



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

January 19, 2016

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 – RELIEF  
REQUEST NO. T-1 FOR APPROVAL OF AN ALTERNATIVE TO THE  
INSERVICE TESTING FREQUENCY REQUIREMENTS OF AMERICAN  
SOCIETY OF MECHANICAL ENGINEERS CODE FOR OPERATION AND  
MAINTENANCE OF NUCLEAR POWER PLANTS (CAC NOS. MF6405  
AND MF6406)

Dear Mr. Flores:

By letter dated June 30, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15198A150), as supplemented by letter dated November 5, 2015 (ADAMS Accession No. ML15322A158), Luminant Generation Company LLC (the licensee) submitted Relief Request (RR) T-1 to the U.S. Nuclear Regulatory Commission (NRC) for Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2, for the third 10-year inservice testing (IST) interval.

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(2), the licensee requested to use the proposed alternative in determining acceptable tolerances for pump and valve test frequencies, as specified in American Society of Mechanical Engineers Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code), Code Case OMN-20, "Inservice Test Frequencies," on the basis that ASME OM Code requirements present an undue hardship without a compensating increase in the level of quality and safety.

The NRC staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that the proposed alternative in RR T-1 provides reasonable assurance of operational readiness of the affected components, and complying with the ASME OM Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2).

Therefore, the NRC staff authorizes RR T-1 for the remainder of the CPNPP, Units 1 and 2, third 10-year IST program interval, which began on August 3, 2013, and is scheduled to end on August 2, 2023. All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request remains applicable.

R. Flores

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If you have any questions, please contact Balwant K. Singal at 301-415-3016 or via e-mail at [Balwant.Singal@nrc.gov](mailto:Balwant.Singal@nrc.gov).

Sincerely,



Robert J. Pascarelli, Chief  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:  
Safety Evaluation

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST T-1

THIRD 10-YEAR INSERVICE TESTING INTERVAL

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 June 30, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15198A150), as supplemented by letter dated November 5, 2015 (ADAMS Accession No. ML15322A158), Luminant Generation Company LLC (the licensee) submitted Relief Request (RR) T-1 to the U.S. Nuclear Regulatory Commission (NRC) for Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2, for the third 10-year inservice testing (IST) interval. Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(2), the licensee requested to use the proposed alternative in determining acceptable tolerances for pump and valve test frequencies, as specified in American Society of Mechanical Engineers Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code), Code Case OMN-20, "Inservice Test Frequencies," on the basis that ASME OM Code requirements present an undue hardship without a compensating increase in the level of quality and safety.

2.0 REGULATORY EVALUATION

Paragraph 10 CFR 50.55a(f), "Inservice testing requirements," requires, in part, that IST of certain ASME Code Class 1, 2, and 3 components must meet the requirements of the ASME OM Code and applicable addenda, except where alternatives have been authorized by the NRC pursuant to paragraphs (z)(1) or (z)(2) of 10 CFR 50.55a.

Paragraph 10 CFR 50.55a(z), states, in part, that alternatives to the requirements of 10 CFR 50.55a(f) may be authorized by the NRC if the licensee demonstrates that: (1) the proposed alternative provides an acceptable level of quality and safety, or (2) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Based on the above, and subject to the following technical evaluation, the NRC staff finds that regulatory authority exists for the licensee to request and the Commission to grant the relief requested by the licensee.

Enclosure

### 3.0 TECHNICAL EVALUATION

The Code of record for CPNPP, Units 1 and 2, third 10-year IST program is the 2004 Edition through 2006 Addenda of ASME OM Code. The third 10-year IST program interval at CPNPP, Units 1 and 2, began on August 3, 2013, and is scheduled to end on August 2, 2023.

#### 3.1 Licensee's Alternative Request T-1

##### 3.1.1 Applicable Code Requirements

This request applies to the frequency specifications of the ASME OM Code. The frequencies for tests given in the ASME OM Code include the following, but do not include a tolerance band:

- ISTA-3120, "Inservice Test Interval," (a) states, "The frequency for inservice testing shall be in accordance with the requirements of Section IST."
- ISTB-3400, "Frequency of Inservice Tests," states, "An inservice test shall be run on each pump as specified in Table ISTB-3400-1."
- ISTC-3510, "Exercising Test Frequency," states, "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3570, ISTC-5221, and ISTC-5222. Power-operated valves shall be exercise tested once per fuel cycle."
- ISTC-3540, "Manual Valves," states, "Manual valves shall be full-stroke exercised at least once every 2 years, except where adverse conditions may require the valve to be tested more frequently to ensure operational readiness. Any increased testing frequency shall be specified by the Owner. The valve shall exhibit the required change of obturator position."
- ISTC-3630, "Leakage Rate for Other Than Containment Isolation Valves," (a) "Frequency," states, "Tests shall be conducted at least once every 2 years."
- ISTC-3700, "Position Verification Testing," states, in part, "Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated."
- ISTC-5221, "Valve Obturator Movement," (c)(3), states, "At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in each group shall be disassembled and examined at least once every 8 years."
- Mandatory Appendix I, "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants," I-1320, "Test Frequencies, Class 1 Pressure Relief Valves," (a), "5-Year Test Interval," states, in part, "Class 1 pressure relief valves shall be tested at least once every 5 years, starting with initial electric power generation."

