August 27, 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. 260 RELATED TO SRP SECTION 6.2.2 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 - A. Muniz for/

Stacy K. Joseph, Project Manager
ABWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-012
52-013

eRAI Tracking Nos. 3207, 3333 and 3334

Enclosure:
Request for Additional Information

cc: William Mookhoek
James Tomkins

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Enclosure:
Request for Additional Information

cc: William Mookhoek
James Tomkins

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NGE 1/2 R/F	JGilmer,NRO	RidsNroDnrlNge2	
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ADAMS Accession No. ML092390496 NRO-002

OFFICE	SRSB/TR	SRSB/BC	NGE2/PM	OGC	NGE2/L-PM
NAME (3207)	JGilmer	JDonoghue	SJoseph **(AMuniz for)**	SKirkwood	GWunder
DATE	8/19/09	8/19/09	8/27/09	8/20/09	8/21/09
OFFICE	SBCV/TR	SBCV/BC	NGE2/PM	OGC	NGE2/L-PM
NAME (3333)	HWagage	MSnodderly	SJoseph **(AMuniz for)**	SKirkwood	GWunder
DATE	7/27/09	8/4/09	8/27/09	8/18/09	8/19/09
OFFICE	SBCV/TR	SBCV/BC	NGE2/PM	OGC	NGE2/L-PM
NAME (3334)	EMiller	MSnodderly	SJoseph **(AMuniz for)**	SKirkwood	GWunder
DATE	7/17/09	7/24/09	8/27/09	8/18/09	8/19/09

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

OFFICIAL RECORD COPY

Request for Additional Information No. 3207 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6C

QUESTIONS for Reactor System, Nuclear Performance and Code Review (SRSB)

06.02.02-2

Section 6C.1 of the STP FSAR Rev 2 states that the ABWR Design has committed to following the guidance provided in Regulatory Guide 1.82 Rev. 3 and the Utility Resolution Guide NEDO-32686. In the STP FSAR Section 6C.3, the applicant stated: "If required, downstream effects of material predicted to pass through the suction strainers will be evaluated in accordance with RG 1.82".

In RAI Question 06.02.02-1, the staff requested that STP describe how they will address the additional issues identified in RG 1.82 Rev 3 (including downstream effects). In STP response letter U7-C-STP-NRC-090038 (ML091270491), STP stated that an evaluation of downstream effects on fuel will be included in a future license amendment for fuel. During the June 30 – July 1 2009 audit of the STP suction strainers, STP stated that they planned to revise this approach. Please provide the following or describe how you plan to address the following items related to downstream fuel effects in the STP FSAR:

1) Provide an evaluation of the effects of debris that passes through the ECCS pumps suction strainer during long term cooling. Quantify the effects of downstream debris flow. Show what analyses have been completed or will be completed for debris in the core, and within valves or other restricting components, including fuel bundle debris filters. The debris may include chemical products, latent debris, or insulation that has passed through the suppression pool debris strainers. In this analysis, report the thermal conductivity and thickness of potential chemical products and debris on fuel rods and the increase in fuel rod temperature due to deposition and blockage in the core.

2) Report the change in the core flow with bounding blockages of valves and other components.

(a) Submit the flow blockage calculation results for the reactor fuel used in STP showing the critical power as a function of percent strainer blockage. Identify the percent blockage the fuel elements will experience at full power and what the effect on MCPR/PCT would be. Provide a figure showing CPR vs. fuel channel orifice flow area.

(b) Provide a list of assumptions made in the calculation of MCPR/PCT vs. % flow blockage.

Request for Additional Information No. 3333 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6C

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

06.02.02-3

Section 6C.2 of STP 3 & 4 FSAR states the following:

> The ABWR design also has additional features not utilized in earlier designs that could be used in the highly improbable event that all suppression pool suction strainers were to become plugged. The alternate AC (Alternating Current) independent water addition mode of RHR allows water from the Fire Protection System to be pumped to the vessel and sprayed in the wetwell and drywell from diverse water sources to maintain cooling of the fuel and containment.

In this situation, describe how you would account for the pressurization of the containment from a decrease in free volume as a result of continuous addition of water into the containment, if the above feature is used in the long term.

Request for Additional Information No. 3334 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6C Containment Debris Protection for ECCS Strainers

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

06.02.02-4

During STP ABWR Units 3 and 4 audit conducted on June 30 and July 1, STP stated in a presentation titled "12 Issues from GSI-191, STP 3&4 ECCS Strainer Audit, June 30, 2009." that the plant would eliminate all fiber in primary containment . STP plans to provide head loss calculations in accordance with 10 CFR 50.46 to show sufficient NPSH margin using zero fiber. Provide evidence that the INPO and EPRI guidance for cleanliness and Foreign Material Exlcusion (FME) will maintain zero fiber. If the program cannot demonstrate zero fiber, provide a maximum amount of fiber that would be expected as a result of implementing the cleanlinesss and FME program.

06.02.02-5

During STP ABWR Units 3 and 4 audit conducted on June 30 and July 1, STP stated in a presentation titled "12 Issues from GSI-191, STP 3&4 ECCS Strainer Audit, June 30, 2009" that the plant would eliminate all fiber in primary containment and minimize other debris by adopting INPO and EPRI guidance for cleanliness and foreign material exclusion (FME). Any change in that amount of assumed latent debris or zero fiber may impact NPSH calculations in support of 10 CFR 50.46. Please provide INPO and EPRI guidance in a cleanliness program, and also include it as an operational program and fully describe its implementation in FSAR Section 13.4 in accordance with Section C.IV.4.4 of Regulatory Guide 1.206.

Enclosure