June 27, 2008

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

SUBJECT: **REVISED** - REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 33 RELATED TO THE SRP SECTION 02.04.04 FOR THE SOUTH TEXAS COMBINED LICENSE APPLICATION

Dear Mr. Gibson:

By letter dated September 20, 2007, STP Nuclear Operating Company (STPNOC) 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 revised 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 45 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, you may contact me at 301-415-1146 or Raj.Anand@nrc.gov, or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

Sincerely,

/RA/

Raj Anand, Project Manager
ESBWR/ABWR Projects Branch 2
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-012
52-013
eRAI Tracking No: 244

Enclosure:
Request for Additional Information

cc: William Mookhoek

If you have any questions or comments concerning this matter, you may contact me at 301-415-1146 or Raj.Anand@nrc.gov, or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

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cc: William Mookhoek

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ADAMS Accession No.: ML081820301 (Revised)
ML081340408 **NRO-002**

OFFICE	SBPB/TR	SBPB/BC	NGE2/PM	OGC	NGE2/L-PM
NAME	HAhn*	MThaggard*	RAnand*	JBiggins*	GWunder*
DATE	5/06/08	5/08/08	6/27/08	5/09/08	5/12/08

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

OFFICIAL RECORD COPY

Revised - Request for Additional Information No. 244

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 02.04.04 - Potential Dam Failures
Application Section: 02.04S.4 - Potential Dam Failures

QUESTIONS

02.04.04-1

Describe all metrics in addition to the level of inundation, such as duration of inundation and flow velocity effects, considered in the design of safety-related SSCs.

02.04.04-2

Provide a discussion supporting the validity and conservativeness of the hydrostatic and hydrodynamic pressure assumptions used in the postulated MCR Breach and Delft3D-FLOW application.

02.04.04-3

Provide an explanation of how the structures specifically used in the STP modeling analysis of the postulated MCR breach were handled. Discuss the effects of omitting many existing and proposed structures on the flooding level estimates.

02.04.04-4

Explain the validity of the mesh resolution used in the Delft3D-FLOW application, and justify why more complex mesh options were not considered. During the safety audit this issue was explained as a typographical error. Verify that the change was made to the FSAR.

02.04.04-5

Explain (A) how the MCR bottom level was selected, (B) what water volume is stored between 20 and 27-29 ft MSL in the MCR, (C) any sensitivity analysis that was done to make the selection of a flat MCR bottom elevation, and (D) why more realistic bathymetry for the MCR was not used in the dam-failure analysis.

02.04.04-6

Describe sensitivity analyses undertaken to establish the basis for selecting a uniform Manning's in the postulated MCR Breach analysis.

02.04.04-7

Provide a description of any mass or volume balance checking that was performed for the postulated MCR Breach analysis.

02.04.04-8

(A) Provide Delft3D_Flow modeling input and output files including any calibration datasets of all postulated MCR breach simulations, (B) provide HEC-RAS input and output files for the Colorado River dam break analysis, and (C) in 2.4S.4.2.1.4, discuss the effect of increasing Manning's values on the estimation of flooding levels.

02.04.04-9

Provide an evaluation of the spatial extent of flooding during the postulated MCR breach. Would the flood from the postulated MCR breach cause an overflow of any basin ridgelines?

02.04.04-10

(A) Discuss the composition of the flood wave (essentially a mudflow) with respect to the sediment (generated from the gradual breach of the MCR embankment) carried with the flow including dynamic and impact forces. Discuss the conservatism of this case compared to the one presented in the FSAR. (B) A postulated failure of the MCR embankment breach could result in an accumulation of a large amount of bank material at the plant site. Discuss the effects of the settlement of these bank materials on the safety-related structures and the operation of the plant after the postulated MCR failure and how these effects, if significant, will be addressed in the Section 2.4S.14, Technical Specifications and Emergency Operations Requirements.