AP1000DCDFileNPEm Resource

From: Loza, Paul G. [lozapg@westinghouse.com]
Sent: Thursday, February 12, 2009 9:13 AM
To: Christopher Proctor
Cc: Perry Buckberg; Rhonda Carmon; Ray, Thomas J.
Subject: Acknowledgement of RAI SRP-12.3 CHPB-01, RAI SRP-12.3 CHPB-02 and RAI SRP-12.3 CHPB-03

Chris,

I acknowledge receipt for Westinghouse of RAI-SRP-12.3-CHPB-01, 2, and 3. I will let you know if a phone call is required.

Thanks,

Paul Loza

From: Christopher Proctor [mailto:Christopher.Proctor@nrc.gov]
Sent: Tuesday, February 10, 2009 3:09 PM
To: Loza, Paul G.
Cc: Eileen McKenna; Serita Sanders; Rhonda Carmon
Subject: RAI SRP-12.3 CHPB-01, RAI SRP-12.3 CHPB-02 and RAI SRP-12.3 CHPB-03

Paul,

Three new RAIs related to Chapter 12 of REV 17 are detailed below. Please acknowledge receipt and let me know ASAP if a phone conference will be needed.

Thanks,

Christopher Proctor
Project Manager
Nuclear Regulatory Commission
Office of New Reactors
Christopher.Proctor@nrc.gov
Phone: (301)-415-0684

RAI SRP-12.3 CHPB-01

In its review of DCD Section 12.3, the staff identified areas in which additional information was necessary to complete its evaluation of the applicant's change. In tier 2 DCD subsection 12.3.1.1.1, the staff noted that the applicants' description now includes an integrated head package which combines the head lifting rig, control and gray rod drive mechanisms, lift columns, control rod drive mechanism cooling system and power and instrumentation cabling. Also the conventional top mounted instrumentation ports/conoseal thermocouple arrangement has been replaced with a combination thermocouple /incore detector system. The description of the change to include the integrated head package does not provide sufficient information to determine if the Containment area radiation zones are affected or the implementation results in an increase or decrease in the refueling dose estimates.

In Revision 17, Tier 2, Figure 12.3-1 (Sheet 8 of 16), Radiation Zones, Normal Operation/Shutdown Nuclear Island, EL 135'-3" indicates that the RV Head stand area may be a Plant Radiation Zone V (less than or equal to 1Rem/hr) when the RV head is in the stand, which is defined by Figure 12.3-1 (Sheet 1 of 16). In Revision 16, the same drawing indicated that the area for the RV stand would be a Plant Radiation Zone II, (less than or

equal to 2.5 mrem/hr) There are no supporting calculations to show that the Integrated Head Package will result in a dose rate of less than or equal to the original RV head configuration, or how this change is ALARA. Table 12.4-12, Dose Estimate for Refueling Activities, has not changed as a result of the addition of the design change implementing the integrated head package.
AP 1000 DCA, Revision 17, incorporated the Westinghouse Topical Report APP-GW-GLE-016, Revision 0, "Impact of In-core Instrumentation Grid, Quicklocs and Changes to Integrated Head Package" This report did not describe any changes to Section 12.4 and the dose assessment.
Provide a complete description of the how the placement of integrated head package and the revised and associated equipment in the Containment building meets the acceptance criteria of SRP 12.3-4.
Describe the effect on occupational exposures in and adjacent to the Containment building. Include this information in the DCD and provide a markup of the text and appropriate revised radiation zone maps and dose estimate tables in your response.

RAI SRP-12.3 CHPB-02

In AP1000 DCA, Revision 17, Tier 2 DCD Section 12.3.2.2.4, Fuel Handling Area Shielding Design, the applicant decreased the overall minimum allowable water depth above active fuel in the reactor cavity and spent fuel pool from 9.5 feet (Revision 16) to 8.75 feet in Revision 17 during fuel movement. With the reduction in the water level, the applicant did not identify the basis of its parameters included in Section 12.3.2.2.4 or why the change occurred.
The applicant has documented these previous changes in Westinghouse TR-121, "Spent Fuel Pool Water Level and Dose", APP-GW-GLN-121, Revision 0.
The applicant also previously responded to requests for additional information related to TR-121 and described assumptions used in its calculations for exposure of workers adjacent to the fuel handling areas.
Provide a complete description of the potential radiological effects and dose estimates associated with the reduction of the minimum water level over active fuel in the refueling and spent fuel pool.
Include this information in the DCD and provide a markup in your response.

RAI SRP-12.3 CHPB-03

In AP1000 DCA, Revision 17, Tier 2 DCD Section 12.3.2.2.9, Spent Fuel Transfer Canal and Tube Shielding, the applicant decreased the assumed overall concrete density for shielding design purposes from 147 lb/ft^3 to 140 lb/ft^3. The applicant provided no discussion of the effect of an approximate five percent decrease (in Revision 17) in the assumed shielding density of the transfer tube on area radiation levels during fuel movement. With the reduction in the concrete density, the applicant did not identify the basis of its parameters included in Section 12.3.2.2.9 or why the change occurred.
Provide a complete description of the potential radiological effects and dose estimates associated with the reduction of the concrete density in the spent fuel transfer canal and tube shielding.
Include this information in the DCD and provide a markup in your response.

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From: Loza, Paul G.

Created By: lozapg@westinghouse.com

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"Perry Buckberg" <Perry.Buckberg@nrc.gov>
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