

September 23, 2009

Mr. Scott Head, Manager  
Regulatory Affairs  
STP Nuclear Operating Company  
P. O. Box 289  
Wadsworth, TX 77483

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 227 RELATED TO SRP  
SECTIONS 5.3 FOR THE SOUTH TEXAS PROJECT COMBINED LICENSE  
APPLICATION

Dear Mr. Head

By letter dated September 20, 2007, STP Nuclear Operating Company (STP) submitted for approval a combined license application pursuant to 10 CFR Part 52. The U. S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within **30** days of the date of this letter. If changes are needed to the safety analysis report, the staff requests that the RAI response include the proposed wording changes.

S. Head

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If you have any questions or comments concerning this matter, I can be reached at 301-415-6197 or by e-mail at [Tekia.Govan@nrc.gov](mailto:Tekia.Govan@nrc.gov) or you may contact George Wunder at 301-415-1494 or [George.Wunder@nrc.gov](mailto:George.Wunder@nrc.gov).

Sincerely,

**/RA/**

Tekia V. Govan, Project Manager  
ABWR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-012  
52-013

eRAI Tracking No. 3744

Enclosure:  
Request for Additional Information

cc: William Mookhoek  
Richard Bense

S. Head

-2-

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NRO-002

OFFICE	CIB2	CIB2	NGE2/PM	OGC	NGE2/L-PM
NAME	SDowney	NRay	TGovan	SBrock	GWunder
DATE	09/11/2009	09/15/2009	9/22/09	09/15/2009	09/15/2009

**\*Approval captured electronically in the electronic RAI system.**

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**Request for Additional Information No. 3744 Revision 2**

**South Texas Project Units 3 and 4  
South Texas Project Nuclear Operating Co  
Docket No. 52-012 and 52-013**

**SRP Section: 05.03.02 - Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock  
Application Section: 05.03.02**

QUESTIONS for Component Integrity, Performance, and Testing Branch 2 (ESBWR/ABWR Projects) (CIB2)

**05.03.02-2**

The STP 3 & 4 Pressure and Temperature Limits Report (PTLR) is in accordance with Structural Integrity Associates Report No. SIR-05-044-A, Revision 0, which states that if finite element analysis is utilized to develop P-T limits for any RPV region, then additional information shall be provided in the PTLR. PTLR Section 5.0 states that the stress distributions used to develop the P-T limits are based on the stress analysis data calculated by finite element model analysis. However, the applicant has not provided the information described in SIR-05-044-A. Therefore, the staff requests the following information:

- a. Identify the computer code(s) that were used in the finite element stress analysis
- b. For any computer codes used, describe how the code(s) were verified or benchmarked.
- c. Identify the assumptions of the finite element analysis. Necessary inputs to the analysis include any or all of the following:
  - A description of plant operating conditions used
  - Description of heat transfer coefficients used and the methodology used to calculate them
  - A description of the model developed, including materials, material properties, finite element mesh pattern, and geometry

**05.03.02-3**

To address PTLR Criterion 2(GL 96-03), describe how the surveillance capsule specimen examinations shall be used to update the PTLR curves.

**05.03.02-4**

To address PTLR Criterion 4(GL 96-03), clearly identify both the limiting adjusted reference temperature (ART) values and limiting materials at the 1/4T location (t= vessel beltline thickness) used in the development of the P-T limits.

Enclosure