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CP-201000578
Log # TXNB-10032

Ref. # 10 CFR 52

April 20, 2010

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
ATTN: David B. Matthews, Director
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
PARTIAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION NO. 4310 AND 4312

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein a partial response to Request for Additional Information (RAI) No. 4310 and No. 4312 for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. RAI No. 4310 Question 2.4.3-9 involves calculation packages to be submitted, while RAI No. 4312 Question 2.4.5-5 involves hurricane surge and wave run-up.

Should you have any questions regarding these responses, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

The only commitment in this letter is captured on page 2.

I state under penalty of perjury that the foregoing is true and correct.

Executed on April 20, 2010.

Sincerely,

Luminant Generation Company LLC

Donald R. Woodlan

Rafael Flores

Attachments 1. Response to Request for Additional Information No. 4310 (CP RAI #143)
2. Response to Request for Additional Information No. 4312 (CP RAI #144)

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NRO

Regulatory Commitments in this Letter

This communication contains the following new or revised commitment which will be completed or incorporated into the CPNPP licensing basis as noted. The Commitment Number is used by Luminant for internal tracking.

Number	Commitment	Due Date/Event
7391	Calculation packages -011 and -012 are currently under revision in response to Questions 2.4.3-5, 2.4.3-7, 2.4.3-8, and 2.4.3-10. Calculation package -015 is currently under revision in response to RAI No. 4311 (CP #140) Questions 2.4.4-6 and 2.4.4-7. The revised calculation packages will be submitted upon completion.	December 20, 2010

Electronic distribution w/attachments

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Attachment 1

Response to Request for Additional Information No. 4310 (CP RAI #143)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4310 (CP RAI #143)

SRP SECTION: 02.04.03 - Probable Maximum Flood (PMF) on Streams and Rivers

QUESTIONS for Hydrologic Engineering Branch (RHEB)

DATE OF RAI ISSUE: 2/24/2010

QUESTION NO.: 02.04.03-9

NUREG-0800, Standard Review Plan (SRP), Section 2.4.3, 'Probable Maximum Flood (PMF) on Streams and Rivers,' establishes criteria that the NRC staff intends to use to evaluate whether an applicant meets the NRC's regulations.

The NRC staff issued RAI ID 3665 (RAI Number 105) Question Number 14248, in which the NRC staff asked "Provide a rationale for assumptions made in the modeling of instream flooding and drainage for computation of the PMF on rivers and streams affecting the site. Provide documentation and electronic versions of input files for all computer models used to compute the river and stream flooding."

The applicant responded in document CP-200901564-Log No TXNB-09067- (ML093230704) executed on November 13, 2009. The applicant directed the staff to the applicant's response to RAI ID 3665 (RAI Number 105). The staff has generated a supplemental RAI to address its need for additional information. The applicant's response to RAI 3665 Question 14248 also referred to Calculation "MITS004 - Probable Maximum Flood Calculation for Comanche Peak Nuclear Power Plant, Units 3 and 4 (HEC-HMS & HEC-RAS)", Revision 1 and the input and output (I/O) files (FlowMaster) that were submitted previously, as part of July 2009 Hydrology Safety Site Audit Information Need HYDSV-07 via Luminant letter TXNB-09037, dated September 2, 2009. This supplemental RAI question results from the staff's examination of the calculation package and from examination of calculation package TXUT-001-FSAR 2.4.3-CALC-012. Refer to the NRC staff's 'Hydrology Site Safety Audit Report of the Comanche Peak Nuclear Power Plant, Units 3 and 4 Combined License Application,' dated December 3, 2009.

The NRC staff noted that the Squaw Creek Reservoir storage-elevation and discharge-elevation relationships referenced in the FSAR and in TXUT-001-FSAR 2.4.3-CALC-012 are important determinants of the design basis flood elevation reported by the Applicant because they determine how much flood rise is produced when Squaw Creek Reservoir is surcharged by the PMF. The design documents for Squaw Creek Dam and Reservoir that detail the development of these relationships must be referenced in the COL FSAR, as well as the calculations in which these data are used. These documents are fundamental in the analysis of flood and safety determination and need to be included in the FSAR. The staff will also reference these documents to make its safety determinations.

