PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Wednesday, September 23, 2009 4:53 PM
To: John.Conly@luminant.com; Donald.Woodlan@luminant.com; cp34-rai-luminant@mnes-us.com; Diane Yeager; Eric.Evans@luminant.com; joseph tapia; Kazuya Hayashi; Matthew.Weeks@luminant.com; MNES RAI mailbox; Russ Bywater
Cc: Ward, William; ComanchePeakCOL Resource
Subject: Comanche Peak RCOL RAI 73, Section 3.11
Attachments: RAI 2765 (RAI 73).doc

The NRC staff has identified that additional information is needed to continue its review of the combined license application. The NRC staff's request for additional information (RAI) is contained in the attachment. Luminant is requested to inform the NRC staff if a conference call is needed.

The response to this RAI is due within 42 calendar days of September 23, 2009**.**

Note: If changes are needed to the safety analysis report, the NRC staff requests that the RAI response include the proposed changes.

thanks,

Stephen Monarque
U. S. Nuclear Regulatory Commission
NRO/DNRL/NMIP
301-415-1544

Hearing Identifier: ComanchePeak_COL_Public
Email Number: 627

Mail Envelope Properties (9C2386A0C0BC584684916F7A0482B6CA0994BB)

Subject: Comanche Peak RCOL RAI 73, Section 3.11
Sent Date: 9/23/2009 4:52:53 PM
Received Date: 9/23/2009 4:52:55 PM
From: Monarque, Stephen

Created By: Stephen.Monarque@nrc.gov

Recipients:
"Ward, William" <William.Ward@nrc.gov>
Tracking Status: None
"ComanchePeakCOL Resource" <ComanchePeakCOL.Resource@nrc.gov>
Tracking Status: None
"John.Conly@luminant.com" <John.Conly@luminant.com>
Tracking Status: None
"Donald.Woodlan@luminant.com" <Donald.Woodlan@luminant.com>
Tracking Status: None
"cp34-rai-luminant@mnes-us.com" <cp34-rai-luminant@mnes-us.com>
Tracking Status: None
"Diane Yeager" <diane_yeager@mnes-us.com>
Tracking Status: None
"Eric.Evans@luminant.com" <Eric.Evans@luminant.com>
Tracking Status: None
"joseph tapia" <joseph_tapia@mnes-us.com>
Tracking Status: None
"Kazuya Hayashi" <kazuya_hayashi@mnes-us.com>
Tracking Status: None
"Matthew.Weeks@luminant.com" <Matthew.Weeks@luminant.com>
Tracking Status: None
"MNES RAI mailbox" <cp34-rai@mnes-us.com>
Tracking Status: None
"Russ Bywater" <russell_bywater@mnes-us.com>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	654	9/23/2009 4:52:55 PM
RAI 2765 (RAI 73).doc	49146	

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

Request for Additional Information (RAI) No. 2765

RAI # 73

9/23/2009

Comanche Peak Units 3 and 4
Luminant Generation Company, LLC.
Docket No. 52-034 and 52-035
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)

03.11-1

Luminant is requested to provide a response to the following information so the NRC staff can verify, using NUREG-0800 Standard Review Plan (SRP) 3.11, that Luminant fully described the Environmental Qualification Program and its implementation in conformance with the relevant requirements of 10 CFR 50.49; 10 CFR Part 50, Appendix A, General Design Criteria 1, 2, 4, and 23; and 10 CFR Part 50, Appendix B, Quality Assurance Criteria III, XI, and XVII.

Comanche Peak FSAR Section 3.11, “Environmental Qualification of Mechanical and Electrical Equipment,” incorporates by reference the provisions in the US-APWR Design Control Document (DCD) for the design process for the environmental qualification of mechanical equipment at Comanche Peak Units 3 and 4. Describe the implementation of the design process specified in the US-APWR DCD. For example, discuss the application of ASME Standard QME-1-2007, “Qualification of Active Mechanical Equipment used in Nuclear Power Plants,” specified in MHI Technical Report MUAP-08015, “US-APWR Equipment Environmental Qualification Program,” referenced in the US-APWR DCD. Also, discuss the availability of design and procurement specifications for NRC on-site review to demonstrate the implementation of the US-APWR environmental qualification (EQ) process for mechanical equipment to be used at Comanche Peak.

