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Log # TXX-09113

Ref. # 10 CFR 50.90

September 14, 2009

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
REVISION TO LICENSE AMENDMENT REQUEST 09-007,
MODEL D5 STEAM GENERATOR ALTERNATE REPAIR CRITERIA
(TAC NOS. ME1446 AND ME1447)

REFERENCES:
1. Letter logged TXX-09075 dated June 8, 2009, from Rafael Flores of Luminant Power to the NRC submitting License Amendment Request (LAR) 09-007.
2. Letter dated July 23, 2009, from Balwant Singal of NRR to Rafael Flores.
3. Letter dated August 11, 2009, from Balwant Singal of NRR to Rafael Flores
4. Letter logged TXX-09096 dated August 20, 2009, from Rafael Flores of Luminant Power to the NRC submitting Response to Request for Additional Information Regarding License Amendment Request (LAR) 09-007.
5. Letter logged TXX-09105 dated August 27, 2009, from Rafael Flores of Luminant Power to the NRC submitting Response to Request for Additional Information Regarding License Amendment Request (LAR) 09-007.

Dear Sir or Madam:

Per Reference 1, Luminant Generation Company LLC (Luminant Power) requested an amendment to the Comanche Peak Steam Electric Station, herein referred to as Comanche Peak Nuclear Power Plant (CPNPP), Unit 1 Operating License (NPF-87) and Unit 2 Operating License (NPF-89) by revising the CPNPP Unit 1 and 2 Technical Specifications (TSs).

The proposed change revises TS 5.5.9.2, Unit 1 Model D76 and Unit 2 Model D5 Steam Generator (SG) Program, to exclude portions of the Unit 2 Model D5 steam generator tube below the top of the SG tubesheet from periodic steam generator tube inspections.

The NRC provided Luminant Power with requests for additional information (RAI) via References 2 and 3. References 4 and 5 provided the responses to the RAIs.

On September 2, 2009, in a teleconference between NRC Staff and industry personnel, NRC Staff indicated that Staff concerns with eccentricity of the tube sheet tube bore in normal and accident conditions (RAI question 4 of Reference 2 and RAI question 1 of Reference 3) have not been completely resolved to the satisfaction of the Staff. The Staff further indicated that there was insufficient time to resolve these issues to support approval of the permanent amendment request to support the fall 2009

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refueling outage. As such, Luminant Power is proposing to revise the proposed changes to the technical specification contained in Reference 1 to be a one-time change to TS 5.5.9.2 and TS 5.6.9 for Unit 2 during Refueling Outage 11 and the subsequent inspection cycle. Luminant Power requests that the Staff provide the specific questions remaining to be resolved and that the review of the amendment request for permanent alternate repair criteria continue.

The permanent H* submittal is based on maintaining structural and leakage integrity in the event of an accident.

From a structural perspective, the 16.95 inch value of H* ensures that tube rupture or tube pull out from the tube sheet will not occur in the event of an accident in the entire life of the plant. Even in the event that all tubes in the steam generator have a 360 degree sever at 16.95 inches, structural integrity of the steam generator tube bundle will be maintained. This assumption bounds the current status of the Comanche Peak Unit 2 steam generators with significant margin.

At Comanche Peak Unit 2, tube flaw indications within the tube sheet have only been found at the hot leg tube ends. Approximately 18,200 tube ends have been recently inspected at Comanche Peak Unit 2. Thirteen (13) flaw indications have been found in the inspections within 0.5 inches of the tube end. All of these indications were small and none met the tube repair criteria in the current technical specifications.

Based on these inspections, all detected flaws existing in the tube sheets of Comanche Peak Unit 2 steam generators have been removed from service by plugging. The flaws that have been found are associated with residual stress conditions at the tube ends. No indications of a 360 degree sever has been detected in any steam generator at Comanche Peak Unit 2. Consequently, the level of degradation in the Comanche Peak Unit 2 steam generators is very limited compared to the assumption of "all tubes severed" that was utilized in the development of the permanent H*. Consequently, structural integrity will be assured for the operating period between inspections allowed by TS 5.5.9.2, "Steam Generator (SG) Program."

