

December 22, 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. 003 RELATED TO
SRP SECTION 07.07 FOR THE ABWR DESIGN CERTIFICATION RULE
AMENDMENT APPLICATION

Dear Mr. Head

By letter dated June 20, 2009, STP Nuclear Operating Company (STPNOC) submitted for approval an application to amend the ABWR design certification rule (DCR) 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 301-415-8484 or by e-mail at Tom.Tai@nrc.gov.

Sincerely,

/RA/

Tom M. Tai, Senior Project Manager
ABWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-001

eRAI Tracking No. 4167

Enclosures:
Request for Additional Information

cc: William Mookhoek
Fred Puleo

S. Head

-2-

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

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Request for Additional Information No. 4167 Revision 5

**ABWR Design Certification Amendment Project
South Texas Project Nuclear Operating Co
Docket No. 52-001
SRP Section: 07.07 - Control Systems
Application Section: Chapter 7.7 and 9.5.14**

QUESTIONS for Instrumentation, Controls and Electrical Engineering 2 (ESBWR/ABWR Projects)
(ICE2)

07.07-1

Question 16062:

Subsection 7.7.1.1 of ABWR Design Certification Rule (DCR) application references Chapter 9.5.14 in the description of the reactor water level instrumentation provided for the Alternate Feedwater Injection System. Subsection 9.5.14.4 reads: "...*The instrument lines to be used for monitoring the alternate feedwater injection are branched from the existing line and are connected to new level and pressure transmitters*".

GDC 24 "Separation of protection and control systems" reads "*The protection system shall be separated from control systems to the extent that failure of any single control system component or channel, or failure or removal from service of any single protection system component or channel which is common to the control and protection systems leaves intact a system satisfying all reliability, redundancy, and independence requirements of the protection system. Interconnection of the protection and control systems shall be limited so as to assure that safety is not significantly impaired*".

The staff request the applicant to clarify how and where the connection is made from which the AFI system gets its instrumentation signals and to demonstrate that the instrumentation included in the new AFI system does not create any potential for inadvertent actuation or creates challenges to current safety systems.

07.07-2

Question 16063:

In NUREG -0800, Chapter 7.7, Section III, Review Procedures, Paragraph 1, "Use of digital systems", it reads "...*control system software should be developed using a structured process similar to that applied to safety system software. ...*".

The staff recognizes that the applicant states that the AFI system is non safety related and as described in Subsection 9.5.14.2, it ...*provides enhanced safety during and after beyond design basis events*. However, similar to the ATWS Rule, the I&C components should be designed to sufficient quality. If the AFI I&C system is intended to be software based, the applicant should provide the software QA that would be utilized for developing the I&C system.

07.07-3

Question 16064:

10 CFR 52.47(b)(1) requires that a DC application contain “... *proposed inspections, tests, analyses, and acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a facility that incorporates the design certification has been constructed and will be operated in conformity with the design certification, the provisions of the Atomic Energy Act, and the commission’s rule and regulations...*”

In the application to amend the Design Certification for the US ABWR, the applicant should provide the ITAAC used to demonstrate that the I&C included in the AFI system does not adversely affect the plant safety systems and is adequately isolated from the said safety systems.