

PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Wednesday, December 14, 2011 4:53 PM
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Cc: ComanchePeakCOL Resource; Galvin, Dennis
Subject: Comanche Peak RCOL Chapter 3 - Section 3.9.6 - RAI Number 244
Attachments: RAI 6222 (RAI 244).docx

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 35 calendar days of **December 14, 2011**.

Note: The NRC staff requests that the RAI response include any proposed changes to the FSAR.

thanks,

Stephen Monarque
U. S. Nuclear Regulatory Commission
NRO/DNRL/NMIP
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Hearing Identifier: ComanchePeak_COL_Public
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Request for Additional Information (RAI) No. 6222, COLA Revision 2

RAI Letter Number 244

12/14/2011

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

SRP Section: 03.09.06 - Functional Design Qualification and Inservice Testing Programs for Pumps,
Valves, and Dynamic Restraints
Application Section: 3.9.6

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

03.09.06-21

As a supplement to RAI 2772, question 03.09.06-1, the NRC staff requested, in RAI 6027, question 03.09.06-13, that the Comanche Peak COL applicant discuss the implementation of the provisions in the US-APWR Design Control Document (DCD) for the functional design and qualification of pumps, valves, and dynamic restraints. For example, the staff requested that the Comanche Peak COL applicant address its application of ASME QME-1-2007, "Qualification of Active Mechanical Equipment used in Nuclear Power Plants," as accepted in Revision 3 to NRC Regulatory Guide (RG) 1.100, "Seismic Qualification of Electrical and Active Mechanical Equipment and Functional Qualification of Active Mechanical Equipment for Nuclear Power Plants," consistent with the US-APWR DCD. The staff noted that it routinely audits COL applicants regarding their inservice testing (IST) program as part of the COL application review. Therefore, the staff requested that the Comanche Peak COL applicant provide a schedule for the availability of a sample of design and procurement specifications for pumps, valves, and dynamic restraints for audit by the NRC staff.

In its response to RAI 6027, question 03.09.06-13, the Comanche Peak COL applicant stated in its submittal dated November 7, 2011, that the US-APWR DCD is being revised to specify that the functional design and qualification of pumps, valves, and dynamic restraints will be performed in accordance with ASME QME-1-2007 as accepted in Revision 3 to RG 1.100. In that the FSAR incorporates the DCD by reference, the Comanche Peak COL applicant stated that it will apply ASME QME-1-2007 for the design and qualification of pumps, valves, and dynamic restraints for Comanche Peak Units 3 and 4. However, the Comanche Peak COL applicant stated that the design and procurement specifications for pumps, valves, and dynamic restraints for the site-specific design might not be available for audit by the NRC staff prior to COL issuance. The NRC staff considers the planned revision to the US-APWR DCD to specify the use of ASME QME-1-2007 as accepted in Revision 3 to RG 1.100 for the functional design and qualification of pumps, valves, and dynamic restraints to be acceptable for reference in the Comanche Peak FSAR.

The NRC regulations in 10 CFR 52.79(a)(11) require COL applicants to provide a description of the programs and their implementation necessary to ensure that systems and components meet the requirements of the ASME *Boiler and Pressure Vessel Code*

and the ASME *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code) in accordance with 10 CFR 50.55a. In performing its evaluation of the description and implementation of the IST program as required in 10 CFR 52.79(a)(11) for previous COL applications, the NRC staff has reviewed the description of the IST program provided in the COL application together with the incorporation by reference of the Design Certification DCD, and conducted an audit of a sample of design and procurement specifications for pumps, valves, and dynamic restraints to be used at the applicable nuclear power plant.

As a supplement to RAI 6027 question 03.09.06-13, the NRC staff requests that the Comanche Peak COL applicant provide information (either in sample design and procurement specifications or in the Comanche Peak FSAR) that specifies the implementation of the IST program sufficient for the NRC staff to make a finding regarding compliance with 10 CFR 52.79(a)(11). For example, the information to be provided with respect to implementation of the IST program for valves should include a description of the following:

