

January 19, 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. 310 RELATED TO SRP  
SECTIONS 9.2.5 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 301-415-1695 or by e-mail at [Eric.Miller@nrc.gov](mailto:Eric.Miller@nrc.gov) or you may contact George Wunder at 301-415-1494 or [George.Wunder@nrc.gov](mailto:George.Wunder@nrc.gov).

Sincerely,

**/RA/**

Eric D. Miller, Project Manager  
ABWR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-012  
52-013

eRAI Tracking No. 4171

Enclosure:  
Request for Additional Information

cc: William Mookhoek  
Richard Bense

S. Head

-2-

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NRO-002

OFFICE	SBPA	SBPA	NGE2/PM	NGE2/L-PM
NAME	AStubbs	JSegala	EMiller	GWunder
DATE	12/17/2009	01/07/2010	01/19/2010	01/07/2010

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

**OFFICIAL RECORD COPY**

## Request for Additional Information No. 4171 Revision 3

**South Texas Project Units 3 and 4  
South Texas Project Nuclear Operating Co  
Docket No. 52-012 and 52-013  
SRP Section: 09.02.05 - Ultimate Heat Sink  
Application Section: 9.2.5 Ultimate Heat Sink**

QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)

### **09.02.05-8**

#### **RAI 9.2.5-8 (Supplemental RAI 9.2.5-1)**

GDC 44 requires reliable operation of the ultimate heat sink (UHS) under all anticipated conditions. In the COL application, Revision 2, different elevations related to the UHS were inconsistently reported. RAI 9.2.5-1 requested that the applicant address the inconsistency that appears in the COL application in regards to UHS water levels. The applicant responded to this RAI in a letter dated August 28, 2009 (Ref: U7-C-STP-NRC-090123). In this response, the applicant stated that the COL application will be modified to make all of the water levels cited within the application consistent. As part of the response the applicant included a new figure to replace COL Tier 2, Figure 1.2-35. However, the curb identified in the COL application, Tier 2, Section 9.2.5.2(5), and also identified in the version of Figure 1.2-35 in revision 2 of the application, has been eliminated from the new Figure 1.2-35. This curb is included to prevent sediment migration to the pump. No justification for the elimination of the curb has been provided. Provide justification for elimination of the curb.

### **09.02.05-9**

#### **RAI 9.2.5-9 (supplemental RAI 9.2.5-2)**

The ultimate heat sink (UHS) system must be designed to reject the required amount of heat under all conditions to satisfy GDC 44. The applicant did not state nor justify the amount of the excess margins that are included in the design to account for uncertainties, component wear and aging effects, fouling of heat transfer surfaces and spray nozzles, strainer debris collection, etc. This generated RAI 9.2.5-3. In the applicants response to this RAI (letter dated August 28, 2009; Ref: U7-C-STP-NRC-090123) the applicant stated that design of the UHS has not been finalized, and thus margins could not be provided. The applicant stated that their goal was to provide margins, and provided margins for related systems. The applicant also stated that margins for the UHS will be included in the performance requirements within the procurement process. Review of this information must be performed prior to issue of the SER. Provide the schedule information as to the when the information will be available and how it will be made available for NRC review.

### **09.02.05-10**

#### **RAI 9.2.5-10 (supplemental 9.2.5-3)**

STP COL FSAR Section 9.2.5.1(3), Interface Requirement, states that the ultimate heat sink (UHS) water chemistry limits will not be exceeded after operation for 30 days without makeup. However, the application does not demonstrate that the water chemistry is acceptable after 30 days of water loss without makeup. In a letter dated August 28, 2009 (Ref: U7-C-STP-NRC-090123) the applicant responded to RAI 9.2.5-5 and stated that the procurement process of the UHS equipment will obtain

equipment that is designed to operate using the worst projected water that might exist in the UHS after 30 days of operation without makeup. The applicant also stated that the heat loads will be lower at the end of this time period, so the potential fouling will not cause the system to operate without significant margin. The staff finds this response inadequate since there are no calculations to demonstrate that the design can accommodate the potential change in the water chemistry. The applicant is asked to provide an estimate of the water chemistry that might be obtained after 30 days of evaporation and demonstrate that the final design can successfully operate with the worst possible water chemistry.