

CCNPP3eRAIPEm Resource

From: Arora, Surinder
Sent: Friday, April 01, 2011 7:55 AM
To: 'Poche, Robert'; 'cc3project@constellation.com'
Cc: CCNPP3eRAIPEm Resource; Strnisha, James; Terao, David; Colaccino, Joseph; Miernicki, Michael; Wilson, Anthony; Vrahoretis, Susan
Subject: Draft RAI 302 CIB1 5615
Attachments: DRAFT RAI 302 CIB1 5615.doc

Rob,

Attached is DRAFT RAI No. 302 (eRAI No. 5615). You have until April 15, 2011 to review it and decide whether you need a conference call to discuss any questions in the RAI before the final issuance. After the phone call or after April 15, 2011, the RAI will be finalized and sent to you for response. You will then have 30 days to provide a technically complete response or an expected response date for the RAI.

Thanks.

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Request for Additional Information No. 302 (eRAI 5615)
DRAFT
4/1/2011

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 03.11 - Environmental Qualification of Mechanical and Electrical Equipment
Application Section: 3.11

QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects)
(CIB1)

03.11-7

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 Calvert Cliffs Nuclear Power Plant (CCNPP), Unit 3, incorporates by reference Subsection 3.11.2.2, "Environmental Qualification of Mechanical Equipment," in the U.S. EPR FSAR Tier 2, which references Appendix 3D, "Methodology for Qualifying EPR Safety-Related Electrical and Mechanical Equipment," to U.S. EPR FSAR Tier 2. As discussed in Regulatory Guide 1.206 and Commission Paper SECY-05-0197, COL applicants must fully describe their operational programs to avoid the need for ITAAC regarding those programs. The term "fully described" for an operational program should be understood to mean that the program is clearly and sufficiently described in terms for scope and level of detail to allow a reasonable assurance finding of acceptability. Further, Operational Programs should be described at a functional level and an increasing level of detail where implementation choices could materially and negatively affect the program effectiveness and acceptability.

Therefore, NRC staff requests UniStar to specify the process for implementation of the U.S. FSAR [****not a defined term - is it "U.S. EPR FSAR" or just "FSAR"**] provisions for environmental qualification of safety-related mechanical equipment in both mild and harsh environments (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 CCNPP, Unit 3, 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; (b) documentation for the successful completion of qualification tests and/or analysis, and qualification status for each type of equipment; and (c) the process for maintaining environmental qualification for safety-related equipment in both mild and harsh environments during the operational life of the plant.

03.11-8

In RAI 3.11-4, the NRC staff requested UniStar to address the operational aspects of the site-specific Environmental Qualification (EQ) Operational Program. In response dated February 21, 2011, UniStar stated that the operational program that supports implementation of the Maintenance Rule (10 CFR 60.65) and RG 1.160 monitors the effectiveness of maintenance at the plant, and therefore provides assurance that environmental consideration established during design are maintained on a continuing basis. In reviewing this response, NRC staff does not consider the Maintenance Rule and RG 1.160 to provide sufficient detail to maintain the EQ status of mechanical and electrical equipment. As discussed in Regulatory Guide 1.206 and Commission Paper SECY-05-0197, COL applicants must fully describe their operational programs.

Therefore, the NRC staff requests that UniStar address the operational aspects of the site-specific EQ program for safety-related mechanical and electrical equipment in both mild and harsh environments. For example, the Calvert Cliffs FSAR should indicate that the EQ operational programs as described in Section 3.11.2.2.6 of the U.S. EPR FSAR for maintaining equipment qualification during the operational life of the plant will include the following aspects: (1) evaluation of EQ results for design life to establish activities to support continued EQ; (2) determination of surveillance and preventive maintenance activities based on EQ results; (3) consideration of EQ maintenance recommendations from equipment vendors; (4) evaluation of operating experience in developing surveillance and preventive maintenance activities for specific equipment; (5) development of plant procedures that specify individual equipment identification, appropriate references, installation requirements, surveillance and maintenance requirements, post-maintenance testing requirements, condition monitoring requirements, replacement part identification, and applicable design changes and modifications; (6) development of plant procedures for reviewing equipment performance and EQ operational activities, and for trending the results to incorporate lessons learned through appropriate modifications to the EQ operational program; and (7) development of plant procedures for the control and maintenance of EQ records.

03.11-9

By letter dated November 29, 2010, the AREVA stated that a COL applicant that references the US. EPR FSAR will maintain the equipment qualification test results and qualification status file during the equipment selection, procurement phase and throughout the installed life in the plant. AREVA also stated that development of procedures and maintenance activities related to the EQ of operational program is the responsibility of the COL applicant and that COL applicants will be responsible for describing development of the Environmental Qualification Master Equipment List in support of their applications to construct and operate U.S. EPR plants.

Therefore, NRC staff requests UniStar to describe the process to maintain the equipment qualification test results and qualification status file during the equipment selection, procurement phase and throughout the installed life in the plant; development of procedures and maintenance activities related to the EQ of operational program; and development of the Environmental Qualification Master Equipment List which includes the equipment mission time.

03.11-10

Operating experience from nuclear power plants has revealed the potential for adverse flow effects during normal plant operation that can impact safety-related components (such as safety relief valves). As a result, equipment qualification programs need to address these adverse flow effects to provide confidence in the capability of safety-related equipment to be capable of performing their safety functions.

Please provide additional details how CCNPP Unit 3 plan to implement the U.S. EPR FSAR provisions for equipment qualification to address the effects of flow induced vibration.