03.11-2

Comanche Peak FSAR Section 3.11 incorporates by reference the provisions in the US-APWR DCD in describing the operational program for environmental qualification (EQ) of mechanical equipment at Comanche Peak. Through a combination of the US-APWR DCD and Comanche Peak FSAR, fully describe the operational program for EQ of mechanical equipment per the guidance in Commission paper SECY-05-0197 and Regulatory Guide 1.206. For example, the COL applicant is requested to provide or reference the following information, or indicate the status of and schedule for its availability, related to the EQ operational program for mechanical equipment for the Comanche Peak, Units 3 and 4, including

(a) the 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.

The NRC staff will use the requested information to perform its review of the EQ operational program description for mechanical equipment based on the acceptance criteria in SRP Section 3.11.

03.11-3

Comanche Peak FSAR Section 3.11 provides plant-specific information in addition to incorporating by reference the US-APWR DCD. Confirm that the provisions in the US-APWR DCD for environmental qualification (EQ) of mechanical equipment will be applied to the plant-specific systems identified in the Comanche Peak FSAR, or describe plant-specific EQ provisions for these systems at Comanche Peak.

03.11-4

US-APWR DCD Tier 2, Section 3.11 states that the COL Applicant is responsible for assembling and maintaining the EQ document, which summarizes the qualification results for all equipment identified in US-APWR DCD Tier 2, Appendix 3D, “US-APWR Equipment Qualification List - Safety and Important to Safety Electrical and Mechanical Equipment,” for the life of the plant. Comanche Peak FSAR Section 3.11 states that CPNPP Units 3 and 4, at time of license issuance, assumes full responsibility for the EQ program, assembles, and maintains the EQ records for the life of the plant to fulfill the records retention requirements delineated in 10 CFR 50.49 and in compliance with the quality assurance program described in Chapter 17. In that 10 CFR 50.49 applies to electrical equipment, discuss the EQ record retention plans for mechanical equipment at Comanche Peak, Units 3 and 4.

03.11-5

US-APWR DCD Tier 2, Section 3.11 states that the COL Applicant is to describe periodic tests, calibrations, and inspections, to be performed during the life of the plant, which verify the identified equipment remains capable of fulfilling its intended function. The DCD also states that the procedures and results of qualification by tests, analyses, or other methods for the safety-related equipment are documented and maintained as part of the unit's EQ document.

As a replacement for these DCD provisions, Comanche Peak FSAR Section 3.11 states that this subsection addresses EQ implementation in conjunction with the initial design, procurement, construction, startup and testing up to the point of turnover and initial license issuance. The FSAR also states that implementation of the operational EQ program is included in Table 13.4-201. The FSAR specifies that periodic tests, calibrations, and inspections, which verify that the identified equipment remains capable of fulfilling its intended function, are described in a referenced technical report, US-APWR Equipment Environmental Qualification Program, MUAP-08015, by Mitsubishi Heavy Industries (MHI), which was submitted by MHI to NRC for review.

Confirm that the MHI responses to the NRC staff requests for additional information on the US-APWR Equipment Environmental Qualification Program Technical Report, MUAP-08015, and any modifications to the report, will be met as part of the EQ program for Comanche Peak Units 3 and 4.

03.11-6

US-APWR DCD Tier 2, Subsection 3.11.1.2, "Definition of Environmental Conditions," states that the COL Applicant may revise the environmental parameters indicated in the DCD based on site-specific considerations. Comanche Peak FSAR Subsection 3.11.1.2 of the same title states that any parameters based on site-specific considerations are identified in the EQ documentation described in Section 3.11. Specify any site-specific environmental parameters to be used for the Comanche Peak EQ program that differ from the US-APWR DCD EQ program description.

03.11-7

US-APWR DCD Tier 2, Section 3.11.3, "Qualification Test Results," specifies that the COL Applicant is to describe how the results of the qualification tests are to be recorded in an auditable file in accordance with requirements of 10 CFR 50.49(j). The DCD also specifies that such a record is maintained for the entire period during which the related equipment remains installed in the plant, stored for future use, or is held for permit verification.

As a replacement for these DCD provisions, Comanche Peak FSAR Section 3.11.3 of the same title states that test results for site-specific electrical and mechanical equipment are maintained with the project records as auditable files. The FSAR states that such records are maintained from the time of initial receipt through the entire period during which the subject equipment remains installed in the plant, is stored for future use, or is held for permit verification. The FSAR indicates that the license holder for CPNPP Units 3 and 4 assumes full responsibility for the EQ program at time of license issuance. Finally, the FSAR specifies that the EQ records are maintained for the life of

plant to fulfill the records retention requirements delineated in 10 CFR 50.49 and in compliance with the quality assurance program described in Chapter 17.

