

PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Friday, January 29, 2010 1:34 PM
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Cc: ComanchePeakCOL Resource; Otto, Ngola
Subject: Comanche Peak RCOL Chapter 12.3 and 12.4 - RAI Number 135
Attachments: RAI 4206 (RAI 135).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 January 29, 2010.

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
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Email Number: 812

Mail Envelope Properties (9C2386A0C0BC584684916F7A0482B6CA0B7A5742EC)

Subject: Comanche Peak RCOL Chapter 12.3 and 12.4 - RAI Number 135
Sent Date: 1/29/2010 1:33:45 PM
Received Date: 1/29/2010 1:33:48 PM
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Files	Size	Date & Time
MESSAGE	652	1/29/2010 1:33:48 PM
RAI 4206 (RAI 135).doc		34810

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal

Expiration Date:

Recipients Received:

Request for Additional Information (RAI) No. 4206 COLA Revision 1

RAI Number 135

1/29/2010

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

SRP Section: 12.03-12.04 - Radiation Protection Design Features
Application Section: 12.3

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-11

10 CFR 20.1406, NUREG-0800, 'Standard Review Plan,' Section 12.03-12.04, Regulatory Guide (RG) 1.206, RG 4.21, RG 8.8, IEB 80-10

By letter dated September 30, 2009, the NRC staff issued RAI No. 3511 (CP RAI # 99). In Question 12.03-12.04-1 (13765), the NRC staff requested the applicant provide information regarding the design features and program elements needed to meet the requirements of 10 CFR 20.1406 for the systems structures and components for which the COL applicant has responsibility.

The applicant's response, dated November 11, 2009, noted several design features and program elements were provided to minimize contamination of the facility and the environment consistent with the guidance in Regulatory Guide 4.21 "Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning" and Nuclear Energy Institute template NEI 08-08A "Generic FSAR Template Guidance for Life-Cycle Minimization of Contamination".

The NRC staff has reviewed the applicant's response and found the following examples of where question portions were not fully addressed by the applicant's response.

- The applicant was asked to describe the provisions for those portions cooling water systems, down stream of the Liquid Waste Processing System (LWPS) connection points. While the applicant noted that evaporation pond piping would use leakage detection and inspection ports, neither this response, nor the response to RAI No. 2747 (CP RAI # 29), Question 11.02-2, dated September 24, 2009, noted this provision in the COL FSAR changes. This response also does not address the piping down stream of where the discharge piping from the evaporation pond connects to the cooling water discharge piping. The "Liquid Radioactive Release Lessons Learned Task Force Final Report" describes industry-operating experience involving inadvertent releases from cooling water piping or components located down stream of LWPS connections.
- COL FSAR COL 10.4(2) notes that with abnormal chemistry, the Steam Generator Blowdown System (SGBDS) directs SGBDS water to Waste Water Management Pond C. However, this response does not describe the leakage prevention and

leakage detection provisions for the piping to and from Waste Pond C and for the construction of Waste Pond C.

- The applicant was asked to describe leakage prevention and detection provisions for portions of the Steam and Condensate systems. The applicant's response only discussed the radiation monitoring detector installed on the condenser air ejector, and not prevention or early detection of releases from PWR secondary system piping. This radiation monitor is not capable of detecting tritium contamination. Electric Power Research Institute (EPRI) Technical Report (TR) 1008219 "PWR Primary-to-Secondary Leak Guidelines-Revision 3", notes that even without primary to secondary leakage, radioactive tritium will be present in PWR secondary side systems due to hydrogen diffusion through the Steam Generator u-tubes. Operating Experience regarding PWR secondary system underground piping leakage is discussed in Indian Point Nuclear Generating Unit 2 - NRC Integrated Inspection Report 05000247/2009002, dated May 14, 2009 (ML091340445), and May 24, 2004, Event Number 40771 for Surry Power Station.
- The applicant was asked to describe provisions for leakage prevention and detection from systems receiving water from the boron recycle system. The applicant's response addressed leakage prevention provisions for valves, but did not discuss the leakage prevention and detection methods for piping containing recycled fluid, especially those portions of piping that originated in one building, and terminated in a separate building, such as the piping to and from the Primary Makeup Water Storage Tanks.
- The applicant's response stated that heat exchangers separate radioactive fluid from non-radioactive fluid by tube walls. As noted in the USAPWR Design Control Document FSAR Tier 2 Section 9.1.3.2.1.3, the CCW/SFP heat exchanger is a plate type heat exchanger. Operating Experience from EPRI TR 1013470 "Plant Support Engineering: Guidance for Replacing Heat Exchangers at Nuclear Power Plants with Plate Heat Exchangers", notes that Plate Type heat exchanger gaskets are subject to leakage due to fouling of the gasket sealing surfaces during maintenance, and as a result of pressure spikes due to operational transients and events. The applicant did not discuss how the elements of the contamination minimization program will address operating experience showing the increased risk of leakage with Plate Type heat exchangers.

The examples provided are illustrative in nature, and do not portray an exhaustive review of the systems, structures and components, which should be considered during the 10 CFR 20.1406 review process.

Please revise and update the COL FSAR to describe in Comanche Peak FSAR Chapter 12, the design features, and related maintenance and inspection requirements, to prevent or mitigate contamination of the environment from COL applicant provided systems, structures and components, which may contain radioactive material. Alternately, describe and justify the specific approaches employed to prevent contamination of the environment and facility from COL Applicant provided Systems, Structures or Components containing radioactive material.