

November 30, 2005

Mr. M. R. Blevins
Senior Vice President &
Chief Nuclear Officer
TXU Power
Attn: Regulatory Affairs Department
P. O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION, UNIT 1 - RESPONSE TO
GENERIC LETTER 2004-01, "REQUIREMENTS FOR STEAM GENERATOR
TUBE INSPECTIONS" (TAC NO. MC4811)

Dear Mr. Blevins:

On August 30, 2004, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2004-01, "Requirements For Steam Generator Tube Inspections." The purpose of GL 2004-01 was to obtain information that would enable the NRC staff to determine whether the licensee's steam generator tube inspection programs comply with the existing tube inspection requirements as specified in the plant Technical Specifications in conjunction with Appendix B to Part 50 of Title 10 of the *Code of Federal Regulations*.

By letter dated October 14, 2004 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML042940371), TXU Generation Company LP, the licensee for Comanche Peak Steam Electric Station (CPSES), responded to GL 2004-01 for CPSES, Units 1 and 2. The NRC staff previously addressed the evaluation of the licensee's response for CPSES, Unit 2, by letter dated June 9, 2005 (ADAMS Accession No. ML051520353). This response addresses the NRC staff's evaluation of the licensee's response to GL 2004-01 for CPSES, Unit 1. The response for CPSES, Unit 1, was supplemented by the licensee's letter dated August 4, 2005 (ADAMS Accession No. ML052220335).

The NRC staff has completed its review of the licensee's response for CPSES, Unit 1, as outlined in the enclosed safety evaluation. Based on that review, the NRC staff finds that the licensee's response to GL 2004-01 for CPSES, Unit 1, are acceptable since, (1) the licensee has specified near- and long-term corrective actions to mitigate the inability to inspect behind the nickel band region and has entered that difficulty in its corrective action program, and (2) inspections to be performed during the refueling outage 1RF11 at sleeve joints in the tube-sheet should provide reasonable assurance of the tube integrity in this area of the tube bundle until the planned replacement of the steam generators in the spring of 2007.

M. R. Blevins

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If you have any questions regarding this matter, please contact me at (301) 415-1476.

Sincerely,

/RA/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-445

Enclosure: Safety Evaluation

cc: See next page

M. R. Blevins

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO GENERIC LETTER 2004-01, "REQUIREMENTS FOR STEAM GENERATOR
TUBE INSPECTIONS"
FACILITY OPERATING LICENSE NO. NPF-87
TXU GENERATION COMPANY LP
COMANCHE PEAK STEAM ELECTRIC STATION, UNIT 1
DOCKET NO. 50-445

On August 30, 2004, the NRC issued Generic Letter (GL) 2004-01, "Requirements For Steam Generator Tube Inspections." The purpose of GL 2004-01 was to obtain information that would enable the NRC staff to determine whether licensee's steam generator tube inspection programs comply with the existing tube inspection requirements (the plant Technical Specifications) in conjunction with Appendix B to Title 10 of the *Code of Federal Regulations* Part 50 (10 CFR Part 50, Appendix B).

By letter dated October 14, 2004 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML042940371), TXU Generation Company LP, the licensee for Comanche Peak Steam Electric Station (CPSES), responded to GL 2004-01 for CPSES, Units 1 and 2. That response was supplemented by letter dated August 4, 2005 (ADAMS Accession No. ML052220335). The NRC staff previously addressed the licensee's response for CPSES, Unit 2, by letter dated June 9, 2005 (ADAMS Accession No. ML051520353). This safety evaluation addresses the NRC staff's evaluation of the licensee's response to GL 2004-01 for CPSES, Unit 1.

In the August 4, 2005, letter, the licensee indicated that its ability to inspect behind the nickel band region of the steam generator tube sleeves may be limited, and there may be a reduced probability of detection of flaws located behind the nickel band. A nickel band is present in the tube-to-sleeve joints located within the tubesheet for both the tungsten inert gas (TIG) sleeves and the Alloy 800 sleeves. TIG sleeves were installed at CPSES, Unit 1, during the 2002 refueling outage (1RF9), and Alloy 800 sleeves were installed during the next refueling outage (1RF10) in 2004. The location where the Alloy 800 tubesheet joints were established was inspected with a +Point™ probe prior to installation of the sleeves and confirmed to be free from degradation.

As a result of the potential limitations in the licensee's ability to inspect behind the nickel band region, the licensee indicated that both near- and long-term corrective actions have been entered into the site's corrective action program. The longer term corrective actions include removing the TIG and Alloy 800 sleeves from service when the steam generators are replaced in the spring of 2007 (1RF12), and the authorization to use such sleeving methods is removed for the replacement steam generators. The near-term corrective actions include performing the following during the currently ongoing refueling outage (1RF11): (1) a full length +Point™ coil inspection of a minimum of 20 per cent of all inservice TIG sleeves, (2) supplemental analysts training to sensitize the analysts to the potential for axial primary water stress corrosion cracking within the parent tube adjacent to the nickel band and microlok band regions in TIG and Alloy 800 sleeves, and (3) a full length +Point™ coil inspection of all Alloy 800 sleeves.

In addition to these corrective actions, the licensee provided a safety assessment to demonstrate that tube integrity would be maintained, given the inspections performed at the sleeve joints in the tubesheet region. Although the NRC staff could not conclude that it would be able to relicense the sleeves with the technical arguments provided by the licensee in its safety analyses, the staff finds that the inspections to be performed in 1RF11 at the sleeve joints in the tubesheet should provide reasonable assurance of tube integrity in this area of the tube bundle until the planned replacement of the steam generators in 1RF12. The staff's conclusion is based on a limited length of time the sleeves will be in service, the lack of degradation observed in the parent tube at the location where the Alloy 800 sleeve joints were established in 1RF10, the limited amount of primary fluid that can come into contact with this region, the limited potential for a structurally significant circumferential flaw to exist within the short axial distance of the nickel band due to the history of full depth roll expanded tubing and the application of shot peening prior to operation, the possibility that the +Point™ coil may detect severe cracks in this region (the qualification data was based solely on notches), the proximity of the nearby tubes which will limit the potential for a tube to pull out of the tubesheet, and some general insights that joint lengths less than the originally qualified lengths may ensure tube integrity.

In conclusion, the NRC staff finds the licensee's response to GL 2004-01 acceptable, since (1) the licensee has entered its limitations in ability to inspect behind the nickel band region in its corrective action program and will address the limitations by taking the near- and long-term corrective actions discussed above, and (2) the inspections to be performed in currently ongoing refueling outage (1RF11) at the sleeve joints in the tubesheet should provide reasonable assurance of tube integrity in this area of the tube bundle until the planned replacement of the steam generators in the spring of 2007.

Principal Contributor: K. Karwoski

Date: November 30, 2005

Comanche Peak Steam Electric Station

cc:

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