From a leakage perspective, projections of accident induced steam generator tube leakage are based on leakage rate factors applied to leakage detected during normal operation. The multiplication factor used for Comanche Peak Unit 2 bounds the expected increased leakage in the event of an accident at Comanche Peak Unit 2. The projected accident induced leakage remains the same for both the single cycle and permanent H* amendments. No primary-to-secondary steam generator tube leakage has been detected during the current operating cycle for Comanche Peak Unit 2.

For Comanche Peak Unit 2, the number of tubes identified with flaws within the tubesheet is small in comparison to the input assumptions used in the development of the permanent H*. Consequently, significant margin exists between the current state of the Comanche Peak Unit 2 steam generators and the conservative assumptions used as the basis for the permanent H*. Structural and leakage integrity will continue to be assured for the operating period between inspections allowed by TS 5.5.9.2, "Steam Generator (SG) Program" with the implementation of the proposed one-time H* alternate repair criteria..

Luminant Power has performed a steam generator degradation assessment for the CPNPP Unit 2 Refueling Outage 11. This assessment has concluded that, upon implementation of the H* alternate repair criteria as outlined in this request, inspection of the steam generator tubes will not be required during Refueling Outage 2RF11. This conclusion is based on satisfying all requirements of the CPNPP technical specifications and industry guidelines.

The requested changes do not expand the scope of the application as originally noticed, and does not impact the conclusions of the NRC staff's original proposed no significant hazards consideration determination as published in the Federal Register(74 FR 40240).

Attachment 1 provides the affected Unit 1 and Unit 2 Technical Specification (TS) pages marked up to reflect the proposed changes. Attachment 2 provides the retyped TS pages which incorporate the requested changes.

Luminant Power requests approval of the proposed license amendment by September 30, 2009, to support the Comanche Peak Unit 2 Fall 2009 (2RF11) refueling outage. The proposed license amendment will be implemented within 30 days of the issuance of the license amendment.

In accordance with 10 CFR 50.91(b), Luminant Power is providing the State of Texas with a copy of the proposed license amendment.

This communication contains the following licensing basis commitments which will be completed or incorporated into the Comanche Peak licensing basis as noted:

Number	Commitment	Due Date/Event
3740011	Luminant Power commits to monitor for tube slippage as part of the steam generator tube inspection program. Slippage monitoring will occur for each inspection of the Comanche Peak Unit 2 steam generators.	Required to be completed during each Unit 2 steam generator eddy current inspection starting in Refueling Outage 2RF12
3740015	Luminant Power commits to perform a one-time verification of tube expansion locations to determine if any significant deviations exist from the top of the tubesheet to the beginning of expansion transition (BET). If any deviations are found, the condition will be entered into the Comanche Peak corrective action program. Additionally, Luminant Power commits to notify the NRC of any significant deviations.	Prior to the start of Refueling Outage 2RF11
3779679	For the condition monitoring (CM) assessment, the component of leakage from the prior cycle from below the H* distance will be multiplied by a factor of 3.16 and added to the total leakage from any other source and compared to the allowable accident induced leakage limit. For the operational assessment (OA), the difference in the leakage between the allowed accident induced leakage and the accident induced leakage from sources other than the tubesheet expansion region will be divided by 3.16 and compared to the observed operational leakage. An administrative limit will be established to not exceed the calculated value.	During each inspection of the Unit 2 steam generators required by TS 5.5.9.2 starting in Refueling Outage 2RF12.

Should you have any questions, please contact Mr. Jack Hicks at (254)897-6725.

