PMSTPCOL PEmails

From: Joseph, Stacy
Sent: Wednesday, August 19, 2009 10:08 AM
To: 'Tomkins, James'
Cc: STPCOL
Subject: DRAFT RAIs for Chapter 6
Attachments: RAI 3321.doc; RAI 3333.doc; RAI 3334.doc; RAI 3392.doc; RAI 3435.doc

Jim,

Please review the attached DRAFT RAI related to SRP Section 6.4 and 6.2 within 5 working days. Please let me know if a telecon is needed in order to clarify these RAIs.

Thank you,

Stacy

Hearing Identifier: SouthTexas34Public_EX
Email Number: 1608

Mail Envelope Properties (CEEA97CC21430049B821E684512F6E5ECA55D4F28D)

Subject: DRAFT RAIs for Chapter 6
Sent Date: 8/19/2009 10:07:30 AM
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From: Joseph, Stacy

Created By: Stacy.Joseph@nrc.gov

Recipients:
"STPCOL" <STP.COL@nrc.gov>
Tracking Status: None
"'Tomkins, James'" <jetomkins@STPEGS.COM>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	204	8/19/2009 10:07:32 AM
RAI 3321.doc	27714	
RAI 3333.doc	30714	
RAI 3334.doc	31226	
RAI 3392.doc	34810	
RAI 3435.doc	30202	

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

Request for Additional Information No. 3321 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.04 - Control Room Habitability System
Application Section: 6.4 Habitability Systems

QUESTIONS for Containment and Ventilation Branch 2 (ESBWR/ABWR Projects) (SBCV)

06.04-***

Toxic Gas Evaluation for Control Room Habitability:

The staff has the following questions related to the information provided by the applicant for COL License Information Item 6.8.

- NRC Staff's confirmatory analysis of the STP 3&4 control room habitability showed that among the hazardous chemicals listed in Tables 2.2S of the FSAR; Acetic Acid (Water Transport), Gasoline (Water Transport), Sodium Hypochlorite (Onsite Storage), 1-Hexene (Onsite Storage), and Acetic Acid (Onsite Storage) posed toxic gas threat to the control room habitability. The NRC staff's computer simulations showed that an accidental release of these hazardous chemicals into the atmosphere could lead to the gas concentration exceeding the Immediately Dangerous to Life and Health (IDLH) level inside the control room (CR) after the resulting gas cloud reaches the CR intake. Provide details of the toxic gas evaluation (computer code inputs, results) to demonstrate that these chemical sources are not a threat to the STP 3&4 control room habitability.

- Sodium Hypochlorite and Gasoline are not available in ALOHA computer code's chemicals database. How were they analyzed? Provide any additional physical properties of the chemicals specified outside the database.

- Why is the IDLH of Sodium Hypochlorite provided as "10 ppm" of Chlorine in the FSAR? What is the physical process that would lead to the accumulation of chlorine inside the control room due to release of Sodium Hypochlorite in the atmosphere?

Request for Additional Information No. 3333 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6C

QUESTIONS for Containment and Ventilation Branch 2 (ESBWR/ABWR Projects) (SBCV)

06.02.02-***

Section 6C.2 of STP 3 & 4 FSAR states the following:

> The ABWR design also has additional features not utilized in earlier designs that could be used in the highly improbable event that all suppression pool suction strainers were to become plugged. The alternate AC (Alternating Current) independent water addition mode of RHR allows water from the Fire Protection System to be pumped to the vessel and sprayed in the wetwell and drywell from diverse water sources to maintain cooling of the fuel and containment.

In this situation, describe how you would account for the pressurization of the containment from a decrease in free volume as a result of continuous addition of water into the containment, if the above feature is used in the long term.

Request for Additional Information No. 3334 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6C Containment Debris Protection for ECCS Strainers

QUESTIONS for Containment and Ventilation Branch 2 (ESBWR/ABWR Projects) (SBCV)

06.02.02-***

During STP ABWR Units 3 and 4 audit conducted on June 30 and July 1, STP stated in a presentation titled "12 Issues from GSI-191, STP 3&4 ECCS Strainer Audit, June 30, 2009." that the plant would eliminate all fiber in primary containment . STP plans to provide head loss calculations in accordance with 10 CFR 50.46 to show sufficient NPSH margin using zero fiber. Provide evidence that the INPO and EPRI guidance for cleanliness and Foreign Material Exlcusion (FME) will maintain zero fiber. If the program cannot demonstrate zero fiber, provide a maximum amount of fiber that would be expected as a result of implementing the cleanlinesss and FME program.

06.02.02-***

During STP ABWR Units 3 and 4 audit conducted on June 30 and July 1, STP stated in a presentation titled "12 Issues from GSI-191, STP 3&4 ECCS Strainer Audit, June 30, 2009" that the plant would eliminate all fiber in primary containment and minimize other debris by adopting INPO and EPRI guidance for cleanliness and foreign material exclusion (FME). Any change in that amount of assumed latent debris or zero fiber may impact NPSH calculations in support of 10 CFR 50.46. Please provide INPO and EPRI guidance in a cleanliness program, and also include it as an operational program and fully describe its implementation in FSAR Section 13.4 in accordance with Section C.IV.4.4 of Regulatory Guide 1.206.

