PMSTPCOL PEmails

From: Tai, Tom
Sent: Thursday, July 30, 2009 8:19 AM
To: Agles, James
Cc: STPCOL; Mookhoek, William
Subject: Letter 176 - RAI 3008
Attachments: LTR 176 ML0921004114.pdf

Jim,

Attached for you rinformation is an advanced copy of letter 176 transmitting RAI 3008 for Chapter 10.2.

Regards

Tom Tai
DNRL/NRO
(301) 415-8484
Tom.Tai@NRC.GOV

Hearing Identifier: SouthTexas34Public_EX
Email Number: 1530

Mail Envelope Properties (C56E360E9D804F4B95BC673F886381E71FBC778BD0)

Subject: Letter 176 - RAI 3008
Sent Date: 7/30/2009 8:18:42 AM
Received Date: 7/30/2009 8:18:44 AM
From: Tai, Tom

Created By: Tom.Tai@nrc.gov

Recipients:
"STPCOL" <STP.COL@nrc.gov>
Tracking Status: None
"Mookhoek, William" <wemookhoek@STPEGS.COM>
Tracking Status: None
"Agles, James" <jaagles@STPEGS.COM>
Tracking Status: None

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Files	**Size**	**Date & Time**
MESSAGE	204	7/30/2009 8:18:44 AM
LTR 176 ML0921004114.pdf	86993	

Options
Priority: Standard
Return Notification: No
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Sensitivity: Normal
Expiration Date:
Recipients Received:

July 29, 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. 176 RELATED TO SRP SECTION 10.02 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 301-415-8484 or by e-mail at Tom.Tai@nrc.gov or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

Sincerely,

/RA/

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

Docket Nos. 52-012
52-013

eRAI Tracking No. 3008

Enclosure:
Request for Additional Information

cc: William Mookhoek
James Agles

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 or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

Sincerely,

/RA/

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

Docket Nos. 52-012
52-013

eRAI Tracking No. 3008

Enclosure:
Request for Additional Information

cc: William Mookhoek
James Agles

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ADAMS Accession No. ML092100411 NRO-002

OFFICE	SBPA/TR	SBPA/BC	NGE2/PM	OGC	NGE2/L-PM
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DATE	6/01/09	6/01/09	6/02/09	6/12/09	6/12/09

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information No. 3008 Revision 2

7/29/2009

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 10.02 - Turbine Generator
Application Section: 10.2, "Turbine Generator"

QUESTIONS for Balance of Plant Branch 2 (ESBWR/ABWR) (SBPB)

10.02-1

In STP FSAR Tier 2, Section 10.2.2.4, “Turbine Overspeed Protection System,” the applicant stated that the normal speed control is the first line of defense against the turbine overspeed. Also, it is stated that the system includes the turbine main control valves, intermediate steam intercept valves, extraction system non-return valves, and fast acting valve-closing functions within the electro hydraulic control (EHC) system. The normal speed control unit utilizes three speed signals, loss of any of these signals initiates a turbine trip via emergency trip system (ETS). Further, it is stated that an increase in speed above setpoint closes the control and intercept valves in proportion to the speed increase. It is not clear to the staff from the FSAR description at what percentage of rated speed the normal speed control function proportionally closes and fully closes steam valves.

The regulatory basis and review criteria that the staff used for the turbine generator (TG) system is specified by General Design Criterion (GDC) 4, “Environmental and Dynamic Effects Design Bases,” as it relates to the TG system for protection of structures, systems, and components (SSCs) important to the safety from the effects of turbine missiles by providing a turbine overspeed protection system (with suitable redundancy) to minimize the probability of generation of turbine missiles. Also, SRP guidance in Item 2.B, Section III, “Review Procedure,” of SRP Section 10.2, “Turbine Generator,” states that for normal speed control, the EHC fully cuts off steam to the turbine at approximately 103 percent of the turbine rated speed by closing the control and intercept valves. Therefore, in order to meet this GDC 4 criteria and SRP guidance, the staff requests the applicant to provide clarification and/or additional information with respect to the details on the normal overspeed protection of the STP TG system, as it relates to GDC 4 criteria and SRP guidance in this regard.

10.02-2

STP FSAR Section 10.2.2.4, “Turbine Overspeed Protection System,” it is stated that if the normal speed control should fail, the overspeed trip devices close the main steam and intermediate stop valves. It is also stated that this overspeed trip device is the second line of defense against the turbine overspeed. It is further stated that with failure of the normal speed control system, the resulting turbine speed does not exceed 120 percent of the turbine rated speed. However, Items 2.C and 2.D of the SRP Section 10.2.III describe that the second line of defense for the turbine overspeed are: 1) a mechanical overspeed trip device that will actuate the control, stop, and intercept valves to close at approximately 111 percent of the rated turbine speed, and 2) at approximately 112 percent, an independent and redundant backup electrical overspeed trip device senses the turbine speed and closes all the above cited turbine valves, and protects turbine against the overspeed.

STP FSAR Section 10.2.2.4 is not clear in its description of the primary and secondary overspeed trip devices/systems with respect to design features and trip actuation setponits of these devices. Therefore, the staff requests the applicant to provide the following additional information and/or clarifications with full justifications:

1) Describe the setpoints for the normal overspeed and the primary and emergency overspeed systems, with full descriptions, how they function.

2 Provide how the two electrical overspeed (primary and emergency) systems are diverse. Describe, and also provide schematics and logic diagrams to depict how the overspeed systems are diverse and independent.

3 Clarify whether, all of these (normal and two) overspeed systems share any common components or processors/inputs. If so, provide an evaluation of the impact of failures of any such features/components.

4 Is there any software used for processors or performing trip logic actuations? If so, is it common to any of the above?

5 Explain the diversity and defense-in-depth used to defend against a common cause failure (CCF) of the processors.

6 More importantly, address how the STP turbine control and overspeed control systems meet the SRP acceptance criteria described in Section II, “Acceptance Criteria,” of SRP Section 10.2, and also described in Item 2.A in Section III (Review Procedure) of SRP Section 10.2.