October 8, 2009

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 279 RELATED TO SRP SECTION 19 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 301-415-3104 or by e-mail at Michael.Eudy@nrc.gov or you may contact George Wunder at 301-415-1494 or by e-mail at George.Wunder@nrc.gov.

Sincerely,

/RA/

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

Docket Nos. 52-012
52-013

eRAI Tracking Nos. 3805, 3806 and 3820

Enclosure:
Request for Additional Information

cc: William Mookhoek
Bill Stillwell

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NAME	JLai	EFuller	LMrowca	MEudy	GWunder
DATE	9/24/09	9/29/09	9/30/09	10/2/09	10/7/09

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

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Request for Additional Information No. 3805 Revision 0

10/8/2009

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 19.01 - Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed
Application Section: SRP 19.0

QUESTIONS for PRA Licensing, Operations Support and Maintenance Branch 2 (ESBWR/ABWR Projects) (SPLB)

19.01-28

This RAI is based on the applicant's response to RAI 19.01-20. In the ABWR PRA Level 1 model (SSAR Section 19D.4) description, the feedwater unavailability (Q) was estimated based on a three feedwater train design. In the STP R-COL design modification, 4 feedwater pumps (trains) are used. The staff requests that the applicant describe how Q values are estimated for the STP design.

Request for Additional Information No. 3806 Revision 0

10/8/2009

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 19.01 - Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed
Application Section: SRP 19.0

QUESTIONS for PRA Licensing, Operations Support and Maintenance Branch 2 (ESBWR/ABWR Projects) (SPLB)

19.01-29

In STP design departures (for example, new fans in the RSW/UHS system, 4KV switchgear related components in the MVES), there are some new basic event failure data which were not included in the original ABWR PRA Database (SSAR Section 19D.6). The staff requests that the applicant provide a list of these new basic events and the references where this data was obtained and how the data was calculated.

19.01-30

STP has reconstituted the ABWR PRA model (REC) using the information described in the SSAR section 19D. The NRC staff examined the sequence by sequence comparisons between the ABWR SSAR PRA model and the REC model at an audit on September 22-23, 2009. A number of discrepancies arose when no credit was taken for Control Rod Drive (CRD) flow and Containment Overpressure Protection System (COPS) and possibly RHR recovery actions prior to containment failure and core damage in the level-1 REC model. These differences could be substantially reconciled when credit for CRD and COPS (and, apparently, recovery of RHR) was taken via post-processing of the relevant accident sequence frequencies. Staff review of the SSAR also identified that while credit for COPS is not explicitly modeled in the level-1 PRA event trees, credit can be found in the containment event trees (CETs). For example, Figure 19D.5-10 of the SSAR (e.g., Amendment 33) shows the CET for the Class II plant damage state and corresponding sequences. COPS rupture disk opening (RD) for the branch path with no RHR recovery leads to successful core cooling and no core damage. Thus, the staff finds that the STP FSAR should include an explicit statement regarding possible credit taken for COPS for relevant events.

The staff would like to confirm that Control Rod Drive (CRD), Containment Overpressure Protection System (COPS) and RHR recovery are credited in both the STP plant-specific model and REC model. Therefore, the staff requests for the applicant to provide the following:

(1) Please reconcile the statement from Section 19.3.1.3 of the FSAR that *"The Control Rod Drive (CRD) pumps which have limited capacity have not been included in the success criteria"* with the observation that such credit may be necessary to substantially verify sequence by sequence results between the SSAR PRA results and the REC model.

(2) Please reconcile the absence of discussion regarding the success criterion for COPS in Section 19.3 and Table 19.3-2 of the STP 3&4 FSAR with the observation in SSAR Figure 19D.5-10 that

such credit may be necessary to substantially verify sequence by sequence results between the SSAR PRA and the REC model.

(3) Section 19.1.2 of the STP FSAR states that *"Although an AC-independent Firewater Addition System is incorporated in the design, no credit is taken for it in the calculation of core damage frequency."* However, Table 19.3-2 shows that ADS8 + 1 firewater addition system pump provides success for all transients. Please reconcile this discrepancy.

Request for Additional Information No. 3820 Revision 0

10/8/2009

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation
Application Section: Chapter 19

QUESTIONS for PRA Licensing, Operations Support and Maintenance Branch 2 (ESBWR/ABWR Projects) (SPLB)

19-28

During our audit with the applicant on September 23, 2009, results of the accident scenario LCHP with no drywell flooder were discussed. In order to support the staff's confirmatory assessment, the applicant is requested to send a copy of the MAAP 4.0.7 input file that you used to run that scenario. In addition, the applicant's response should include the event summary, log file, and plotfile 31, 33, and 35 outputs for that case.