I state under penalty of perjury that the foregoing is true and correct. Executed on the 14th day of September, 2009.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: Fred W Madden

Fred W. Madden
Director, Oversight & Regulatory Affairs

Attachments - 1. Proposed Technical Specification Changes
2. Retyped Technical Specifications

c - E. E. Collins, Region IV
B. K. Singal, NRR
Resident Inspectors, Comanche Peak

Alice Hamilton Rogers, P.E.
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Texas Department of State Health Services
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ATTACHMENT 1 TO TXX-09113

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

Page 5.0-19b (no change)
Page 5.0-19c
Page 5.0-19d
Page 5.0-37

5.5 Programs and Manuals (continued)

5.5.9.2 Unit 1 Model D76 and Unit 2 Model D5 Steam Generator (SG) Program

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.

b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 1 gpm per SG.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

(continued)

5.5 Programs and Manuals (continued)

5.5.9.2 Unit 1 Model D76 and Unit 2 Model D5 Steam Generator (SG) Program (continued)

c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

1. The following alternate tube repair criteria shall be applied as an alternative to the 40% depth based criteria:

a. For Unit 2 only during Refueling Outage 11 and the subsequent inspection cycle, tubes with service-induced flaws located greater than 16.95 inches below the top of the tubesheet do not require plugging. Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to 16.95 inches below the top of the tubesheet shall be plugged upon detection.

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. ~~The~~ For Unit 1, the number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the outlet, and that may satisfy the applicable tube repair criteria. For Unit 2 during Refueling Outage 11 and the subsequent inspection cycle, the number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present ~~along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria.~~ along the length of the tube from 16.95 inches below the top of the tubesheet on the hot leg side to 16.95 inches below the top of the tubesheet on the cold leg side and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

2a. For the Unit 2 model D5 steam generators (Alloy 600 thermally treated) inspect 100% of the tubes at sequential periods of 120, 90, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.

(continued)

5.5 Programs and Manuals (continued)

5.5.9.2 Unit 1 model D76 and Unit 2 model D5 Steam Generator (SG) Program (continued)

2b. For the Unit 1 model Delta-76 steam generators (Alloy 690 thermally treated) inspect 100% of the tubes at sequential periods of 144, 108, 72, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.

3. ~~If crack indications are found in any SG tube,~~ For Unit 1, if crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). For Unit 2 during Refueling Outage 11 and the subsequent inspection cycle, if crack indications are found in any SG tube from 16.95 inches below the top of the tubesheet on the hot leg side to 16.95 inches below the top of the tubesheet on the cold leg side, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

(continued

5.6 Reporting Requirements (continued)

5.6.7 Not used

5.6.8 PAM Report

When a report is required by the required actions of LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.9 Unit 1 Model D76 and Unit 2 Model D5 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.9.2, Steam Generator (SG) Program. The report shall include:

a. The scope of inspections performed on each SG,

b. Active degradation mechanisms found,

c. Nondestructive examination techniques utilized for each degradation mechanism,

d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

e. Number of tubes plugged during the inspection outage for each active degradation mechanism,

f. Total number and percentage of tubes plugged to date, ~~and~~

g. The results of condition monitoring, including the results of tube pulls and in-situ testing,

h. For Unit 2 only during Refueling Outage 11 and the subsequent inspection cycle, the primary to secondary leakage rate observed in each SG (if it is not practical to assign the leakage to an individual SG, the entire primary to secondary leakage should be conservatively assumed to be from one SG) during the cycle preceding the inspection which is the subject of the report,

i. For Unit 2 only during Refueling Outage 11 and the subsequent inspection cycle, the calculated accident induced leakage rate from the portion of the tubes below 16.95 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident induced leakage rate from the most limiting accident is less than 3.16 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined, and

j. For Unit 2 only during Refueling Outage 11 and the subsequent inspection cycle, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

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ATTACHMENT 2 TO TXX-09113

RETYPED TECHNICAL SPECIFICATION PAGES

Page 5.0-19c
Page 5.0-19d
Page 5.0-37

5.5 Programs and Manuals (continued)

5.5.9.2 Unit 1 Model D76 and Unit 2 Model D5 Steam Generator (SG) Program (continued)

c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

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5.5 Programs and Manuals (continued)

5.5.9.2 Unit 1 model D76 and Unit 2 model D5 Steam Generator (SG) Program (continued)

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e. Provisions for monitoring operational primary to secondary LEAKAGE.

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5.6 Reporting Requirements (continued)

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j. For Unit 2 only during Refueling Outage 11 and the subsequent inspection cycle, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

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