

April 16, 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. 334 RELATED TO  
SRP SECTION 2.4 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 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.

S. Head

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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](mailto:Tekia.Govan@nrc.gov) or you may contact George Wunder at 301-415-1494 or [George.Wunder@nrc.gov](mailto:George.Wunder@nrc.gov).

Sincerely,

***/RA G. Wunder for:/***

Tekia V. Govan, Project Manager  
ABWR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-012, 52-013

eRAI Tracking No. 4477

Enclosure:  
Request for Additional Information

cc:  
Mr. William Mookhoek  
Mr. Richard Bense

S. Head

- 2 -

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cc:  
Mr. William Mookhoek  
Mr. Richard Bense

Distribution:  
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**NRO-002**

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|--------|----------|-----------|-----------|-----------|
| OFFICE | RHEB     | RHEB      | NGE2/PM   | NGE2/L-PM |
| NAME   | HAhn     | JCaverly  | TGovan    | GWunder   |
| DATE   | 3/8/2010 | 3/11/2010 | 4/15/2010 | 4/15/2010 |

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

**OFFICIAL RECORD COPY**

Request for Additional Information No. 4477 Revision 3

South Texas Project Units 3 and 4  
South Texas Project Nuclear Operating Co  
Docket No. 52-012 and 52-013  
SRP Section: 02.04.05 - Probable Maximum Surge and Seiche Flooding  
Application Section: 2.4.5

QUESTIONS for Hydrologic Engineering Branch (RHEB)

02.04.05-10

- (1) The applicant's estimation of the effects of the Probable Maximum Storm Surge (PMSS) are based on the estimation of storm surge using two approaches: (i) use of the SURGE model to estimate storm surge in the Gulf of Mexico and applying the estimated storm surge as a boundary condition in HEC-RAS modeling software to predict water surface elevations near the STP site, and (ii) extrapolation from storm surge values obtained from the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model near the STP site for Category 1 through 5 hurricanes in the Gulf of Mexico to estimate the storm surge for probable maximum hurricane (PMH) conditions. The applicant-estimated maximum PMSS water surface elevation at the STP site was produced by the second approach above (31.1 ft MSL) and did not reach the site grade (34 ft MSL).

Through independent confirmatory analysis, the staff determined that the maximum PMSS water surface elevation of 31.1 ft MSL, obtained by the applicant using the extrapolation procedure described above may not be technically valid or conservative. Based on its independent estimation of PMSS water surface elevations, the staff determined that the outer face of the MCR north embankment may be subject to wave action from PMSS. Because the outer face of the MCR embankment is only grass-lined and not protected by reinforced soil-cement or riprap, the staff postulated that the MCR embankment could possibly fail during the PMSS event. If this scenario were to occur, the MCR breach flood would coincide with the PMSS event.

Please provide the following information: (a) an analysis of the PMSS event using a conservative approach such as those predicted by a storm surge model (e.g., SLOSH) with input from appropriate PMH scenarios, (b) reasons why exposure of the outer face of the MCR embankment to the PMSS event would not lead to a breach, and (c) if an MCR breach is postulated under PMSS conditions, a revised estimate of the design-basis flood water surface elevation at the STP site.

- (2) In case the design basis flood level is changed, provide proposed text changes for 2.4S.10 considering the followings: (a) describe how safety-related facilities are designed to withstand the combination of newly established flooding conditions and wind wave run-up; (b) for safety-related facilities, re-identify the doors and hatches that are affected by the new design flood level; and (c) describe how the watertight doors and hatches are designed to resist static and dynamic forces of flooding without water penetrations, or provide any design specifications that could be applicable to this case.