



**Luminant**

**Rafael Flores**  
Senior Vice President &  
Chief Nuclear Officer  
rafael.flores@luminant.com

**Luminant Power**  
P O Box 1002  
6322 North FM 56  
Glen Rose, TX 76043

**T** 254.897.5590  
**F** 254.897.6652  
**C** 817.559.0403

CP-200900860  
Log # TXNB-09023

Ref. # 10 CFR 52

June 17, 2009

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. 2614

Dear Sir:

Luminant Generation Company LLC (Luminant) hereby submits the attached response to Request for Additional Information No. 2614 (CP RAI #6) for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. Should you have any questions regarding the response, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

The only commitment in this letter is on the attached revised page 10.2-1 of the Final Safety Analysis Report, which states "A turbine maintenance and inspection procedure will be established prior to fuel load."

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

Executed on June 17, 2009.

Sincerely,

Luminant Generation Company LLC

*Rafael Flores*  
Rafael Flores

Attachment - Response to Request for Additional Information No. 2614 (CP RAI #6)

*DO90  
NRO*

C-

Email Distribution w/attachment

mike.blevins@luminant.com  
Brett.Wiggs@luminant.com  
Rafael.Flores@luminant.com  
mlucas3@luminant.com  
jeff.simmons@energyfutureholdings.com  
Bill.Moore@luminant.com  
Brock.Degeyter@energyfutureholdings.com  
rbird1@luminant.com  
Matthew.Weeks@luminant.com  
Allan.Koenig@luminant.com  
Timothy.Clouser@luminant.com  
Ronald.Carver@luminant.com  
David.Volkening@luminant.com  
Bruce.Turner@luminant.com  
Eric.Evans@luminant.com  
Robert.Reible@luminant.com  
donald.woodlan@luminant.com  
John.Conly@luminant.com  
Jean.Amundson@luminant.com  
JCaldwell@luminant.com  
David.Beshear@txu.com  
Ashley.Monts@luminant.com  
Fred.Madden@luminant.com  
Dennis.Buschbaum@luminant.com  
Carolyn.Cosentino@luminant.com

masahiko\_kaneda@mnes-us.com  
nan\_sirirat@mnes-us.com  
masanori\_onozuka@mnes-us.com  
ck\_paulson@mnes-us.com  
joseph\_tapia@mnes-us.com  
russell\_bywater@mnes-us.com  
diane\_yeager@mnes-us.com  
kazuya\_hayashi@mnes-us.com  
mutsumi\_ishida@mnes-us.com  
rjb@nei.org  
kak@nei.org  
michael.takacs@nrc.gov  
cp34update@certrec.com  
michael.johnson@nrc.gov  
David.Matthews@nrc.gov  
Balwant.Singal@nrc.gov  
paul.kallan@nrc.gov  
Stephen.Monarque@nrc.gov  
jeff.ciocco@nrc.gov  
michael.willingham@nrc.gov  
john.kramer@nrc.gov  
Brian.Tindell@nrc.gov  
Elmo.Collins@nrc.gov  
Loren.Plisco@nrc.com  
sfrantz@morganlewis.com  
tmatthews@morganlewis.com  
Laura.Goldin@nrc.gov  
James.Biggins@nrc.gov

---

## 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.: 2614, Revision 0 (CP RAI #6)**

**SRP SECTION: 10.2.3 – Turbine Rotor Integrity**

**QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)**

**DATE OF RAI ISSUE: 4/29/2009**

---

**QUESTION NO.: 10.02.03-1**

The NRC staff requests that the corresponding turbine inspection program description, including the inspection interval that follows the guidance of NUREG-0800, SRP Sections 3.5.1.3 and 10.2.3, "Turbine Rotor Integrity," be submitted to the NRC staff for review, and incorporated in the Comanche Peak FSAR in order to meet the requirements of General Design Criterion (GDC) 4, "Environmental and Missile Dynamic Effects Design Bases" of 10 CFR Part 50.

Section 10.2.5 of the US-APWR FSAR provides a Combined License Information Item (COL 10.2(1)) which states that the combined license applicant is to develop a turbine maintenance and inspection procedure, and then implement prior to fuel load.

Standard COL information item (STD COL 10.2(1)) in Section 10.2.3.5 of the Comanche Peak COL FSAR addressed the US-APWR FSAR, COL 10.2(1) by stating that the turbine maintenance and inspection program will be established prior to fuel loading.

