UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 26, 2013

Mr. Rafael Flores
Senior Vice President and
Chief Nuclear Officer
Attention: Regulatory Affairs
Luminant Generation Company LLC
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 1 AND 2 – REQUEST FOR RELIEF NO. E-1 FROM CERTAIN AMERICAN SOCIETY OF MECHNAICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE SECTION XI INSPECTION REQUIREMENTS FOR THE SECOND 10-YEAR IWE INSERVICE INSPECTION INTERVAL (TAC NOS. ME9261 AND ME9262)

Dear Mr. Flores:

By letter dated August 16, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12240A051), as supplemented by letter dated November 14, 2012 (ADAMS Accession No. ML12348A006), Luminant Generation Company LLC (the licensee) submitted Request for Relief No. E-1 to the U.S. Nuclear Regulatory Commission (NRC). The licensee stated that compliance with certain inspection requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, related to IWE inservice inspection (ISI) of electrical penetrations would result in an unnecessary hardship or unusual difficulty without a compensating increase in the level of quality and safety. The licensee requested the relief pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), paragraph 50.55a(a)(3)(ii) for second 10-year ISI interval at Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2.

The NRC staff has reviewed the submittal and concluded that (1) compliance with the ASME Code, Section XI inspection requirements to perform a general visual examination of the surfaces of electrical penetrations included in this relief request, would result in a hardship or unusual difficulty without compensating increase in the level of quality and safety; and (2) there is reasonable assurance that the structural integrity and leak-tightness of electrical penetrations was maintained throughout the second 10-year IWE ISI interval, thus fulfilling the technical requirements of 10 CFR 50.55a(a)(3)(ii).

The CPNPP, Units 1 and 2, second 10-year IWE ISI interval ended on September 9, 2011, and the relief request was submitted on August 16, 2012. As required by 10 CFR 50.55a(a)(3), any proposed alternatives to the requirements of paragraph (g) must be submitted and authorized prior to implementation. Since, this request did not fulfill the regulatory requirements of 10 CFR 50.55a(a)(3), the NRC staff does not have the regulatory authority to authorize this request. The NRC Region IV staff has been informed of the apparent noncompliance with NRC regulations and may take additional NRC actions.

All other ASME Code, Section XI, requirements for which relief has not been specifically requested, remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

For any future IWE ISI 10-year intervals, for which relief from the ASME Code, Section XI, IWE ISI requirements is desired, the licensee should request relief and obtain NRC staff authorization prior to implementation.

The NRC staff's safety evaluation is enclosed. If you have any questions, please contact Balwant K. Singal at 301-415-3016 or by e-mail at Balwant.Singal@nrc.gov.

Sincerely,

CF Lyon for

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:
As stated

cc w/encl: Distribution via Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF NO. E-1

SECOND 10-YEAR IWE INSERVICE INSPECTION INTERVAL PROGRAM

LUMINANT GENERATION COMPANY LLC

COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-445 AND 50-446

1.0 INTRODUCTION

By letter dated August 16, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12240A051), as supplemented by letter dated November 14, 2012 (ADAMS Accession No. ML12348A006), Luminant Generation Company LLC (the licensee) submitted Request for Relief No. E-1 to the U.S. Nuclear Regulatory Commission (NRC). The licensee stated that compliance with certain inspection requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, related to IWE inservice inspection (ISI) of electrical penetrations would result in an unnecessary hardship or unusual difficulty without a compensating increase in the level of quality and safety. The licensee requested the relief pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), paragraph 50.55a(a)(3)(ii) for second 10-year ISI interval at Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2.

The second 10-year IWE ISI interval for CPNPP, Units 1 and 2, began on September 10, 2001, and ended on September 9, 2011.

2.0 REGULATORY EVALUATION

The regulations in 10 CFR 50.55a(g) specify that ISI of nuclear power plant components shall be performed in accordance with the requirements of the ASME Code, Section XI. Subsections IWE and IWL of Section XI of the ASME Code provide the requirements for ISI of Class CC (concrete containments) and Class MC (metallic containments), including integral attachments of MC and metallic liners of Class CC components of light-water cooled power plants.

Paragraph 10 CFR 50.55a(a)(3) specifies that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety; or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Also, as required by 10 CFR 50.55a(a)(3), any proposed alternatives must be submitted and authorized prior to implementation.