Request for Additional Information No. 3392 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6C

QUESTIONS for Containment and Ventilation Branch 2 (ESBWR/ABWR Projects) (SBCV)

06.02.02-***

This is RAI 2042 Supplement 1.

During an audit conducted at Westinghouse Office in Rockville, MD, on June 30 and July 1, 2009, the staff reviewed a summary report of the analyses Toshiba prepared for the replacement of ECCS suction strainers at a Japanese ABWR as stated in STP response to RAI 2042. The staff reviewed the following documents, including the summary report (the first one listed):

- The Evaluation Report for Net Positive Suction Head of Pump in Emergency core Cooling System, Proprietary, STP Doc. U7-RHR-M-RPT-DESN-0001, Rev. A, May 27, 2009.
- The Supplementary Documentation for the Head Loss Evaluation Report of Japanese ABWR ECCS Suction Strainer, Proprietary, STP Doc. U7-RHR-M-RPT-DESN-0002, Rev. A, June 24, 2009.
- The Evaluation Example of the Head Loss of the ECCS Suction Strainer and Pipe in the ECCS Pump Run-out Flow Condition, Proprietary, STP Doc. U7-RHR-M-RPT-DESN-0003, Rev. A, May 27, 2009.

The above documents lack sufficient details for the staff to complete its review. The staff expects relevant details to be provided as stated in Revised Content Guide for Generic Letter 2004-02 Supplemental Responses, November 21, 2007 (NRC Agencywide Documents Access and Management System (ADAMS) package Accession No. ML073110278) and Revised Content Guide for Generic Letter 2004-02 Supplemental Responses, March 28, 2008 (ADAMS Package Accession No. ML080230234).

A. Submit a calculation report on sizing of suppression pool recirculation pumps suction debris strainers for the staff review to determine that they meet the guidance of Regulatory Guide 1.82, Revision 3. This document should provide sufficient design details as requested in the guidance documents stated above. Or, justify an alternative approach.
B. The documents that the staff reviewed during the audit did not account for miscellaneous debris (equipment tags, tape, and stickers or placards affixed by adhesives) that was considered during the resolution of GSI 191 program. Describe how you accounted for miscellaneous debris.
C. During the audit STP stated that subsequent to RAI 2042 response, Toshiba had decided to eliminate all fiber insulation from STP 3 & 4 primary containment. As the staff stated during the audit, STP should account for the possibility of having

some fiber in the containment in terms of latent debris or confirm with a foreign material exclusion program that would eliminate all fiber from the STP 3 & 4 primary containment.

D. During the audit STP stated that the thermal insulation in STP 3 & 4 primary containment will be all stainless steel RMI. STP should account in the debris strainer design a possibility that it may not be able to use RMI for some small bore piping because of their locations, and thus, may have to use small quantities of other types of insulation like CalSil and fiber.

E. The STP's RAI 2042 response states that "the latent debris defined in the URG (which was used for the Hamaoka 5 testing) is considered bounding for STP 3 & 4." The URG proposed generic values were based on operating experience of boiling water reactors. Considering that ABWR is a newer plant of which operating experience was not considered in determining the URG proposed values, STP should confirm the valued used in the design with operating experience of ABWRs or propose a plan to confirm these values later.

F. The documents that the staff reviewed during the audit showed latent debris assumed in the design of the debris strainers include 195 lb of sludge. However, the STP's presentation on Downstream Effects at the audit included only four types of debris considered for downstream effects (fribrous debris, paint chips, concrete dust, and RMI shard), which does not include sludge. Justify not considering sludge as a downstream component of debris.

G. Provide a table listing how the STP ECCS suction debris strainer meets each regulatory position for BWRs that is stated in Regulatory Guide 1.82, Revision 3, or justify an alternative approach.

H. STP should provide summary information of the calculation report stated in item A above in STP 3 & 4 FSAR and incorporate it by reference in the FSAR.

I. Update FSAR as needed to reflect the response to this RAI (e.g., the commitment to use stainless steel reflective metallic insulation).

Request for Additional Information No. 3435 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 06.02.02 - Containment Heat Removal Systems
Application Section: 6.2.7.3

QUESTIONS for Containment and Ventilation Branch 2 (ESBWR/ABWR Projects) (SBCV)

06.02.02-***

STP 3 & 4 FSAR Section 6.2.7.3 states that “[p]eriodic inspections of the suppression pool for cleanliness are performed during outage periods. Maintenance procedures provide procedure steps for removing, at periodic intervals, sediment and floating or sunk debris from the suppression pool that the [suppression pool cleanup unit] does not remove."

State the frequency at which periodic inspections of the suppression pool cleanliness are performed and include these inspections as TS Surveillance Criteria.