Accordingly, the NRC staff requests that the applicant submit calculation packages 2.4.3-CALC-011 and 2.4.4-CALC-015 and references 11, 12, 13, and 14 of TXUT-001-FSAR 2.4.3-CALC-012 on the docket.

This is supplemental RAI 2.4.3-03-S-d.

ANSWER:

The requested material was submitted to the NRC via letter TXNB-10017 dated March 3, 2010 (ML100750042). Calculation packages -011 and -012 are currently under revision in response to Questions 2.4.3-5, 2.4.3-7, 2.4.3-8, and 2.4.3-10. Calculation package -015 is currently under revision in response to RAI No. 4311 (CP #140) Questions 2.4.4-6 and 2.4.4-7. The revised calculation packages will be submitted upon completion.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

Attachment 2

Response to Request for Additional Information No. 4312 (CP RAI #144)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4312 (CP RAI #144)

SRP SECTION: 02.04.05 - Probable Maximum Surge and Seiche Flooding

QUESTIONS for Hydrologic Engineering Branch (RHEB)

DATE OF RAI ISSUE: 2/26/2010

QUESTION NO.: 02.04.05-5

NUREG-0800, Standard Review Plan (SRP), Section 2.4.5, 'Probable Maximum Surge and Seiche Flooding,' establishes criteria that the NRC staff intends to use to evaluate whether an Applicant meets the NRC's regulations.

The NRC staff issued RAI ID 3667 (RAI 112) Question Number 14254 (02.04.05-1), in which the NRC staff asked "Provide a description of and rationale for the process used to determine the conceptual models for probable maximum hurricane, probable maximum wind storm, seiche and resonance, wave runup, and sediment erosion and deposition to ensure that the most conservative of plausible conceptual models has been identified."

The Applicant responded in document CP-200901564-Log No TXNB-09067-(ML093230704) executed on November 13, 2009. The NRC staff has evaluated the Applicant's response and the related FSAR revisions incorporated through Updated Tracking Report (UTR) Number 4.

The NRC staff determined that the response does not provide a complete description of the causal mechanisms that create hazard from probable maximum hurricane, probable maximum wind storm, seiche and resonance, and wave runup. The Applicant's response dismisses the hurricane surge hazard without considering how a hurricane surge would propagate upstream, notwithstanding the distance of 275 miles. The response cites the use of maximum winds in computing the wave effects, but does not explain why those winds are bounding conservative in terms of their effect on the design basis flood.

In order to make its safety determination based on the use of appropriate quantitative and technical analyses, the staff requests that the Applicant provide additional specific and deductive justification for the bounding conservatism of the approach to hurricane surge hazard and wave runup hazard in Section 2.4.5 of the Combined License (COL) Part 2 FSAR.

This is supplemental RAI 2.4.5-00-S.

ANSWER:

The hazard from hurricane surge and wave run-up has been eliminated based on the guidance in ANSI/ANS-2.8-1992, which states that the region of occurrence for a probable maximum hurricane shall be considered for U.S. coastline areas and areas within 100 to 200 miles bordering the Gulf of Mexico. The site is located approximately 275 miles inland from the Gulf of Mexico. Therefore, the site is located outside the region of occurrence for a probable maximum hurricane and the hazard is not considered.

The hazard from probable maximum wind storm and wave run-up has also been eliminated based on the guidance in ANSI/ANS-2.8-1992, which states that the region of occurrence for a probable maximum wind storm should be considered for locations along the Pacific Coast and North Atlantic Coast of the U.S. and large bodies of water such as the Great Lakes. Also, the region of occurrence for a moving squall line should be considered for the locations along Lake Michigan and the other Great Lakes. The site is located approximately 275 miles inland from the Gulf of Mexico and is not located in the Great Lakes region or near a large body of water. Therefore, the site is located outside the region of occurrence for a probable maximum wind storm and the hazard is not considered.