Please describe the inspection program in the COL FSAR. In this description of the inspection program, please include the areas to be inspected, methods of inspection, frequency of inspections and the acceptance criteria to be used in accordance with SRP 10.2.3, "Turbine Rotor Integrity" and the requirements of 10 CFR Part 50, GDC 4.

---

**ANSWER:**

The description of the turbine inspection program has been enhanced in DCD Subsection 10.2.3.5.

The validity of low-pressure (LP) turbine rotor inspection at intervals less than or equal to 10 years is described in DCD Reference 10.2-9, "Probability of Missile Generation from Low Pressure Turbines," MUAP-07028-P (R0), which was submitted to the NRC on December 31, 2007. Based on very conservative assumptions, this reference demonstrates that LP rotor missile ejection probability can be

kept less than the probability stated in SRP 3.5.1.3 (i.e.,  $1.0E-5$  per year), provided that the initial depth of any crack found in the LP rotor is less than or equal to the stated allowable. Should the depth of any crack found during an inspection be greater than allowable, a new inspection interval will be planned to maintain missile ejection probability less than  $1.0E-5$  per year.

The LP turbine rotor steeples and the bottom of grooves for blade attachment are the critical parts which determine the missile ejection probability and inspection interval as explained in DCD Reference 10.2-9. Therefore, the inservice inspection (ISI) procedure includes the inspection of these parts by ultrasonic test. Other turbine parts as prescribed in SRP 10.2.3 are included in the ISI procedure, which will be available for review prior to fuel load.

Impact on R-COLA

See attached changes for pages 1.8-54 and 10.2-1 of FSAR Revision 0.

Impact on S-COLA

None.

Impact on DCD

Changes to the DCD referenced above were provided in Mitsubishi Heavy Industries, Ltd. letter to the NRC, "Update of Chapter 3 and Chapter 10 of US-APWR DCD," dated June 15, 2009 (UAP-HF-09269).

**Comanche Peak Nuclear Power Plant, Units 3 & 4  
COL Application  
Part 2, FSAR**

**Table 1.8-201 (Sheet 45 of 68)**

**Resolution of Combined License Items for Chapters 1 - 19**

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.5(6)	The COL Applicant addresses connections to the Technical Support Center from where communications networks are provided to transmit information pursuant to the requirements delineated in 10 CFR 50 Appendix E, Part IV.E.9.	9.5.2.2.5.2	A		
COL 9.5(7)	The COL Applicant addresses a continuously manned alarm station required by 10 CFR 73.46(e)(5) and the communications requirements delineated in 10 CFR 73.45(g)(4)(i) and (ii). The COL Applicant addresses notification of an attempted unauthorized or unconfirmed removal of strategic special nuclear material in accordance with 10 CFR 73.45(e)(2)(iii).	9.5.2.2.5.2 9.5.2.3	A		
COL 9.5(8)	The COL Applicant addresses offsite communications for the onsite operations support center.	9.5.2.2.5.2	A		
COL 9.5(9)	The COL Applicant addresses the emergency communication system requirements delineate in 10 CFR 73.55(f) such that a single act cannot remove onsite capability of calling for assistance and also as redundant system during onsite emergency crisis.	9.5.2.2.5.2	A		
COL 9.5(10)	Deleted from the DCD.				
COL 10.2(1)	Inservice Inspection; The Combined License Applicant is to <del>develop</del> <u>establish</u> a turbine maintenance and inspection procedure <del>and then to implement prior to fuel load. Plant startup procedure including warm-up time will be completed therein.</del>	10.2.3.5	A	H	b RCOL2_10.0 2.03-01

**Comanche Peak Nuclear Power Plant, Units 3 & 4**  
**COL Application**  
**Part 2, FSAR**

**10.2 TURBINE-GENERATOR (T/G)**

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

---

**10.2.3.5 Inservice Inspection**

STD COL 10.2(1) Replace the last paragraph of DCD Subsection 10.2.3.5 with the following.

---

~~A turbine maintenance and inspection procedure will be established prior to fuel load. Plant specific turbine rotor test data and calculated toughness curves that support the material property assumption in the turbine rotor analysis is to be obtained during procurement stage and then turbine maintenance and inspection program is to be established prior to fuel loading. Plant start up procedure including warm up time is to be verified based on the specific material property.~~

---

RCOL2\_10.0  
2.03-01

**10.2.5 Combined License Information**

Replace the content of DCD Subsection 10.2.5 with the following.

STD COL 10.2(1) **COL 10.2(1)** *Inservice Inspection*

*This Combined License (COL) item is addressed in Subsection 10.2.3.5.*