PMComanchePeakPEm Resource

From: Conly, John [John.Conly@luminant.com]
Sent: Monday, June 06, 2011 11:31 AM
To: Aitken, Diane; Barrie, Ashley; Bell, Russ; Bird, Bobby; Borsh, Gina; Buschbaum, Denny; Bywater, Russell; Caldwell, Jan; Carver, Ronald; Certrec; Ciocco, Jeff; Clouser, Tim; Collins, Elmo; Conly, John; Cosentino, Carolyn; Degeyter, Brock; Evans, Todd; Flores, Rafael; Frantz, Steve; Freitag, Al; Hamzehee, Hossein; Hill, Yukako; Hoshi, Masaya; Ishida, Mutsumi; Johnson, Michael; Kawanago, Shinji; Keithline, Kimberley; Kellenberger, Nick; Koenig, Allan; Kolhekar, Aditi; Kramer, John; Lucas, Mitch; Madden, Fred; Matthews, David; Matthews, Tim; McConaghy, Bill; Monarque, Stephen; Moore, Bill; ComanchePeakCOL Resource; Onozuka, Masanori; Paulson, Keith; Plisco, Loren; Reible, Robert; Rund, Jon; Simmons, Jeff; Singal, Balwant; Sprengel, Ryan; Takacs, Michael; Tapia, Joe; Tindell, Brian; Turner, Bruce; Volkening, David; Vrahoretis, Susan; Williamson, Alicia; Willingham, Michael; Woodlan, Don
Cc: Hill, Craig; Patel, Chandu
Subject: Luminant Submits Response to RAI 5686 (CP RAI #219)
Attachments: TXNB-11040 RAI 219.pdf

Luminant has submitted to the NRC the attached response to RAI 5686 (CP RAI #219) addressing geologic mapping of the excavations for Units 3 and 4. If there are any questions regarding this response, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com).

Thanks,

John T. Conly

COLA Project Manager
(254) 897-5256

Hearing Identifier: ComanchePeak_COL_Public
Email Number: 1402

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Subject: Luminant Submits Response to RAI 5686 (CP RAI #219)
Sent Date: 6/6/2011 11:31:00 AM
Received Date: 6/6/2011 11:31:18 AM
From: Conly, John

Created By: John.Conly@luminant.com

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CP-201100802
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Ref. # 10 CFR 52

June 6, 2011

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
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION NO. 5686
(SECTION 2.5.1)

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein the response to Request for Additional Information (RAI) No. 5686 for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. This RAI addresses geologic mapping of the excavations for Units 3 and 4.

Should you have any questions regarding this response, 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 June 6, 2011.

Sincerely,

Luminant Generation Company LLC

Donald F. Woodlan for

Rafael Flores

Attachment: Response to Request for Additional Information No. 5686 (CP RAI #219)

Regulatory Commitments in this Letter

This communication contains the following new or revised commitments which will be completed or incorporated into the CPNPP licensing basis as noted:

Number	Commitment	Due Date/Event
8279	The response to CP RAI #219 Question 2.5.1-22 states: Luminant will perform detailed geologic mapping of the excavations for the Comanche Peak Nuclear Power Plant, Units 3 and 4 nuclear island structures; examine and evaluate geologic features discovered in the excavations for safety-related structures other than those for the Units 3 and 4 nuclear islands; and notify the Director of the Office of New Reactors, or the Director's designee, once excavations for the Comanche Peak Nuclear Power Plant, Units 3 and 4 safety-related structures are open for examination by the NRC staff.	During Construction

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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.: 5686 (CP RAI #219)

SRP SECTION: 02.05.01 - Basic Geologic and Seismic Information

QUESTIONS for Geosciences and Geotechnical Engineering Branch 1 (RGS1)

DATE OF RAI ISSUE: 5/12/2011

QUESTION NO.: 02.05.01-22

10 CFR 100.23(c) states that “geological, seismological, and engineering characteristics of a site ... must be investigated in sufficient scope and detail to permit an adequate evaluation or the proposed site ...”. The requirements for data on tectonic surface deformation, non-tectonic deformation, and fault geometry and slip rates are specifically stated, and the applicant is required to investigate “all geologic and seismic factors that may affect the design and operation of the proposed nuclear power plant irrespective of whether such factors are explicitly included in this section.” 10 CFR 100.23(d) also states that “geologic and seismic siting factors considered for design must include ... the potential for surface tectonic and non-tectonic deformations”. 10 CFR 100.23(d)(2) specifically addresses determination of the potential for surface tectonic and nontectonic deformations. 10 CFR 100.23(d)(2) also states that “sufficient geological, seismological, and geophysical data must be provided to clearly establish whether there is a potential for surface deformation.”

Regulatory Guide 1.132, ‘Site Investigations for Foundations of Nuclear Power Plants,’ Revision 2, October 2003 (pgs 16-16, Rev 2, October 2003) provides specific guidance under “Construction Mapping” in Section 6. This section notes that excavations for safety-related` structures, and “other excavations” important for verification of subsurface conditions, “should be geologically mapped and logged in detail”.

Pursuant to CFR 52.79(d)(3), Luminant is requested to implement the following license condition in COLA, Part 10. The staff has determined that this license condition for geologic mapping of safety-related excavations serves to confirm that the actual subsurface conditions are the same conditions as what is described in the FSAR and that the staff’s safety findings, which are based on conditions described in the FSAR, remain valid. This information is necessary to confirm that the design will be adequate and account for any subsurface conditions that the licensee may find when excavating the hole for the foundation. This includes the possibility of the licensee taking action to improve the site in order to make the design acceptable as analyzed, depending on conditions discovered during excavation, and addresses the possibility that some undiscovered subsurface feature could render the site unacceptable.

