THE U.S. NUCLEAR REGULATORY COMMISSION HEALTH PHYSICS AUDIT ISSUES

This enclosure describes the U.S. Nuclear Regulatory Commission (NRC) staff's observations and issues that were discussed during the audit. The NRC staff informed Luminant Generation Company, LLC (Luminant) that as a result of this audit, the NRC staff may issue requests for additional information as a follow up action to the observations described below.

Chapter 11

1. The NRC staff inquired about a scenario involving the onsite and offsite dose consequences from the release of dust containing corrosion and activation products into the atmosphere in the event liquid should completely evaporate from the evaporation pond during drought conditions. On September 3, 2009, the NRC staff issued Request for Additional Information (RAI) 36 (3400) to address these issues.

2. The NRC staff inquired about the design information for the evaporation pond including material specifications for the piping system and provisions for radiation monitoring and representative sampling. On September 7, 2009, the NRC staff issued RAI 49 (3398) to address these issues. On August 14, 2009, the NRC staff issued RAI 29 (2747) to address the use of Inspections, Tests, Analyses, and Acceptance Criteria to ensure acceptable construction and operation of the evaporation pond.

3. The NRC staff inquired if guidance from Regulatory Guide (RG) 4.21 will be incorporated into the maintenance of the evaporation pond and how Luminant plans to perform an inspection of the associated piping system. The NRC staff also inquired about the incorporation of Combined License (COL) application, Part 2, Final Safety Analyses Report (FSAR), Chapter 13, in regards to an inspection and maintenance program for the evaporation pond. On September 20, 2009, the NRC staff issued RAI 71 (3592) to address these issues.

4. The NRC staff inquired about the design information for the Comanche Peak Nuclear Power Plant (CPNPP), Units 3 and 4 interim waste storage facility. Luminant was asked if the design criteria for the proposed interim radioactive waste storage facility for Class A, B, and C would conform to Part 30 and NRC Generic Letter 81-038, "Storage of Low-Level Radioactive Wastes at Power Reactor Sites," dated November 10, 1981. On September 4, 2009, the NRC staff issued RAI 39 (3401) to address these issues.

5. The NRC staff inquired about the design information on the shape of flow orifices and locations of connections into circulating water discharge header with consideration for sharing of structures, systems, and components, identified in COL application, Part 2, FSAR, Chapter 11, Section 11.2.3.1 as “will be “determined” [or developed] in the detail design phase”. On September 7, 2009, the NRC staff issued RAI 49 (3398) to address these issues.

6. The NRC staff informed Luminant it would need the LADTAP II input/output code files for liquid effluent releases and the GASPAR II input/output code files for gaseous effluent releases from the vent stack and evaporation pond for its review of effluent doses calculations using the modified PWR-GALE code. On September 3, 2009, and September 7, 2009, the NRC staff issued RAIs 36 (3400) and 49 (3398), respectively.

7. The NRC staff questioned how the Offsite Dose Calculation Manual (ODCM) for CPNPP, Units 1 and 2 could be applied to CPNPP, Units 3 and 4 in COL application, Part 2, Chapter 11, Section 11.5.2. Luminant has committed to following guidance in Nuclear Energy Institute (NEI)
07-09 in order to develop ODCM for CPNPP, Units 3 and 4. The ODCM for CPNPP, Units 1 and 2 does not address all aspects of Nuclear Energy Institute (NEI) 07-09 and may not be an adequate basis for the ODCM for CPNPP, Units 3 and 4. On September 3, 2009, the NRC staff issued RAI 36 (3400) to address these issues.

8. COL application, Part 2, FSAR, Chapter 11, Section 11.3.3.1, has potential discrepancies with FSAR, Chapter 11, Table 11.3-9R on calculated doses to total body and skin. The NRC staff will review the FSAR to determine if the summary evaporation pond doses should be tabulated similarly to the vent stack doses. The NRC staff will review the FSAR to determine if the maximum individual organ dose from the total evaporation pond and vent stack doses in FSAR, Chapter 11, Table 11.3-205 should be identified in the text with reference to the Adult GI-Tract dose similarly to the vent stack doses. On September 3, 2009, the NRC staff issued RAI 36 (3400) to address these issues.

9. COL application, Part 2, FSAR, Chapter 11, Table 11.2-14R should include goats and the NRC staff will confirm this analysis is for goats and cows as part of the irrigated foods-milk pathway dose analyses. On September 7, 2009, the NRC staff issued RAI 49 (3398) to address these issues.

10. COL application, Part 2, FSAR, Section 11.2.3.1, page 11.2-3, the last sentence states that an evaluation will be performed on CPNPP, Units 1 and 2 when these units retire from operation. The NRC staff stated that the operating units will not be evaluated as part of the review of the COL application.

Chapter 12

1. Luminant is implementing NEI 07-03, "Generic FSAR Template for Radiation Protection Program,' Revision 5 in the COL application, Part 2, FSAR, Section 12.5, and Luminant is also implementing a cobalt reduction program for the purpose of reducing cobalt in the reactor coolant system. Since NEI 07-03 does not specifically address a "Cobalt Reduction Strategy," the NRC staff inquired as to how Luminant planned to implement the specifics of the cobalt reduction program, such as establishing knowledge of the plant source term and understanding of input mechanisms and program elements to reduce unnecessary cobalt containing components. On September 30, 2009, the NRC staff issued RAI 100 (3319) to address these issues.

2. Luminant stated that one of the ALARA design features specified in COL application Part 2, FSAR, Chapter 12, that would be implemented, was the zinc injection program.

3. The NRC staff inquired whether construction workers would receive doses in excess of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20 limits from the movement and staging of refueling equipment for the current operating units. On October 5, 2009, the NRC staff issued RAI 119 (3318) to address these issue.

4. Luminant was asked to evaluate whether the current low level radioactive waste storage facility fence for CPNPP, Units 1 and 2 would result in construction workers receiving radiation doses in excess of 10 CFR 20 limits. On October 5, 2009, the NRC staff issued RAI 119 (3318) to address these issue.

5. Luminant was asked to confirm that the proposed Independent Spent Fuel Storage Installation site will be over 1,000 feet away from the nearest construction activity for CPNPP, Units 3 and 4. On October 5, 2009, the NRC staff issued RAI 119 (3318) to address these issue.

6. As part of Luminant's dose reduction program, the NRC staff observed that Luminant had planned to implement several actions. First, Luminant sought to pre-condition the surfaces of components to reduce adhesion of activated products. Second, Luminant was looking at the possibility of using submicron filters in the COL application, Part 2, FSAR, Chapter 9. Finally, Luminant was looking to use ultrasonic fuel cleaning as a means to reduce radiation dose exposure.

7. Because Luminant had not indicated whether or not radiation monitoring would be part of the evaporation pond design, the NRC staff will examine the FSAR to determine whether a radiation monitor for the evaporation pond should be part of the initial test program. On September 26, 2009, the NRC staff issued RAI 89 (3317) to address these issue.

8. Luminant is to examine if industrial respirators, that are also used in radiological controlled areas, should also reference Occupational Safety and Health Administration (OSHA) for chemical protection. RG 8.15, "Acceptable Programs for Respiratory Protection," Revision 1 (October 1999) states if an applicant is using respiratory protection to protect workers against nonradiological hazards, then the OSHA requirements apply. On September 30, 2009, the NRC staff issued RAI 100 (3319) to address these issue.