



South Texas Project Electric Generating Station 4000 Avenue F - Suite A Bay City, Texas 77414

August 19, 2008  
ABR-AE-08000051

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville MD 20852-2738

South Texas Project  
Units 3 and 4  
Docket Nos. 52-012 and 52-013  
Impact of the Redesigned Ultimate Heat Sink on STP 3 & 4 COLA Review

- References:
1. Letter, M. A. McBurnett to Document Control Desk, "Submittal of Combined License Application Revision 1," dated January 31, 2008 (ML080700399)
  2. Letter, D. B. Matthews to M. A. McBurnett, "Staff review of the Combined License Application for South Texas Project, Units 3 and 4," dated January 30, 2008 (ML 080230721)

The Ultimate Heat Sink (UHS) is being redesigned from the description in the Combined License Application (COLA) Part 2 Section 9.2.5, included in Reference 1. The redesign replaces the single, large structure UHS that supplied both units with an UHS design featuring separate, stand alone structures for each unit. The purpose of this letter is to explain the reasons this redesign should not adversely affect the ongoing NRC reviews of Chapter 2 of the Final Safety Analysis Report (FSAR) for South Texas Project (STP) Units 3 and 4, in accordance with Reference 2.

The decision to change the design of the UHS was made based on our fundamental commitments to improving safety and the environment. The factors involved were:

- (1) As noted by the NRC during their initial site visit, the single structure contained a "common wall" separating the basin between each unit's respective equipment. Further evaluation disclosed that this configuration involved a potential common mode failure (of the common wall) that could affect each unit's capability for long term cooling. While a remote threat, changing to individual cooling towers eliminates this issue, and contributes to a small positive safety benefit.

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- (2) The single UHS had been located to the northwest of Unit 4. Our environmental report notes that this area is under evaluation as 0.2 acres of potential wetland (this determination has not been made to date). However, moving the UHSs to the south of each unit makes this issue moot. The new locations are in a previously established construction/laydown area for Units 1 and 2 and will have no environmental impact.
- (3) Moving the structures, as discussed with NRC's Office of Nuclear Security and Incident Response (NSIR), also improves security (the details of which are Security Sensitive Information and not for public disclosure pursuant to NRC regulations).

Accordingly, the new UHS configuration was reviewed and approved by South Texas Project Nuclear Operating Company (STPNOC) on April 23, 2008. STPNOC evaluated the redesign of the UHS to assess the impact on information previously submitted in the COLA. The following conclusions are based on a comparison between the proposed redesign and relocation of the UHS and the design submitted in COLA Revision 1, specifically in the following areas related to Chapter 2 of the FSAR:

#### Atmospheric Dispersion Parameters ( $\chi/Q$ )

In order to conservatively calculate the maximum  $\chi/Q$  values, the beneficial effects of structures and other mechanisms that may enhance dispersion, such as the vapor plume released by the UHSs, were ignored, as described in Attachment 1, Section 4.1.2, on page 11. As a result of this conservative methodology, the design and location of the UHSs will not affect the site meteorological data, the physical configuration of the release points and receptor locations, or dispersion patterns. Consequently, the  $\chi/Q$  values, including the Control Room values, are not changed by the redesign and relocation of the STP Units 3 & 4 UHSs.

#### Flooding Analyses

As shown in Attachment 1, Section 4.2.2, pages 13 and 14, Site flooding events and associated maximum water levels are not significantly affected, nor are the redesigned UHS structures affected differently, by site flooding events, except in the event of a postulated Main Cooling Reservoir (MCR) breach as described in FSAR Section 2.4S.4. The relocation of the UHS basins, the first safety-related structure to be impacted by the water from a MCR breach, results in increased flood levels (on the order of one foot, less than a 10% change) on the south (upstream) side of the UHS basins. No increase to the maximum water level is expected in the power block area. There are no access points on the south side of the redesigned UHS. These results are within the maximum water level and flooding conditions that the UHS and other safety-related facilities are designed to withstand. Placing the UHSs between the MCR and the Reactor Buildings acts as a first-impact flood-wave buffer and has a small, positive improvement on the effect of a MCR breach on the Reactor Buildings.

Groundwater Analyses

The assessment of the impact of the redesign and relocation of the UHSs is described in Attachment 2. The redesign of the UHSs has no effect on the docketed information on groundwater. Descriptions of groundwater flow directions and subsurface pathways are not affected, and impact on aquifer flows is expected to be negligible. The groundwater analyses are not adversely affected.

Based on these conclusions, as discussed in our public meeting with the NRC on July 23, 2008, we believe the reviews made by NRC staff to date on Chapter 2 of the FSAR should not be adversely affected by this change.

The STP 3 & 4 Engineering, Procurement, and Construction (EPC) team has reviewed these issues and produced two reports that are provided as attachments to this letter.

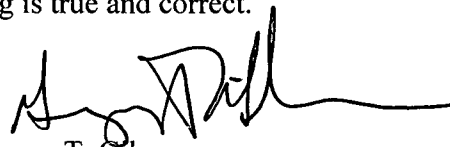
There are no commitments in this letter.

Should you have any questions, please contact me at (361) 972-4626, or Bill Mookhoek at (361) 972-7274.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on

August 19, 2008



Gregory T. Gibson  
Manager, Regulatory Affairs  
South Texas Project Units 3 & 4

Attachments:

1. "South Texas Project Units 3 & 4 Impact of the Ultimate Heat Sink Redesign on  $\chi/Q$  and Flooding Analyses," Revision 1, Project 12188-043 Report SL-ER-2008-0001, Prepared by Sargent & Lundy, dated July 25, 2008.
2. "Impact of UHS Relocation & Slurry Wall Construction on Groundwater," Revision 0, White Paper A3SC-P-SP-50003, Prepared by Fluor, dated June 13, 2008.

cc: w/o attachment except\*  
(paper copy)

Director, Office of New Reactors  
U. S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

Regional Administrator, Region IV  
U. S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, Texas 76011-8064

Richard A. Ratliff  
Bureau of Radiation Control  
Texas Department of State Health Services  
1100 West 49th Street  
Austin, TX 78756-3189

C. M. Canady  
City of Austin  
Electric Utility Department  
721 Barton Springs Road  
Austin, TX 78704

\*Steven P. Frantz, Esquire  
A. H. Gutterman, Esquire  
Morgan, Lewis & Bockius LLP  
1111 Pennsylvania Ave. NW  
Washington D.C. 20004

\*George F. Wunder  
Two White Flint North  
11545 Rockville Pike  
Rockville, MD 20852

(electronic copy)

\*George F. Wunder  
Loren R. Plisco  
U. S. Nuclear Regulatory Commission

Brad Porlier  
Steve Winn  
Eddy Daniels  
NRG South Texas 3/4 LLC

Jon C. Wood, Esquire  
Cox Smith Matthews

J. J. Nesrsta  
R. K. Temple  
Kevin Pollo  
L. D. Blaylock  
CPS Energy