

PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Friday, February 11, 2011 2:32 PM
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Cc: ComanchePeakCOL Resource; Otto, Ngola
Subject: Comanche Peak RCOL Chapter 11 Section 11.2 - RAI Number 203
Attachments: RAI 5374 (RAI 203).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 February 11, 2011.

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

thanks,

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U. S. Nuclear Regulatory Commission
NRO/DNRL/NMIP
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Request for Additional Information (RAI) No. 5374, COLA Revision 1

RAI Letter Number 203

2/11/2011

Comanche Peak Units 3 and 4
Luminant Generation Company, LLC.
Docket No. 52-034 and 52-035
SRP Section: 11.02 - Liquid Waste Management System
Application Section: 11.2

QUESTIONS for Health Physics Branch (CHPB)

11.02-11

The NRC Staff's review of FSAR (Rev. 1) Section 11.2.1.5, Updated Tracking Report (UTR) (Rev. 4), and response to RAI 3401, Question 11.04-3 (RAI Letter Number 39) found insufficient information on the site-specific cost-benefit analysis (CBA) for the liquid waste management system (LWMS) to satisfy CP COL 11.2(5) to verify compliance with 10 CFR Part 50, Appendix I, Section II.D. COL FSAR Section 11.2.1.5 states the addition of processing equipment of reasonable treatment technology is not favorable or cost beneficial given the population dose of 2.14 person-rem/yr (Total Body), 2.04 person-rem/yr (Thyroid), and the equipment and operating costs in RG 1.110. Please address the following items and provide a mark-up on the proposed FSAR changes.

1. Confirm the above site-specific population doses to the Thyroid and Total Body from liquid effluents in FSAR Section 11.2.1.5 which appear to be evaluated prior to the restricted public use of Squaw Creek Reservoir at the Comanche Peak site.
2. In the response to RAI 3401, Question 11.04-3 (CP RAI #39), the site-specific CBA for the LWMS assumes effluent population doses of 5 person-rem/yr (Total Body) and 4 person-rem/yr (Thyroid). The response provides site-specific inputs to determine the Capitol Recovery Factor (CRF) and Labor Cost Correction Factor (LCCF), but does not identify augment(s) listed in Table A-1 to RG 1.110 or other associated costs described in Appendix A to RG 1.110 applied in the site-specific CBA calculation. Specifically, identify the LWMS augment(s) and all costs considered in the site-specific CBA and provide sufficient information for the staff to evaluate the bases and assumptions of these costs used to determine the site-specific CBA in order to verify compliance with NRC regulations and conformance to NRC guidance.

11.02-12

The NRC Staff's review of COL FSAR (Rev. 1) Section 11.2 and Tables 11.2-10R (Sheets 1 and 2), 11.2-11R (Sheets 1 and 2), and 11.2-12R (Sheets 1 and 2), 11.2-13R (Sheets 1 and 2), 11.2-14R (Sheets 1 and 2), and 11.2-15R, and UTR (Rev. 3 and 4) found insufficient information on the calculated annual liquid effluent releases and population doses to satisfy CP COL 11.2(4) and verify compliance with NRC regulations. Please address the following items and provide a mark-up on the proposed FSAR changes.

1. FSAR Section 11.2.3.1 describes annual average radionuclide releases are determined by the PWR-GALE code with reactor coolant activities in US-APWR DCD Tier 2 Section 11.1 and input design parameter values in DCD Table 11.2-9 (Sheets 1 and 2). The staff's calculations show different liquid effluent total releases (for "Isotope" and "All others") using the MHI PWR-GALE code, a proprietary version of the NRC PWR-GALE code, with no onsite laundry (no detergent waste effluent input). Given the observed differences, confirm that DCD Table 11.2-9 is incorporated by reference (IBR) (other than no detergent waste effluent input). If not IBR, tabulate the input parameter values in FSAR Section 11.2 and provide the basis for all departures.
2. FSAR Tables 11.2-10R (Sheets 1 and 2) and 11.2-11R (Sheets 1 and 2) present expected and maximum annual liquid effluent total releases (Ci/yr), respectively. Confirm whether these liquid effluent releases are calculated using plant-specific input values. Suggest adding a footnote to these tables to indicate the calculated liquid effluent releases are for a single new unit.
3. FSAR Tables 11.2-12R (Sheets 1 and 2) and 11.2-13R (Sheets 1 and 2) present expected and maximum annual liquid effluent fractions of concentration limits, respectively. Confirm whether these liquid effluent releases are calculated using plant-specific input values. Provide the methodology, basis, and assumptions on the dilution flow of 247,500 gpm in Note 2 of these tables. Suggest adding a footnote to these tables to indicate the unity rule calculations (sum-of-fractions) are for a single new unit.
4. FSAR Tables 11.2-15R presents population doses from liquid effluent releases during normal operation including AOOs. Suggest adding a footnote to this table to indicate the calculated liquid effluent doses are for a single new unit.
5. In FSAR Section 11.2 (and all other applicable FSAR sections), make reference to the MHI PWR-GALE code and the MHI Technical Report (TR) MUAP-10019[Proprietary]P (R0), MHI TR MUAP-10019[Non-Proprietary]NP (R0) (ML102850683), which describes the methodology, basis, and assumptions for the calculation of expected and maximum annual liquid effluent releases during normal operation including AOOs for plants referencing the US-APWR design.
6. FSAR Section 11.2.3.1 describes annual average liquid effluent releases are taken from DCD Table 11.2-10 (Sheets 1 and 2) to calculate population doses from liquid effluent releases. Given that FSAR Table 11.2-10R (Sheets 1 and 2) presents plant-specific liquid effluent releases, justify why population doses are not calculated using plant-specific liquid effluent releases.

