May 21, 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. 346 RELATED TO SRP SECTION 06.04 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 301-415-2849 or by e-mail at Stacy.Joseph@nrc.gov or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

Sincerely,

/RA/

Stacy Joseph, 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. 4735

Enclosures:
Request for Additional Information

cc: William Mookhoek
James Tomkins

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DATE	5/14/2010	5/17/2010	5/21/2010	5/20/2010

***Approval captured electronically in the electronic RAI system.**
OFFICIAL RECORD COPY

Request for Additional Information No. 4735 Revision 3

5/20/2010

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.04 - Control Room Habitability System
Application Section: 6.4.7 COL License Information

QUESTIONS for Containment and Ventilation Branch 2 (ESBWR/ABWR Projects) (SBCV)

06.04-3

The applicant's response to RAI 06.04-2 was reviewed by the NRC staff in conjunction with the information presented during the May 6, 2010 STP 3&4, Chapter 6.4, Toxic Gas Review audit. The staff has identified that the following three issues still need to be addressed by the applicant through a docketed response.

- Justify the maximum puddle size of 100 m radius (31,400 m^2 area) for Acetic Acid (Offsite Storage) assumed by ALOHA, as no berm geometry or natural topography details are provided that would constrain the puddle size to within a 100 m radius. The staff's confirmatory calculations using HABIT demonstrate that if not confined, the Acetic Acid could spill far beyond 100 m radius and, consequently, lead to a concentration level inside the control room significantly exceeding the IDLH.

- All toxic gas analysis runs using ALOHA automatically stop at 1hr, while some results show that the control room inside and outside concentrations are still increasing. Complimentary HABIT runs have shown that some control room concentrations can exceed IDLH past the first hour. Demonstrate or justify that the 1-hr analysis cut-off is conservative enough to meet the NRC rules and regulations.

- During the audit, the applicant took a new position on Sodium Hypochlorite (Onsite Storage). Now, rather than modeling the entire mass of Sodium Hypochrorite (28589 kg) as liquid, it only accounts for the decomposed chlorine gas mass that gets released during 1 hr. The correlations for chlorine release presented during the audit were highly sensitive to temperature. Submit the correlations and the methodology to calculate the chlorine decomposition rate from Sodium Hypochrorite. Justify the assumed ambient temperature to be conservative enough by performing a sensitivity analysis of the released chlorine amount and the resulting chlorine concentration inside the control room, to the ambient temperature.

Enclosure