AP1000DCDFileNPEm Resource

From: Loza, Paul G. [lozapg@westinghouse.com]
Sent: Monday, January 05, 2009 6:33 PM
To: Perry Buckberg
Cc: Rhonda Carmon; Lindgren, Donald A.
Subject: FW: AP1000 Rev.17 Tier 1 RAIs - Updated
Attachments: RAIs SRSB 5.4.6_5.4.7_9.3.6 Tier 1 Rev 17.doc

Perry,

I acknowledge receipt of the attached RAIs for Westinghouse. I will let you know if a clarification call is necessary.

Thanks,

Paul

From: Perry Buckberg [mailto:Perry.Buckberg@nrc.gov]
Sent: Monday, December 22, 2008 9:57 AM
To: Loza, Paul G.
Cc: Sisk, Robert B.; Lindgren, Donald A.; David Jaffe; Bill Gleaves; Eileen McKenna
Subject: AP1000 Rev.17 Tier 1 RAIs - Updated

Paul,

One additional RAI - please delete my earlier e-mail.

Attached are 4 Tier 1 RAIs and one CVS RAI that result from review of DCD Rev. 17. The RAI SRP numbering is based on the Tier 2 systems discussed in the RAIs. Also, several of the RAIs (5.4.6-01, 5.4.7-03) were discussed in a 12/2/2008 conference call. Please acknowledge receipt of the attached and let me know ASAP if a phone conference will be needed.

Thanks,

Perry Buckberg
Senior Project Manager
Nuclear Regulatory Commission
Office of New Reactors
phone: (301)415-1383
fax: (301)415-5397
perry.buckberg@nrc.gov

Hearing Identifier: AP1000_DCD_Review
Email Number: 153

Mail Envelope Properties (E501235702183E47BF44683A3B6A1929013A462284C2)

Subject: FW: AP1000 Rev.17 Tier 1 RAIs - Updated
Sent Date: 1/5/2009 6:32:33 PM
Received Date: 1/5/2009 6:32:37 PM
From: Loza, Paul G.

Created By: lozapg@westinghouse.com

Recipients:
"Rhonda Carmon" <Rhonda.Carmon@nrc.gov>
Tracking Status: None
"Lindgren, Donald A." <lindg1da@westinghouse.com>
Tracking Status: None
"Perry Buckberg" <Perry.Buckberg@nrc.gov>
Tracking Status: None

Post Office: SWEC9966.w-intra.net

Files	**Size**	**Date & Time**
MESSAGE	1056	1/5/2009 6:32:37 PM
RAIs SRSB 5.4.6_5.4.7_9.3.6 Tier 1 Rev 17.doc	29248	

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

RAI-SRP 5.4.6-SRSB-01

In Revision 17 to DCD, Tier 1 Table 2.1.2-4, Inspection, Tests, Analyses, and Acceptance Criteria (ITAAC), item 11.b, the acceptance criteria for the opening times (after receipt of signal from the PMS) of the remotely operated automatic depressurization system (ADS) stages 1, 2 and 3 valves (RCS-PL-V001A/B, V002A/B, V003A/B, V011A/B, V012A/B, and V013A/B) have been changed to longer times. Westinghouse AP1000 – DCD Revision 17 Changes Matrix indicates that the stroke times for these valves are modified to match actuator capacity.

Explain whether the changes of the ITAAC acceptance criteria of these ADS valve stroke times are consistent with the assumptions of the ADS valve opening time delay and stroke time assumed in the Chapter 15 safety analyses, and describe the effects of these changes on the safety analysis results of the events that result in the ADS actuation, such as small break loss-of-coolant accidents.

RAI-SRP 5.4.7-SRSB-02

One of the safety-related functions provided by the AP1000 normal residual heat removal system includes a flow path for long term post-accident makeup to the containment inventory. In the AP1000 DCD Revision 17, the long-term post-accident containment makeup flow path was modified to improve and simplify the method by eliminating the air diaphragm operated valve RNS-PL-V006A in the reconfigured valve setup. The new realigned makeup flow path requires revision to the Tier 1 Table 2.3.6-1 which included deletion of valves RNS-PL-V046A and RNS-PL-V046B and the addition of the manual containment isolation test connection valve RNS-PL-V012. Eliminating V006, V046A and V046B in the reconfigured flow path results in the reduction of the testing and qualification requirements for these valves.

Provide an explanation on the process used to determine which RNS valves are included in Tier 1 Table 2.3.6-1.

RAI-SRP 5.4.7-SRSB-03

In DCD Tier 1, Section 2.3.6, Table 2.3.6-1, The Active Function of the RNS Discharge motor-operated containment isolation valve RNS-PL-V011 is changed from “Transfer Open/Transfer Closed” to “Transfer Closed.” Also the RNS suction CIV RNS-PL-V022 is also listed in Table 2.3.6-1 as Transfer Closed. In Tier 1 Section 1.1, definitions that apply to terms used in the design and ITAAC descriptions provide the following definition: Transfer Open (Closed) means to move from a closed (open) position to an open (closed) position. The definition does not clarify the selection of the Active Function for the valves in Table 2.3.6-1.

Provide an explanation on the selection process for the valves’ “Active Function”. (Also, since both RNS-PL-V011 and RNS-PL-V022 are normally closed, explain why their active functions are transfer closed.)

RAI-SRP 9.3.6-SRSB-01

In Revision 17 to DCD, Tier 1 Table 2.3.2-4, ITAAC, item 10.b, the acceptance criteria for the closing times of the Chemical and Volume Control System (CVS) makeup pump discharge containment isolation valves (CIV) CVS-PL-V090 and CVS-PL-V091 (after receipt of an actuation signal) have been changed from 10 to 30 seconds.

Explain whether the change in the acceptance criteria of these makeup pump discharge isolation valves is consistent with the assumption of the corresponding time delay assumed in the safety analysis of boron dilution events, and discuss the effects on the safety analysis results of these events.

RAI-SRP 9.3.6-SRSB-02

In DCD Revision 17, Table 9.3.6-2, the following CVS nominal design parameters are changed: the letdown heat exchanger shell side and tube side design temperatures are changed from 200°F and 650°F, respectively, to 150°F and 600°F; the design flows of the mixed bed and cation bed demineralizers, and the reactor coolant filter are changed from 100 gpm to 250 gpm; and the boric acid tank volume is changed from 70,000 to 73,515 gal. Westinghouse indicates that these changes are made to match report APP-CVS-M3-001, R0, which is not submitted for NRC review. The staff is requesting that Westinghouse provide the basis and justification for these changes to determine their acceptability.