License Condition 2.5.1-1: The licensee shall perform detailed geologic mapping of the excavations for the Comanche Peak Nuclear Power Plant, Units 3 and 4 nuclear island structures; examine and evaluate geologic features discovered in the excavations for safety-related structures other than those for the Units 3 and 4 nuclear islands; and notify the Director of the Office of New Reactors, or the Director’s designee,

once excavations for the Comanche Peak Nuclear Power Plant, Units 3 and 4 safety-related structures are open for examination by the NRC staff.

ANSWER:

FSAR Subsection 2.5.4.5.2 includes the following statements:

> Geologic Mapping of Excavation, Documentation and Monitoring: Geologic mapping is required on a continuous basis during foundation excavation, with mapping consistent with the rock and engineering layer classifications described in Subsection 2.5.4.3. Detailed engineering geologic mapping should be supplemented with photographs, video tapes, and topographic survey of the excavated surfaces and pertinent geologic features exposed. All final excavation cuts and foundation subgrade exposures require final inspection and mapping in order to ensure that all shale and unsuitable materials are removed and competent rock materials are exposed.

Subsection 2.5.4.5.4.6.1 also states:

> The procedure for verification of foundation conditions consists of geologic mapping of the final exposed excavation surface prior to placement of foundation concrete or fill concrete.
>
> Geologic mapping of final exposed rock surfaces beneath Units 3 and 4 and any required extension to reach suitable rock material is periodically carried out at a scale of 1 in equals 5 ft. Areas where further detail is needed for documentation of significant features are also documented on the geologic map in order to ensure that all shale and unsuitable materials are removed and competent rock materials are exposed.
>
> The geologic mapping program includes photographic documentation of exposed surfaces and laboratory testing and documentation of significant features.

Subsection 2.5.4.5.4.6.3 includes the following:

> Geotechnical quality control includes continuous observations and monitoring of excavations during construction as well as geologic mapping by qualified and trained geotechnical personnel and geologists to verify that foundation quality materials are reached.
>
> Observations are required to be performed during 1) general excavation, to achieve mat foundation bearing elevations, 2) additional excavations below the design mat bearing elevations, and 3) cleanout of any defects in the rock foundation. The exposed excavation bottoms also need to be mapped by the project engineering geologist to record the conditions of the foundation prior to placement of reinforcing steel or fill concrete.
>
> Similar to Units 1 and 2 foundation excavations, extensometers are also needed during foundation excavation for Units 3 and 4 to monitor foundation deformation.

Subsection 3.9.3.11 of the CPNPP Units 3 and 4 Environmental Report states:

> The power block consists of an area encompassing the nuclear island and turbine building areas, which include the following buildings for each unit (Figure 3.1-1):
>
> - Reactor building, including the prestressed concrete containment vessel.
> - Power source buildings.
> - Power source fuel storage vaults.
> - Essential service water pipe tunnel.
> - UHS related structures.
> - Auxiliary building.
> - Access building.
> - Turbine building.
>
> In accordance with Regulatory Guide 1.165, the open excavations would be geologically mapped, and the NRC would be notified when the excavations are open for inspection.

Regulatory Guide (RG) 1.165, position C 1.3 states:

> Therefore, a commitment should be made, in documents (Safety Analysis Reports) supporting the license application, to geologically map all excavations and to notify the NRC staff when excavations are open for inspection."

As shown in FSAR Table 1.9-201, Luminant conforms with RG 1.208 rather than RG 1.165, and RG 1.208 states:

> A commitment should be made, in documents (safety analysis reports) supporting the license application, to geologically map all excavations of significant size and to notify the NRC staff when excavations are open for inspection. This should apply to excavations for construction of all Seismic Category I structures, as a minimum.

The RAI proposes an additional license condition, which addresses the geologic mapping of the excavation for CPNPP Units 3 and 4. According to RG 1.206 and ISG-015, the proposed requirement does not meet guidance criteria for a license condition (e.g., operational restrictions for the facility, restrictions on operating power levels, the performance of special tests, operational constraints associated with implementation of specific design features). Descriptions of the mapping to be performed are already contained in the FSAR as noted above. The request is that Luminant notify the Office of New Reactors once excavations for safety-related structures are open for examination by NRC staff. The proposed new requirement is not necessary to make a finding required for license issuance. The proposed license condition does request status information regarding the licensee's activities to facilitate NRC inspection activities. This proposed license condition is inconsistent with NRC guidance including RG 1.206, RG 1.68, and the SRP.

As such, Luminant believes the appropriate way to control the requested notification on the CPNPP Units 3 and 4 docket is either as a regulatory commitment provided by this letter or to include the controls in the FSAR. Either approach is acceptable to Luminant. Neither a license condition nor an FSAR update is preferred as they would create unnecessary bureaucracy that would not enhance the inspection process, but would put an unnecessary burden on the licensee. Therefore, Luminant hereby makes the following regulatory commitment to ensure that detailed geologic mapping will be conducted and the NRC will be notified in a timely manner:

Luminant will perform detailed geologic mapping of the excavations for the Comanche Peak Nuclear Power Plant, Units 3 and 4 nuclear island structures; examine and evaluate geologic features discovered in the excavations for safety-related structures other than those for the Units 3 and 4 nuclear islands; and notify the Director of the Office of New Reactors, or the Director's designee, once excavations for the Comanche Peak Nuclear Power Plant, Units 3 and 4 safety-related structures are open for examination by the NRC staff.

Impact on R-COLA

None.

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.