May 7, 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. 105 RELATED TO SRP SECTION 05.04.07 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 301-415-6197 or by e-mail at Tekia.Govan@nrc.gov or you may contact George Wunder at 301-415-1494 or 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 and 52-013
eRAI Tracking No. 2539

Enclosure:
Request for Additional Information

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 or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

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Enclosure:
Request for Additional Information

cc:
William Mookhoek
Richard Bense

Distribution:
PUBLIC
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ADAMS Accession No. ML091271090 NRO-002

OFFICE	SRSB/TR	SRSB/BC	NGE2/PM	OGC	NGE2/L-PM
NAME	JBudzynski	JDonoghue	TGovan	SBrock	GWunder
DATE	11/14/2008	11/14/2008	05/07/2009	11/17/2008	11/18/2008

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

OFFICIAL RECORD COPY

Request for Additional Information No. 2539 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 05.04.07 - Residual Heat Removal (RHR) System
Application Section: 5.4.7.1.1.10

QUESTIONS for Reactor System, Nuclear Performance and Code Review (SRSB)

05.04.07-1
In conjunction with Subsection 5.4.7.1.1.6, the staff reviewed sheet 11 of Figure 7.3-4 and the logic sequencing of the various RHR modes in FSAR Subsection 7.3.1.1, Systems Descriptions, to assist in clarifying STD DEP 5.4-3 departure, and it was noted that the wetwell spray mode logic sequencing did not mention or reference that wetwell spray mode "must be used in conjunction with the suppression pool (S/P) cooling mode" to support the description in Subsection 5.4.7.1.1.6. The applicant states that the wetwell and drywell operating logic sequencing most commonly occurs after LPFL initiation and proceeds through step (viii) which describes the wetwell spray valve alignment without including the suppression pool mode valve alignment. Provide an explanation for excluding the suppression pool mode valve alignment in this logic sequence or provide a wetwell spray mode function "only" logic sequence which includes the suppression pool valve alignment.

05.04.07-2
During the review of Section 5.4.7, the staff referred to Subsection 7.3.1.1.3 to supplement the review of STD DEP 5.4-3 departure and found several editorial errors in (b) Logic Sequencing subsection. In the first editorial, the applicant refers to "LPCF initiation"; however, the acronym LPCF is not listed in Tier 1 Appendix B, Abbreviations and Acronyms. The staff believes this acronym should be LPFL. Correct the acronym or provide justification for using it and add it to Appendix B. Also, in (b) Logic Sequencing subsection (ii), there are two "to" string together in the sentence. Remove one of the "to".

05.04.07-3
In STD Departure 5.4-3 Table 5.4-5, the RHR relief valves E11-F028A-C and E11- F051A-C lift pressure was changed from 3.44 MPaG to 3.43 MPaG to be consistent with DCD Tier 2 Figure 5.4-10 Sheets 3, 4 and 6. The staff concludes that change is conservative; however, since the change represents a difference of approximately 1.5 psi, the staff is concerned whether the revised values affected the outcome of any analysis. Discuss the change in the calculated peak reactor pressure as a result of the set point change.

05.04.07-4
In STP DEP 6C-1 departure, the applicant stated that the new ECCS strainer design affects the available net positive suction head (NPSH). Provide the reference or discussion of the evaluation performed to determine the effects on the RHR system performance due to a reduction of approximately 16 percent in NPSH. Include a comparison of the available NPSH to the required NPSH. Also, provide the reference to the experimental data that verifies the calculated head loss overestimates the actual head loss in respect to NUREG/CR-6224.

Enclosure

05.04.07-5
The staff noted that an editorial error of the acronym for net positive suction head was submitted in the FSAR Revision 2. In Subsection 5.4.7.2.2, under Part (1) System Main Pumps, the net positive suction head is recorded as HPSH. It should be corrected to NPSH.

05.04.07-6
In addition to RHR Subsection 5.4.7.2.2, the applicant stated that STD DEP 6C-1 changes were applied to RHR Figure 5.4-11. The staff was unable to identify these changes. Identify the STD DEP 6C-1 changes on Figure 5.4-11.