In that 10 CFR 50.49 applies to electrical equipment, clarify that the FSAR provisions for EQ record retention applies to all electrical and mechanical equipment within the scope of the EQ program for Comanche Peak, Units 3 and 4, and indicate any differences in record retention for electrical and mechanical equipment.

03.11-8

US-APWR DCD Tier 2, Section 3.11.4, “Loss of Ventilation,” specifies that the COL Applicant is to qualify site-specific electrical and mechanical equipment (including instrumentation and control, certain accident monitoring equipment) using an equivalent qualification process to that delineated for the US-APWR Standard Plant. The DCD states that this includes equipment that is subject to environmental control systems including heat tracing and air conditioning.

As a replacement for these DCD provisions, Comanche Peak FSAR Section 3.11.4 of the same title states that site-specific electrical and mechanical equipment (including instrumentation and control and certain accident monitoring equipment), subject to environmental stress associated with loss of ventilation or other environmental control systems including heat tracing, heating, and air conditioning, is qualified using an equivalent qualification process to that delineated for the US-APWR standard plant.

Describe the “equivalent qualification process” to be used to qualify site-specific electrical and mechanical equipment, subject to environmental stress associated with loss of ventilation or other environmental control systems including heat tracing, heating, and air conditioning, for NRC review in support of the Comanche Peak COL application.

03.11-9

US-APWR DCD Tier 2, Section 3.11.5, “Estimated Chemical and Radiation Environment,” specifies that the COL Applicant is to identify chemical and radiation environmental requirements for site-specific qualification of electrical and mechanical equipment (including instrumentation and control, and certain accident monitoring equipment). The DCD indicates that this equipment is to be qualified using an equivalent qualification process to that delineated for the US-APWR standard plant.

As a replacement for these DCD provisions, Comanche Peak FSAR Section 3.11.5 (as modified in the Updated Tracking Report, Revision 0, dated April 2, 2009) states that chemical and radiation environmental requirements for site-specific electrical and mechanical equipment (including instrumentation and control and certain accident monitoring equipment) are to be included in the Equipment EQ Technical Report (MHI Technical Report "US-APWR Equipment Environmental Qualification Program", MUAP-08015). The FSAR also states that this equipment is qualified using an equivalent qualification process to that delineated for the US-APWR standard plant. Describe the “equivalent qualification process” to be used to qualify the referenced site-specific electrical and mechanical equipment for NRC review in support of the Comanche Peak COL application.

03.11-10

US-APWR DCD Tier 2, Section 3.11.6, “Qualification of Mechanical Equipment,” specifies that the COL Applicant is to provide the site-specific mechanical equipment requirements, and that this equipment is to be qualified using an equivalent qualification process to that delineated for the US-APWR standard plant.

Comanche Peak FSAR Section 3.11.6 of the same title states that site-specific mechanical equipment requirements are to be included in Table 3D-201 by completion of detailed design. The FSAR also states that this equipment is qualified using an equivalent qualification process to that delineated for the US-APWR standard plant. Describe the “equivalent qualification process” to be used to qualify the mechanical equipment in support for the NRC review of the Comanche Peak COL application.

03.11-11

Part 10, “Inspections, Tests, Analyses And Acceptance Criteria (ITAAC) And Proposed License Conditions,” of the Comanche Peak Units 3 and 4 COL application states that the operational programs (section 2.3) identified in Table 13.4-201, “Operational Programs Required by NRC Regulation and Program Implementation,” and their implementation by the milestones indicated in the table is a potential condition to the license. Part 10 of the Comanche Peak COL application does not specify a license condition for implementation of operational programs.

Discuss the plans to develop license conditions for operational program implementation consistent with the guidance in Regulatory Guide 1.206 and Commission paper SECY-05-0197. For example, RG 1.206, Section C.IV.4.3 states that the COL will contain a license condition that requires the licensee to submit to the NRC a schedule, 12 months after issuance of the COL, that supports planning for and conduct of NRC inspections of operational programs. The schedule should be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until either the operational programs in FSAR Table 13.4-201 have been fully implemented or the plant has been placed in commercial service, whichever comes first.