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

April 17, 2000
NOC-AE-00000823
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, STN 50-499
Supplement to Relief Request for Application of an Alternative to the
ASME Boiler and Pressure Vessel Code Section XI Examination
Requirements for Class 1 Piping Welds (Relief Request RR-ENG-2-16)

Reference: T. J. Jordan, South Texas Project, to Document Control Desk, dated December 30, 1999 (NOC-AE-000689)

In accordance with the provisions of 10CFR50.55a(a)(3)(i), the referenced correspondence requested relief from the ASME Section XI code requirements for inservice inspection of Class 1 piping welds (excluding socket welds). The proposed alternative is a risk-based approach which provides an acceptable level of quality and safety as required by 10CFR50.55a(a)(3)(i). The South Texas Project submits the attached response to a question from the Nuclear Regulatory Commission staff regarding the potential effect on containment failure probability.

If there are any questions, please contact either Mr. P. L. Walker at (361) 972-8392 or me at (361) 972-7902.

T. J. Jordan
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PLW
Attachment: Supplement to Relief Request for Application of an Alternative to the ASME Boiler and Pressure Vessel Code Section XI Examination Requirements for Class 1 Piping Welds (Relief Request RR-ENG-2-16)

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SOUTH TEXAS PROJECT
UNITS 1 & 2
DOCKET NOS. STN 50-498, STN 50-499
SUPPLEMENT TO RELIEF REQUEST FOR APPLICATION OF AN ALTERNATIVE TO THE ASME BOILER AND PRESSURE VESSEL CODE SECTION XI EXAMINATION REQUIREMENTS FOR CLASS 1 PIPING WELDS
(RELIEF REQUEST RR-ENG-2-16)

NRC Question:

The relief request states that none of the segments evaluated would create a concern for containment isolation or bypass, or adversely impact systems important to Large Early Release Frequency. Please elaborate. For example, is all Class 1 piping inside containment and do all the potential accident sequences caused by the failure of all segments have a small conditional containment failure probability?

Response:

All Class 1 piping is contained fully inside containment; therefore, the impact of pressure boundary failure on containment bypass and LOCA outside containment is not an issue. Instead, pressure boundary failure is analyzed for impact on the conditional Large Early Release Frequency.

The general philosophy for addressing containment performance is to assure that the conditional probability of Large Early Release Frequency, given core damage, is no greater than 0.1. For higher probabilities, a higher consequence category may be applied consistent with the conditional core damage probability.

There are no individual sequences in this analysis that approach a conditional probability of 0.1 for Large Early Release Frequency. In general, the results of the Level 2 Probabilistic Safety Assessment indicate a very low potential for loss of containment integrity and no apparent containment vulnerabilities. As stated in the South Texas Project Probabilistic Safety Assessment, the Large Early Release Frequency is 1.4E-7/yr and Core Damage Frequency is 9.1E-6/yr. This results in a conditional probability for Large Early Release Frequency of 0.015. This is sufficient margin to ensure that consideration of Large Early Release Frequency does not affect the consequence rank based on Core Damage Frequency.

There are several important plant features that play an important role in supporting the favorable results regarding containment performance. These features include:

- A high containment pressure capacity relative to the possible range of pressure loads that could be imposed during a severe accident.

- The location of the Residual Heat Removal system inside the containment.

- Redundant isolation valves in the Low Head Safety Injection System that reduce the potential for interfacing systems LOCA events.

- Configuration of the lower compartment and reactor cavity which limits the pressure rise in containment following high pressure melt injection.

Based on the above, the Large Early Release Frequency due to early core damage and structural failure of the containment does not affect the consequence rank.