- (1) Design, qualification, testing, inspection, surveillance, and documentation requirements;
- (2) Codes and standards to be applied and their justification;
- (3) Regulatory guides and Code cases to be applied;
- (4) Design life requirements for valve, actuator, and internal parts;
- (5) Design-basis differential pressure and flow calculation methodology;
- (6) Valve design, qualification, and application requirements (including Joint Owners Group program scope, fluid conditions and ambient temperature);
- (7) Valve seating surface design, qualification and inspection requirements;
- (8) Design, qualification, and inspection requirements for valve internal parts, dimensions, and clearances;
- (9) Valve thrust and torque operating requirement methodology and assumptions;
- (10) Actuator design, qualification, testing, and sizing methodology requirements;
- (11) Power supply design requirements such as AC/DC for motor actuators, degraded voltage, ambient temperature effects, battery life, and thermal overload devices;
- (12) Valve stem and actuator gear lubricants and lubrication requirements;
- (13) Stem Friction Coefficient design, qualification, and surveillance requirements;
- (14) Weak link design, qualification, and surveillance methodology requirements;
- (15) Environmental qualification methodology and qualification report requirements;
- (16) Design, qualification, surveillance, and replacement requirements for non-metallic parts;
- (17) Periodic verification and condition monitoring requirements;
- (18) Flow-induced vibration surveillance requirements;
- (19) Special case valve requirements not specifically addressed in QME-1 (such as squib valves); and
- (20) Responsibilities of valve vendor and licensee for design, qualification, testing, and documentation.

03.09.06-22

As a supplement to RAI 2772 question 03.09.06-2, the NRC staff requested in RAI 6027 question 03.09.06-14 that the Comanche Peak COL applicant confirm that the Comanche Peak FSAR combined with the US-APWR DCD provides a full description of

the IST program for pumps, valves, and dynamic restraints for Comanche Peak Units 3 and 4. The staff requested that the Comanche Peak COL applicant submit any planned modifications to the Comanche Peak FSAR to fully describe the IST program where the US-APWR DCD provisions need to be supplemented. The staff also requested that the Comanche Peak COL applicant clarify the reference to Nonmandatory Appendix A, "Preparation of Test Plans," of the ASME OM Code in the Comanche Peak FSAR to specify that the IST program for Comanche Peak Units 3 and 4 must satisfy the ASME OM Code, as incorporated by reference in 10 CFR 50.55a.

In its response to RAI 6027 question 03.09.06-14, the Comanche Peak COL applicant stated that the planned revisions to the US-APWR DCD by MHI will provide a full description of the IST program for Comanche Peak Units 3 and 4. The Comanche Peak COL applicant also stated that MHI plans to revise the US-APWR DCD to delete the reference to the ASME OM Code, Appendix A, and that a similar change will be made to the Comanche Peak FSAR. Since submittal of the Comanche Peak response, MHI has indicated plans to revise the US-APWR DCD to specify in a COL Information Item that the COL applicant is responsible for fully describing the IST program for pumps, valves, and dynamic restraints.

As a supplement to RAI 03.09.06-14, the NRC staff requests that the Comanche Peak COL applicant revise the Comanche Peak FSAR to respond to the COL Information Item by referencing the provisions in the US-APWR DCD and specifying any plant-specific information in the Comanche Peak FSAR to provide a full description of the IST program for pumps, valves, and dynamic restraints to be used at Comanche Peak Units 3 and 4. The staff also requests that the Comanche Peak COL applicant clarify its response to RAIs 03.09.06-15 and 16 regarding the COL Information Item as part of its response to this supplemental RAI.

03.09.06-23

As a supplement to RAI 2772 question 03.09.06-12, the NRC staff requested in RAI 6027 question 03.09.06-20 that the Comanche Peak COL applicant clarify its plans regarding license conditions for operational programs and their milestones with planned changes to the Comanche Peak COL application in support of its RAI response. In addition, the staff requested that the Comanche Peak COL applicant include a note in FSAR Table 13.4-201 for the milestone of full implementation of the IST program after generator on-line on nuclear heat specifying that appropriate portions of the IST program will be implemented as necessary to support the system operability requirements of the technical specifications.

In its response to RAI 6027 question 03.09.06-20, the Comanche Peak COL applicant stated that it planned to provide a regulatory commitment in lieu of a proposed license condition to address the schedule for implementing the operational programs for Comanche Peak Units 3 and 4. The Comanche Peak COL applicant also provided a planned revision to FSAR Table 13.4-201 to clarify the IST implementation milestone. The Comanche Peak COL applicant indicated during a telephone conference on November 30, 2011, its intent to provide a proposed license condition to address the schedule for implementing the operational programs for Comanche Peak Units 3 and 4 in response to RAI 03.11-20.

As a supplement to RAI 6027 question 03.09.06-20, the NRC staff requests that the Comanche Peak COL applicant clarify its RAI response by referencing its action planned in response to RAI 03.11-20. The staff also requests that the Comanche Peak COL applicant clarify the planned revision to FSAR Table 13.4-201 for an acceptable milestone for implementation of the IST program to specify “appropriate” portions rather than “acceptance” portions of the program.