Leakage Identified at Bolted Connections," and the alternative visual examination techniques and acceptance standards specified below for use as an acceptable alternative. The South Texas Project proposes that the following requirements from ASME Section XI Code Case N-566-1 be implemented as an alternative to IWA-5250(a)(2) in response to detection of leakage at a pressure-retaining bolted connection:

(a) Stop the leak, and evaluate the bolting and the component material for joint integrity as described in (c).

(b) If the leakage is not stopped, evaluate the joint for joint integrity in accordance with IWB-3142.4. This evaluation shall include the considerations listed in (c).

(c) The evaluation in (a) and (b) is to determine the susceptibility of the bolting to corrosion and failure. The evaluation shall include the following:

- the number and service age of bolts;
- bolt and component material;
- corrosiveness of process fluid;
- leakage location and system function;
- leakage history at the connection or other system components; and
- visual evidence of corrosion at the assembled connection.

When evaluation of the above considerations indicates the need for further examination, the bolt nearest to the source of leakage will be removed, VT-1 examined, and evaluated in accordance with IWB-3517. If leakage is identified with the bolted connection in service, and an evaluation supports continued service, the VT-1 examination may be deferred to the next outage of sufficient duration. If the removed bolt has evidence of rejectable degradation, all remaining bolts in the connection shall be removed, VT-1 examined, and evaluated in accordance with IWB-3517.

The South Texas Project has intentionally specified a VT-1 visual examination and the IWB-3517 bolting acceptance standard in lieu of the VT-3 examination and IWA-3100 acceptance standard provided in IWA-5250(a)(2). The South Texas Project believes these are equivalent requirements because a detailed visual examination (i.e., VT-1) is required to verify the removed bolting meets the requirements of the original construction code per IWA-3100(b).

E. Justification for Granting Relief:

Evaluation of the leak in accordance with the proposed alternative requirements will ensure that the most appropriate corrective measures are taken if a leak is detected. While disassembly of the connection may be necessary to stop a leak, some leaks may be stoppable by means that do not require disassembly of the connection.

Based upon the above, in accordance with the provisions of 10CFR50.55a(a)(3)(i), the proposed alternative to IWA-5250(a)(2) will provide an acceptable level of quality and safety.

F. Implementation Schedule:

The South Texas Project requests Nuclear Regulatory Commission approval of Code Case N-566-1 and the alternative VT-1 visual examination and IWB-3517 acceptance standard for removed bolting for use as an acceptable alternative for the second ten year inservice inspection interval. Nuclear Regulatory Commission is requested to review and approve this relief request by June 1, 2000, to support development and submittal of the South Texas Project Unit 1 and 2 Ten Year Inservice Inspection Plan.

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: February 15, 1999

See Numeric Index for expiration and any reaffirmation dates

Case N-566-1
Corrective Action for Leakage Identified at Bolted Connections
Section XI, Division 1

Inquiry: What alternative to the requirements of IWA-5250(a)(2) may be used when leakage is detected at bolted connections?

Reply: It is the opinion of the Committee that, as an alternative to the requirements of IWA-5250(a)(2) bolted connections, the requirements of (a) or (b) below shall be met.

(a) The leakage shall be stopped, and the bolting and component material shall be evaluated for joint integrity as described in (c) below.

(b) If the leakage is not stopped, the joint shall be evaluated in accordance with IWB-3142.4 for joint integrity. This evaluation shall include the considerations listed in (c) below.

(c) The evaluation of (a) and (b) above is to determine the susceptibility of the bolting to corrosion and failure. This evaluation shall include the following:

(1) the number and service age of the bolts;

(2) bolt and component material;

(3) corrosiveness of process fluid;

(4) leakage location and system function;

(5) leakage history at the connection or other system components;

(6) visual evidence of corrosion at the assembled connection.