December 6, 2010

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 367 RELATED TO SRP SECTION 3.9.2 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.

If you have any questions or comments concerning this matter, I can be reached at 301-415-8484 or by e-mail at Tom.Tai@nrc.gov or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

Sincerely,

/RA/

Tom M. Tai, Senior Project Manager
ABWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-012
52-013

eRAI Tracking No. 5256

Enclosure:
Request for Additional Information

cc: William Mookhoek
John Price
Loree Elton

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NAME	YWong	JDHerrity	TTai	GWunder
DATE	11/17/2010	11/17/2010	12/6/2010	11/29/2010

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information No. 5256 Revision 4

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co.
Docket No. 52-012 and 52-013
SRP Section: 03.09.02 - Dynamic Testing and Analysis of Systems Structures and Components
Application Section: 3.9.2

QUESTIONS for Engineering Mechanics Branch 2 (ESBWR/ABWR Projects) (EMB2)

03.09.02-44

In the October 18-19, 2010 audit of the subscale model test (SMT) and results, STP proposed to use the pressure measurement on the subscale steam dryer model to estimate the loading function on the full scale dryer. The staff raised concern about the adequacy of confirming the conservatism of the subscale-based dryer load with only one meaningful pressure data point from the K-6 steam dryer dome region. To demonstrate the steam dryer is designed with sufficient margin using the proposed approach, the staff is requesting confirmation that the proposed SMT-based dryer load approach has considered the following:

1. The SMT-based dryer load has met the following provisions:

    a. Sufficient number of pressure transducers on the dryer are used in the SMT.
    b. The scaling of the dryer loading has accounted for the effects of Reynolds number and medium properties. The submission also includes validation of the effects of these parameters.
    c. The frequency content and spectral shape of the pressure measurements on the K-6 dryer reasonably reflect those measured on the SMT dryer.
    d. The design load envelops the K-6 pressure measurements. This means that the design pressure distribution and the design differential pressure distribution on the dryer envelops the K-6 measurements.
    e. No safety relief valve (SRV) resonances are expected within the licensed range of operation.
    f. Conservative bias errors and uncertainties are included in the design.
    g. In the stress analysis of the dryer, the fatigue assessment should be based on ASME fatigue Curve C.

2. STP Unit 3 will operate at the same power level as K-6. The steam dryer of STP Unit 3 will be at least similar to, if not stiffer than the K-6 dryer. The load on STP unit 3 dryer will be smaller than that of K-6 because the SRV resonance will be suppressed.

3. The predictive analysis in the application should be supported by ABWR operating experience.

4. Conservatism on the factor of safety of the dryer outer hood will provide additional assurance of the design adequacy.

5. A license condition not to increase power level beyond approximately 60 percent during initial startup testing unless the limit curves are updated by the pressure measurements on the STP Unit 3 dryer.

Enclosure