3.0 TECHNICAL EVALUATION

3.1 ASME Code Components Affected

CPNPP, Unit 1 Electrical Penetrations:

E-0006, E-0009, E-0016, E-0018, E-0029, E-0039, E-0040, E-0056, and E-0060

CPNPP Unit 2 Electrical Penetrations:

2-E-0006, 2-E-0009, 2-E-0015, 2-E-0016, 2-E-0018, 2-E-0039, 2-E-0040, 2-E-0045, 2-E-0056, 2-E-0060, and 2-E-0066

3.2 Applicable Code Edition and Addenda

The applicable Code of record for CPNPP, Units 1 and 2, is the 1998 Edition through the 2000 Addenda of Section XI of the ASME Code.

3.3 Applicable Code Requirements

A general visual inspection of 100 percent of the accessible containment surface areas including the steel liner and liner penetrations is required, during each inspection period, in accordance with ASME Code, Section XI, Table IWE-2500-1, Examination Category E-A, Item No. E1.11.

3.4 Reason for Request (as stated by the licensee)

> The surfaces of these 20 electrical penetrations [penetrations listed in Section 3.1 of this safety evaluation] are covered with Radiant Energy Shielding (RES) material which precludes the General Visual examination of the surface required by Table IWE- 2500-1, Examination Category E-A, Item No. E1.11. This RES material is designed for post fire safe shutdown protection. RES is made from a custom sewn ceramic fiber blanket in a fireproof fabric envelope which is banded in place and is not designed for removal and reinstallation. The construction of the RES is such that, if damaged, the fibrous material can create excessive waste, and will require additional attention to prevent sump clogging.

In its letter dated August 16, 2012, the licensee also stated that:

> A total of 1200 man-hours per Unit would be required to remove the RES, perform the examination, repair and/or replace damaged RES, and re-install the shielding. The total radiation exposure to perform these activities is estimated to exceed 3.5 man-Rem [roentgen equivalent man] per Unit. The extensive craft and radiation protection support that would be required for scaffolding, RES material removal, repair or replacement of damaged RES material, and RES

material reinstallation on these 20 electrical penetrations would not be compensated for by an increase in the level of plant quality and safety.

The licensee stated in its letter dated August 16, 2012, in part, that

> The accessible surface areas of the containment liner, including all mechanical penetrations and the remaining 66 Unit 1 and 64 Unit 2 electrical penetrations are not covered with RES and are accessible for the required examination. An evaluation of these covered penetrations would be performed and the RES would be removed if conditions exist in accessible areas that indicate degradation could also exist or extend into the RES covered areas. This relief is being requested for 20 electrical penetrations (9 for Unit 1, 11 for Unit 2) which are all of stainless steel construction and represent less than 1 percent of the total IWE metal containment surface area. The previously examined mechanical penetration assemblies and the containment liner are of carbon steel construction and are more susceptible to corrosion type damage mechanisms. The carbon steel containment liner and mechanical penetrations and the remaining stainless steel electrical penetrations have all been examined each period during the second interval without any degradation or corrosion identified. Also, Comanche Peak has adequate confidence that the stainless steel surfaces of the electrical penetrations are not susceptible to the damage mechanisms that may affect the carbon steel surfaces. Therefore, there are no additional safety benefits in examining these penetration surfaces.

3.5 Proposed Alternative and Basis for Use

The licensee has proposed no alternative examination for the penetrations for which relief is requested. However, by letter dated August 16, 2012, the licensee stated that an evaluation of the covered penetrations would be performed and the RES would be removed if the conditions exist in accessible areas that indicate degradation could also exist or extend into the RES covered areas.

3.6 NRC Staff Evaluation

The CPNPP, Units 1 and 2, second 10-year IWE ISI interval ended on September 9, 2011. As required by 10 CFR 50.55a(a)(3), any proposed alternatives to the requirements of paragraph (g) must be submitted and authorized prior to implementation. This request does not fulfill the regulatory requirements of 10 CFR 50.55a(a)(3). Therefore, the NRC staff does not have the authority to authorize this request. However, the NRC staff evaluated this request to ensure that it does not pose a safety issue relative to the structural integrity and leak-tightness of electrical penetrations noted in the licensee's submittal.

