AP1000DCDFileNPEm Resource

From: Adams II, Samuel L. [adamssl@westinghouse.com]
Sent: Tuesday, October 07, 2008 1:47 PM
To: Phyllis Clark
Cc: Perry Buckberg; Rhonda Carmon
Subject: FW: Additional RAI for SRP Section 15.4.6
Attachments: AP1000 15 4 6 additional RAIs (2).doc

Hi Phyllis,

I acknowledge receipt of the attached RAIs on SRP15.4.6.

I will let you know as soon as possible if a clarification call is necessary.

Thanks.

Sam

From: Phyllis Clark [mailto:Phyllis.Clark@nrc.gov]
Sent: Tuesday, October 07, 2008 6:12 AM
To: Adams II, Samuel L.
Cc: Eileen McKenna
Subject: Additional RAI for SRP Section 15.4.6

Hi Sam,

Attached are the additional RAIs **(RAI-SRP-15.4.6-SRSB-02 and RAI-SRP-15.4.6-SRSB-03)** that were written as a result of the phone call between NRC and Westinghouse on 10/1/08 concerning boron dilution for SRP Section 15.4.6. Please acknowledge receipt of the RAIs.

Thanks,

Phyllis

Hearing Identifier: AP1000_DCD_Review
Email Number: 111

Mail Envelope Properties (15C4FDCCF8DAC64088CF069737A9985B7FA7FC39B2)

Subject: FW: Additional RAI for SRP Section 15.4.6
Sent Date: 10/7/2008 1:46:55 PM
Received Date: 10/7/2008 2:20:58 PM
From: Adams II, Samuel L.

Created By: adamssl@westinghouse.com

Recipients:
"Perry Buckberg" <Perry.Buckberg@nrc.gov>
Tracking Status: None
"Rhonda Carmon" <Rhonda.Carmon@nrc.gov>
Tracking Status: None
"Phyllis Clark" <Phyllis.Clark@nrc.gov>
Tracking Status: None

Post Office: SWEC9966.w-intra.net

Files	**Size**	**Date & Time**
MESSAGE	709	10/7/2008 2:20:58 PM
AP1000 15 4 6 additional RAIs (2).doc	42048	

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

REQUEST FOR ADDITIONAL INFORMATION

FROM REACTOR SYSTEMS, NUCLEAR PERFORMANCE & CODE REVIEW BRANCH

AP1000 DCD REVISION 16, CHAPTER 15.4.6, "CVCS MALFUNCTION THAT RESULTS IN A DECREASE IN THE BORON CONCENTRATION IN THE REACTOR COOLANT"

RAI-SRP-15.4.6-SRSB-02
(Associated with OI-15.0)

The staff previously issued two RAIs (RAI-SRP-15.4.6-SRSB-01 and RAI-SRP-15.0-SRSB-01) regarding the "Limiting Setpoint Assumed in Analyses" for "boron dilution block on source range flux doubling" to Westinghouse. In responses to both RAI-SRP-15.4.6-SRSB-01 and RAI-SRP-15.0-SRSB-01, and as indicated in DCD Revision 17, the applicant proposes to increase the setpoint again from 2.2 (in DCD Rev. 16) to 3.0 (in DCD Rev. 17). Given this new proposed change in setpoint value, the staff needs additional information to complete its review. As a follow-up to RAI-SRP-15.4.6-SRSB-01, the staff requests the applicant to provide the following information:

a) Confirm that the boron dilution analysis in DCD 15.4.6 has been performed with the newly proposed safety analysis setpoint of 3.0 over 50 minutes, which demonstrates acceptable results.

b) Provide a detailed justification as to why the 36% allowance between the safety analysis and TS nominal setpoints of 3.0 and 2.2 over 50 minutes is sufficient to bound instrumentation uncertainties for the final equipment installation, or propose details on how to confirm the 3.0 over 50 minutes setpoint value is bounding for the final equipment installation.

RAI-SRP-15.4.6-SRSB-03

In Revision 17, DCD Section 15.4.6.2, as supplemented by APP-GW-GLR-080, Revision 0, "Mark-up of AP1000 Design Control Document Chapter 7" (TR80), the applicant proposes the following changes affecting dilution during Modes 3, 4, and 5, to be consistent with the Technical Specifications, DCD Section 9.3.6, "Chemical and Volume Control System," and the assumed conditions for the inadvertent boron dilution event:

	MODE 3		**MODE 4**		**MODE 5**	
	Changed From	**Changed To**	**Changed From**	**Changed To**	**Changed From**	**Changed To**
Reactor Coolant System Water Volume	7300 ft^3	7539.8 ft^3	2805 ft^3	7539.8 ft^3	2402 ft^3	2592.5 ft^3
Critical Boron Concentration	655 ppm	1281 ppm	898 ppm	1449 ppm	955 ppm	1483 ppm
Shutdown Boron Concentration	867 ppm	1509 ppm	1083 ppm	1649 ppm	1135 ppm	1675 ppm

The staff requests the applicant to provide the following information regarding the proposed changes above:

a) Provide the rationale for the changes in the RCS water volumes for different modes of operation. List water volumes in the reactor vessel (excluding upper head), reactor vessel upper head, hot leg, cold leg, steam generator, and normal RHR system. Justify that the water volumes used in the analysis are acceptable.

b) Provide the rationale for the changes in the critical and shutdown boron concentration, respectively, for different modes of operation and describe how the new values are obtained.