

PMBelCOL NPEmails

From: Joseph Sebrosky
Sent: Wednesday, May 28, 2008 3:58 PM
To: David Terao; Michael Miernicki; Thomas Scarbrough; Ravindra Joshi
Subject: action: review of RAI 198 and whether we agree the questions should go to Westinghouse
Attachments: chapter 3_11 rais.doc

The purpose of this email is to provide followup information from a call that you had with TVA on 5/16/08 to discuss the attached RAIs. TVA finally got back to us on the RAIs and in their opinion all of the RAIs (not just 3 and 4) should go to Westinghouse. Their justification is contained below. Ravi should be back tomorrow, but if you agree that all of the questions should go to Westinghouse I would propose that Mike and Ravi work together to make this happen. If we disagree and believe the RAIs should be sent to TVA then I think that should happen.

TVA's basis for questions being asked of Westinghouse.

Question 3.11-1 and 3.11-2

TVA's basis for the question going to Westinghouse is DCD revision 16 section 3.11.5 states the following:

"The Combined License applicant is responsible for the maintenance of the equipment qualification file during the equipment selection and procurement phase. Westinghouse Electric Company LLC will act as the agent for the COL holder during the equipment design phase, equipment selection and procurement phase, equipment qualification phase, plant construction phase, and ITAAC inspection phases.

The COL holder will define the process and procedures for which the equipment qualification files will be accepted from Westinghouse and how the files will be retained and maintained in an auditable format for the period that the equipment is installed and/or stored for future use in the nuclear power plant."

Based on this revised section TVA believes that Westinghouse has the responsibility for responding to question 3.11-1 and 3.11-2

Question 3.11-3

TVA indicated that equipment qualification methodology using seismic experience data was removed from the DCD in accordance with APP-GW-GLN-006 Revision 4 and that if there are concerns in this area the question should be asked of Westinghouse

Question 3.11-4

Westinghouse indicated that vibration aging does not include acoustic resonance according to IEEE 382-96 and that if there are questions in this area the question should be asked of Westinghouse

I'll work with Ravi to make sure that we followup on these issues.

Thanks,

Joe

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Request for Additional Information No. 198 Revision 0

Bellefonte Units 3 and 4
TVA

Docket No. 52-014 and 52-015

SRP Section: 03.11 - Environmental Qualification of Mechanical and Electrical Equipment
Application Section: 3.11

QUESTIONS

03.11-1

Section 3.11, "Environmental Qualification of Mechanical and Electrical Equipment," in the Final Safety Analysis Report (FSAR) of the combined license (COL) application for the Bellefonte Nuclear Plant, Units 3 and 4, incorporates by reference Subsection 3.11.2.2, "Environmental Qualification of Mechanical Equipment," in the AP1000 Design Control Document (DCD) Tier 2, which references Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment," to AP1000 DCD Tier 2. Please specify the process for implementation of the provisions for environmental qualification of safety-related mechanical equipment (such as by procurement specifications) with consideration of the acceptance criteria in SRP Section 3.11. Describe or provide a reference to the following information (or indicate the status of and schedule for its availability) related to the environmental qualification (EQ) operational program for mechanical equipment for the Bellefonte Nuclear Plant, Units 3 and 4, including (a) process to determine the suitability of environmentally sensitive mechanical equipment needed for safety-related functions and to verify that the design of such materials, parts, and equipment is adequate, such as (i) identifying safety-related mechanical equipment located in harsh environmental areas, (ii) identifying nonmetallic subcomponents of such equipment, (iii) identifying environmental conditions and process parameters for which this equipment must be qualified, (iv) identifying nonmetallic material capabilities, and (v) evaluating the environmental effects on the nonmetallic components of the equipment; and (b) documentation for the successful completion of qualification tests and/or analysis, and qualification status for each type of equipment.

03.11-2

Subsection 3D.6.2.3, "Analysis of Safety-Related Mechanical Equipment," in Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment," to Chapter 3, "Design of Structures, Components, Equipment and Systems," in the AP1000 DCD summarizes the environmental qualification of safety-related mechanical equipment by analysis methods, but does not discuss implementation of the environmental qualification approach. For example, American Society of Mechanical Engineers Standard QME-1-2007, "Qualification of Active Mechanical Equipment used in Nuclear Power Plants," provides one approach for the environmental qualification of safety-related mechanical equipment. Discuss TVA's implementation of the environmental qualification approach, including the application of industry standards, prescribed in Subsection 3D.6.2.3, "Analysis of Safety-Related Mechanical Equipment," in Appendix 3D, "Methodology for Qualifying AP1000 Safety-

Related Electrical and Mechanical Equipment,” to Chapter 3, “Design of Structures, Components, Equipment and Systems,” in the AP1000 DCD.

03.11-3

Subsection 3D.6.3, “Operating Experience in the Equipment Qualification Program,” in Appendix 3D to Chapter 3 in the AP1000 DCD states that the COL applicant will provide documentation of the environmental qualification methodology where seismic experience data are used. If applicable, describe or provide a reference to the information (or indicate the status of and schedule for its availability) related to documentation of the environmental qualification methodology where seismic experience data are used.

03.11-4

The subsection titled “In-Service Vibration” in Subsection B.4.5, “External Stresses,” in Attachment B, “Aging Evaluation Program,” to Appendix 3D to Chapter 3 in the AP1000 DCD states that in-service pipe and flow induced vibration may be significant for line-mounted equipment. The subsection states that as a consequence, an additional vibration-aging step is included in the aging sequence. Operating experience has revealed that flow-induced vibration from acoustic resonance and hydraulic loading can adversely impact safety-related mechanical equipment at nuclear power plants. Describe how the additional vibration-aging step specified in the AP1000 DCD is to be included in the aging sequence for flow-induced vibration in the environmental qualification of safety-related mechanical equipment at Bellefonte.