PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Friday, October 02, 2009 1:43 PM
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Cc: Ward, William; ComanchePeakCOL Resource
Subject: Comanche Peak RCOLA, Section 9.4.5 - RAI # 110
Attachments: RAI 3230 (RAI 110).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 35 calendar days of October 2, 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: 667

Mail Envelope Properties (9C2386A0C0BC584684916F7A0482B6CA04A83CE51F)

Subject: Comanche Peak RCOLA, Section 9.4.5 - RAI # 110
Sent Date: 10/2/2009 1:42:34 PM
Received Date: 10/2/2009 1:42:36 PM
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Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	650	10/2/2009 1:42:36 PM
RAI 3230 (RAI 110).doc	39418	

Options
Priority: Standard
Return Notification: No
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Sensitivity: Normal
Expiration Date:
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Request for Additional Information (RAI) No. 3230

RAI # 110

10/2/2009

Comanche Peak Units 3 and 4
Luminant Generation Company, LLC.
Docket No. 52-034 and 52-035
SRP Section: 09.04.05 - Engineered Safety Feature Ventilation System
Application Section: COL FSAR 9.4.5.4.1

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

09.04.05-1

This Request for Additional Information (RAI) is necessary for the staff to determine if the application meets the requirements of 10 CFR 52.80(a), and General Design Criteria (GDC) 2, 4, 5, 17, and 60.

In combined license application (COLA), FSAR subsections 9.4.5.2.2, 9.4.5.2.3, 9.4.5.2.4, 9.4.5.2.5 and FSAR Table 9.4-201, Luminant assigns a heating coil capacity values to the heaters of the air handling units for the following systems:

- Class 1E Electrical Room HVAC System;
- Safeguard Component Area HVAC System;
- Emergency Feedwater Pump Area HVAC System; and
- Safety Related Component Area HVAC System

Class 1E power supplies provides the NRC staff assurance of the ability of the engineered safety features (ESF) air handling unit heaters to provide this safety function during and subsequent to postulated accidents, including loss of offsite power.

During its review, per the guidance of NUREG-800 Standard Review Plan (SRP) 9.4.5, the NRC staff found that Luminant did not include in the FSAR a reference section (9.4.8 in the DCD) or references that would provide the bases and calculations used in the sizing of the heaters for these ESF systems' air handling units. As such, Luminant is requested to either establish a clear performance criteria for the heaters and a means (ITAAC and/or startup testing) of verifying that heaters have been sided adequately; or provide the following information to justify the value selected:

- What is the basis for the sizing of the heaters?

- What is the design basis area temperature that the heaters are designed to maintain? The design basis should be clearly stated in the FSAR.

Additionally, in order to facilitate confirmatory calculations, please provide the inputs to the design calculations used in the derivation of the heating coil capacity value for the heater of the four main control room air handling units.

09.04.05-2

This Request for Additional Information (RAI) is necessary for the staff to determine if the application meets the requirements of 10 CFR 52.80(a), and General Design Criteria (GDC) 2, 4, 5, 17, and 60.

In COLA FSAR subsections 9.4.5.2.2, 9.4.5.2.3, 9.4.5.2.4 and 9.4.5.2.5 and FSAR Table 9.4-201, Luminant assigned heating coil capacity values to the forty-two air handling units of the following four ESF Ventilation Systems:

- Class 1E Electrical Room HVAC System;
- Safeguard Component Area HVAC System;
- Emergency Feedwater Pump Area HVAC System; and
- Safety Related Component Area HVAC System

This technical information is being provided to satisfy the requirements of US-APWR COL Information Item US-APWR COL 9.4(4) which reads;

"*The COL Applicant is to determine the capacity of cooling and heating coils that are affected by site specific condition*."

Item 2.C of SRP 9.4.5 section I, "Areas of Review", reads:

"Safety-related portions of the ESFVS are also reviewed with respect to the following:

C. The ability of the safety features equipment in the areas being serviced by the ventilation system to function under the worst anticipated degraded ESFVS system performance;"

The NRC staff notes that an excerpt from item 1 of SRP 9.4.5 section III, "Review Procedures", reads:

"…The system performance requirements are reviewed to determine that they limit allowable component operational degradation (e.g., loss of function, damper leakage) and describe the procedures that will be followed to detect and correct these conditions. …"

Item 2.C of SRP 9.4.5 section III, "Review Procedures", pertains to the subject in-service inspection and functional testing of system components important to safety.

The NRC staff found that neither COL Application FSAR 9.4 nor US-APWR DCD subsection 9.4.5.4 "Inspection and Testing Requirements" contain any type of testing or inspections of the ESF air handling unit (AHU) heaters for demonstrating/ maintaining operability of the heaters. The only information that seems to relate in DCD subsection 9.4.5.4 is the first sentence of the fifth paragraph which reads "*Air handling units are factory tested in accordance with Air Movement and Control Association standards.*"

The NRC staff notes that each AHU heater is safety-related and performs a significant safety-related function.

The NRC staff also notes that SRP 14.3.7 section II, "SRP Acceptance Criteria", item 1 reads

"…Tier I should be reviewed for consistency with the initial test program described in DCD Tier 2 Chapter 14.2..".

The COL applicant did not provide in the application an ITAAC update to include the ESF Ventilation System (ESFVS) air handling unit heaters in Tier 1 DCD subsection 2.7.5.2 "Engineered Safety Features Ventilation System". Similarly, the COL applicant did not provide in the application an update of the following preoperational tests to reflect the addition of these AHU heaters to the US-APWR plant:

- 14.2.12.1.96 Safeguard Component Area HVAC System Preoperational Test
- 14.2.12.1.97 Emergency Feedwater Pump Area HVAC System Preoperational Test
- 14.2.12.1.98 Class 1E Electrical Room HVAC System Preoperational Test
- 14.2.12.1.106 Safety-Related Component Area HVAC System Preoperational Test

The staff requests that a justification be provided as to why the heater capacity need not be verified through site-specific ITAAC or startup testing. Alternatively, appropriate ITAAC and startup testing should be submitted.