As shown in Figure 8.3-16 of the CPNPP, Units 1 and 2, Final Safety Analysis Report, there are a total of 75 electrical penetrations each in CPNPP, Units 1 and 2, containments. As indicated in the licensee's letter dated August 16, 2012, the carbon steel containment liner and mechanical penetrations and the remaining stainless steel electrical penetrations (66 for CPNPP, Unit 1 and 64 for CPNPP, Unit 2), which are not covered with RES, have all been examined each period during the second 10-year IWE ISI interval without identifying any

degradation or corrosion. The unexamined surface areas of those stainless steel electrical penetrations included in this request represent a minimal percentage of the containment metal surface area. In addition, the licensee committed to remove the RES material and examine the electrical penetrations covered by this relief request, if conditions existed in accessible areas that indicated degradation also existed in the RES covered areas.

The leak-tight integrity of the containment penetrations is verified through a Type B test and the overall leak-tight integrity of the containment structure is verified through a Type A test as required by 10 CFR Part 50, Appendix J. The periodic leakage rate testing requirements of 10 CFR 50, Appendix J and the containment ISI requirements mandated by 10 CFR 50.55a together ensure the continued leak-tight and structural integrity of the containment during its service life. To gain further insight, by email dated October 22, 2012 (ADAMS Accession No. ML12296A270), the NRC staff requested the licensee to provide additional information relative to the results of the overall containment Type A testing and Type B testing of the electrical penetrations. In its letter dated November 14, 2012, the licensee noted the following:

a) The local areas of the containment liner around the twenty electrical penetrations, included in this relief request, were visually examined each period during the second 10-year IWE ISI interval with no liner degradation or corrosion identified.

b) The as-found and as-left leakage rate results of the containment integrated leak rate test (Type A) for CPNPP, Units 1 and 2, performed in April 2007 and October 2012, respectively, were in compliance with the acceptance criteria specified in the CPNPP, Units 1 and 2, Technical Specifications.

c) The historical results of local leak rate testing (Type B) of CPNPP, Units 1 and 2, containment electrical penetrations included in this relief request were acceptable.

Based on the above, the NRC staff concludes that (1) compliance with the ASME Code, Section XI inspection requirements to perform a general visual examination of the surfaces of the 20 CPNPP, Units 1 and 2, electrical penetrations covered by this relief request, would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety; and (2) there is reasonable assurance that the structural integrity and leak-tightness of 20 electrical penetrations was maintained throughout the second 10-year IWE ISI interval.

4.0 CONCLUSION

Based on the above, the NRC staff concludes that (1) compliance with the ASME Code, Section XI inspection requirements to perform a general visual examination of the surfaces of electrical penetrations included in this relief request, would result in a hardship or unusual difficulty without compensating increase in the level of quality and safety; and (2) there is reasonable assurance that the structural integrity and leak-tightness of the electrical penetrations were maintained throughout the second 10-year IWE ISI interval.

The CPNPP, Units 1 and 2, second 10-year IWE ISI interval ended on September 9, 2011. As required by 10 CFR 50.55a(a)(3), any proposed alternatives to the requirements of

paragraph (g) must be submitted and authorized prior to implementation. This request does not fulfill the regulatory requirements of 10 CFR 50.55a(a)(3). Therefore, the NRC staff does not have the authority to authorize this request. The NRC staff evaluated this request to ensure that it does not pose a safety issue relative to the structural integrity and leak-tightness of electrical penetrations noted in the licensee's submittal. The NRC Region IV staff has been informed of the apparent noncompliance with NRC regulations and may take additional NRC actions.

All other ASME Code, Section XI requirements for which relief has not been specifically requested remain applicable including third-party review by the Authorized Nuclear Inservice Inspector.

For any future 10-year IWE ISI intervals, for which alternatives are proposed or relief is requested from the ASME Code, Section XI requirements, the licensee needs to submit the request, and obtain NRC staff approval prior to implementation.

Principal Contributor: Farhad Farzam, NRR/DE/EMCB

Date: June 26, 2013

All other ASME Code, Section XI, requirements for which relief has not been specifically requested, remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

For any future IWE ISI 10-year intervals, for which relief from the ASME Code, Section XI, IWE ISI requirements is desired, the licensee should request relief and obtain NRC staff authorization prior to implementation.

The NRC staff's safety evaluation is enclosed. If you have any questions, please contact Balwant K. Singal at 301-415-3016 or by e-mail at Balwant.Singal@nrc.gov.

Sincerely,

/RA by FLyon for/

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:
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ADAMS Accession No. ML13158A093 ***via email** ****Memo dated 5/29/13**

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DATE	6/10/13	6/10/13	5/29/13	6/26/13

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