Although the hazard considerations for hurricane, probable maximum wind storm, and a moving squall line have been eliminated, other meteorological wind systems have been considered based on the guidance provided in the USACE Coastal Engineering Manual EM 1110-2-1100. The Manual states that mesoscale convective complex systems can generate extreme wave conditions in inland waters and are fetch-limited with wind speeds up to about 45 mph. The evaluation of coincident wind wave activity presented in FSAR Subsection 2.4.3.6 is based on a 50 mph wind speed and the longest straight line fetch associated with the maximum water surface elevation generated by the PMF. The coincident wind wave activity wind speed is more conservative than the wind speed identified in the Coastal Engineering Manual. Additionally, the fetch length is based on the maximum water surface elevation generated by the PMF and is more conservative than a fetch length based on the water surface elevation generated by other storms. Therefore, the PMF with coincident wind wave activity is bounding for the hazards presented in FSAR Subsection 2.4.5.

Impact on R-COLA

See attached markup of FSAR Revision 1, page 2.4-32.

Impact on S-COLA

None.

Impact on DCD

None.

2.4.5 Probable Maximum Surge and Seiche Flooding

CP COL 2.4(1) ~~Replace the content~~Add the following at the end of DCD Subsection 2.4.5 ~~with the following~~. RCOL2_02.04-1

According to the NRC Regulatory Guide 1.59, "Design Basis Floods for Nuclear Power Plants," probable maximum surge and seiche flooding is considered based on a probable maximum hurricane (PMH), probable maximum windstorm (PMWS), or moving squall line. (Reference 2.4-229) The region of occurrence for a PMH is along U.S. coastline areas. For a PMWS, the region of occurrence is along coastline areas and large bodies of water such as the Great Lakes. A moving squall is considered for the Great Lakes region.

According to USACE EM 1110-2-1100 (Reference 2.4-235) guidelines, meteorological wind systems generated by thunderstorms and frontal squall lines can generate waves up to 16.4 ft high for inland waters. Additionally, mesoscale convective complex wind systems affecting inland waters are fetch-limited and based on wind speeds of up to about 66 fps or 45 mph. Similar wind speeds are used to determine the coincident wind-generated wave activity discussed in Subsection 2.4.3. The coincident wind wave activity, including wave setup, results in maximum runup of 16.9 ft. The maximum wind setup is estimated to be 0.07 ft. Therefore, the total water surface elevation increase due to wind wave activity is estimated to be 16.97 ft. The resulting PMF coincident with wind wave activity elevation is 807.87 ft msl.

The USACE guideline procedure for geologic hazard evaluations considers seiche waves greater than 7 ft to be rare. (Reference 2.4-242) The seiche hazard can be screened out for sites located more than 7 ft above the adjacent water body.

According to the guidance of ANSI/ANS-2.8-1992 (Reference 2.4-229), the region of occurrence for a PMH shall be considered for U.S. coastline areas and areas within 100 to 200 miles bordering the Gulf of Mexico. CPNPP Units 3 and 4 are located approximately 275 mi inland from the Gulf of Mexico and outside the region of occurrence for a PMH. Therefore, a PMH was not considered. CPNPP Units 3 and 4 safety-related facilities are located at the plant grade level elevation of 822 ft msl. A surge due to a PMH event would not cause flooding at the site. RCOL2_02.04.05-5

According to the guidance of ANSI/ANS-2.8-1992 (Reference 2.4-229), the region of occurrence for a PMWS should be considered for locations along the Pacific Coast and North Atlantic Coast of the U.S. and large bodies of water such as the Great Lakes. Likewise, the region of occurrence for a moving squall line should be considered for locations along Lake Michigan and the other Great Lakes. CPNPP Units 3 and 4 are located outside of the region of occurrence for a PMWS and a moving squall line. Therefore, a PMWS and a moving squall line have not been considered. RCOL2_02.04.05-5