7. In FSAR Section 11.2.3.1, describe why the various potential exposure pathways for liquid effluent releases are not considered in the LADTAP II code calculation of population doses from restricted public access of Squaw Creek Reservoir.
8. Update FSAR Section 11.2 to address the impact of the plant capacity factor of 80% applied in population dose calculations from liquid effluents when typical operating plant capacity factors exceed 90% for compliance with NRC regulations and 40 CFR Part 190 (see response to RAI 523-4246, Question 11.02-30, ML100770379).

11.02-13

The NRC Staff's review of FSAR (Rev. 1) and UTR (Rev. 4) found information that requires updating and/or needs to be addressed in FSAR Sections 11.2.3.2 and 2.4.13, and CP COL 11.2(3) on an assessment based on the methodology and description proposed in US-APWR DCD (Rev. 3) Tier 2, Section 11.2.3.2 and COL 11.2(3) to address the postulated failed liquid tank evaluation. Please address the following items and provide a mark-up of the proposed FSAR changes.

1. Update FSAR Sections 11.2.3.2 and 2.4.13 with an assessment based on the methodology and information proposed in US-APWR DCD (Rev. 3) Tier 2, Section 11.2.3.2 and COL 11.2(3) which uses the RATAF code to calculate source terms for the failed liquid tank (ML1025700671) as described in MHI TR MUAP-10019[Proprietary]P (R0), MHI TR MUAP-10019[Non-Proprietary]NP (R0) (ML102850683).
2. Make reference to MHI TR MUAP-10019[Proprietary]P (R0), MHI TR MUAP-10019[Non-Proprietary]NP (R0) (ML102850683) which describes the methodology, basis, and assumptions for failed liquid tank analysis for plants referencing the US-APWR design.
3. In FSAR Sections 11.2.3.2 and 2.4.13, fully describe the approach and results to select the failed liquid tank and provide the basis and assumptions on all site-specific parameter values in the respective updated FSAR sections for assessing the radioactive effluent release to surface or groundwater from a liquid tank failure using site-specific groundwater transport and soil properties to meet compliance with 10 CFR Part 20, Appendix B, Table 2, Column 2, under the unity rule, at the nearest potable water and surface water supplies in an unrestricted area.
4. Update FSAR Section 11.2.3.2 to address the impact of the plant capacity factor of 80% applied in the calculation of doses from a liquid containing tank failure

when typical operating plant capacity factors exceed 90% (see response to RAI 523-4246, Question 11.02-30, ML100770379).

5. Based on the liquid tank evaluation, update FSAR Section 11.2.3.4 to identify the failed liquid tank that bounds the contamination level due to failure of the evaporation pond.

6. Provide a copy of any input/output code files or calculation packages which show demonstration of compliance for the staff's review.

11.02-14

The NRC Staff's review of COL FSAR (Rev. 1) and UTR (Rev. 4) found information that requires updating and/or needs to be addressed in the FSAR. Please update the relevant FSAR sections such as 1.9, 11.2, and 13.5, etc. to satisfy CP COL 11.2(7) for identifying the implementation of the epoxy coatings program used in the LWMS, and address the milestones for decontaminable paints and suitable smooth-surface coatings applied to all areas inside the Auxiliary Building including the floor under the pumps of the detergent drain subsystem for compliance with 10 CFR 20.1406 and conformance to RG 1.54 (Rev. 1) or more recent industry standards and BTP 11-6 as proposed in US-APWR DCD (Rev. 3) Tier 2 Section 11.2 and COL 11.2(7) (ML092090556 and ML100770379). Provide a mark-up of the proposed COL FSAR changes.

11.02-15

The NRC Staff's review of COL FSAR (Rev. 1) Sections 11.2.3.4, 14.2, and 14.3, Tier 1 information, UTR (Rev. 4), and response to RAI 3401, Question 11.04-3 (CP RAI #39) found that information on testing and inspection requirements for the evaporation pond was not fully described. FSAR Section 11.2.3.4 provides design criteria and specifications for the evaporation pond (EP) and states the EP is designed and constructed in accordance with Texas Commission of Environment Quality (TCEQ) and other applicable standards (e.g., ASTM). The EP is equipped with several design features such as a liner, leak collection and detection instrumentation, radiation monitor with alarm, and back flow preventer, etc. for compliance with 10 CFR Part 20, Appendix B, Table 2; 10 CFR Part 50, Appendix A, GDC 64; 10 CFR 50.36a; and 10 CFR 20.1406. Please describe the testing and inspection requirements (i.e., TCEQ permit process, NRC ITP and ITAAC) that will be conducted to ensure that the EP and its features will be designed and constructed in accordance with TCEQ requirements and NRC regulations. Provide a mark-up of the proposed FSAR changes.

11.02-16

The NRC Staff's review of FSAR Section 11.2.1.6 of UTR (Rev. 4) found insufficient information on sampling procedures to measure tritium concentration in the evaporation pond and Squaw Creek Reservoir (Technical Specification limit of 30,000 pCi/l tritium). FSAR Section 11.2.1.6 states sampling procedures will need to be developed to confirm tritium concentrations for release from these surface water bodies. Please identify the

implementation milestones on the development of the tritium sampling procedures for compliance with NRC regulations and provide a mark-up of the proposed FSAR changes.