- Mandatory Appendix I, I-1330, "Test Frequency, Class 1 Nonreclosing Pressure Relief Devices," states, "Class 1 nonreclosing pressure relief devices shall be replaced every 5 years unless historical data indicates a requirement for more frequent replacement."
- Mandatory Appendix I, I-1340, "Test Frequency, Class 1 Pressure Relief Valves That Are Used for Thermal Relief Application," states, "Tests shall be performed in accordance with I-1320, Test Frequencies, Class 1 Pressure Relief Valves."
- Mandatory Appendix I, I-1350, "Test Frequency, Classes 2 and 3 Pressure Relief Valves," (a), "10-Year Test Interval," states, in part, "Class 2 and 3 pressure relief valves, with the exception of PWR [pressurized-water reactor] main steam safety valves, shall be tested every 10 years, starting with initial electric power generation."
- Mandatory Appendix I, I-1360, "Test Frequency, Classes 2 and 3 Nonreclosing Pressure Relief Devices," states, "Classes 2 and 3 nonreclosing pressure relief devices shall be replaced every 5 years, unless historical data indicates a requirement for more frequent replacement."
- Mandatory Appendix I, I-1370, "Test Frequency, Classes 2 and 3 Primary Containment Vacuum Relief Valves," (a) states, "Tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at each refueling outage or every 2 years, whichever is sooner, unless historical data requires more frequent testing." I-1370 (b) states "Leak tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at a frequency designated by the Owner in accordance with Table ISTC-3500-1."
- Mandatory Appendix I, I-1380, "Test Frequency, Classes 2 and 3 Vacuum Relief Valves, Except for Primary Containment Vacuum Relief Valves," states, "All Classes 2 and 3 vacuum relief valves shall be tested every 2 years, unless performance data suggest the need for a more appropriate test interval."
- Mandatory Appendix I, I-1390, "Test Frequency, Classes 2 and 3 Pressure Relief Devices That Are Used for Thermal Relief Application," states, "Tests shall be performed on all Classes 2 and 3 relief devices used in thermal relief application every 10 years, unless performance data indicate more frequent testing is necessary. In lieu of tests the Owner may replace the relief devices at a frequency of every 10 years, unless performance data indicate more frequent replacements are necessary."

### 3.1.2 Components for which Relief is Requested

All pumps and valves contained within the CPNPP, Units 1 and 2, IST Program scope.

### 3.1.3 Licensee's Reason for Requesting Relief

In its letter dated November 5, 2015, the licensee stated, in part, that:

ASME OM Code Section IST establishes the inservice test frequency for all components within the scope of the Code. The frequencies (e.g., quarterly) have always been interpreted as "nominal" frequencies (generally as defined in the Table 3.2 of NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, Revision 2 [dated October 2013 (ADAMS Accession No. ML13295A020)]) and owners routinely applied the surveillance extension time period (i.e., grace period) contained in the plant Technical Specifications (TSs) Surveillance Requirements (SRs). The TSs typically allow for a less than or equal to 25% extension of the surveillance test interval to accommodate plant conditions that may not be suitable for conducting the surveillance (TS SR 3.0.2). However, Regulatory Issue Summary 2012-10, NRC Staff Position on Applying Surveillance Requirements (SRs) 3.0.2 and 3.0.3 to Administrative Controls Program Tests, [dated August 23, 2012 (ADAMS Accession No. ML12079A393),] states that SR 3.0.2 and 3.0.3 cannot be applied to TS 5.5, Programs and Manuals, for tests that are not associated with a TS SR. TS SR 3.0.2 is equivalent to SR 3.0.2 contained in NUREG-1431, Standard Technical Specifications, Westinghouse Plants, [Revision 4 (ADAMS Accession No. ML12100A222)]

The lack of a tolerance band on the ASME OM Code inservice test frequency restricts operational flexibility. There may be a conflict where a surveillance test could be required (i.e., its frequency could expire), but where it is not possible or not desired that it be performed until sometime after a plant condition or associated Limiting Condition for Operation (LCO) is within its applicability.

The NRC recognized this potential issue in the TSs by allowing a frequency tolerance as described in TS SR 3.0.2. The lack of a similar tolerance applied to the [ASME] OM Code testing places an unusual hardship on the plant to adequately schedule work tasks without operational flexibility.

Thus, just as with TS-required surveillance testing, some tolerance is needed to allow adjusting [ASME] OM Code testing intervals to suit the plant conditions and other maintenance and testing activities. This assures operational flexibility when scheduling surveillance tests that minimize the conflicts between the need to complete the surveillance and plant conditions.

### 3.1.4 Licensee's Proposed Alternative

The licensee proposed to use ASME OM Code Case OMN-20, repeated below, for determining acceptable tolerances for pump and valve test frequencies. The proposed alternative will be

utilized for the remainder of the third 10-year interval and will apply to the various frequency specifications of the ASME OM Code for all pumps and valves contained within the IST Program scope.

ASME OM Code Case OMN-20, "Inservice Test Frequency"

ASME OM, Division 1, Section IST and earlier editions and addenda of ASME OM Code specify component test frequencies based either on elapsed time periods (e.g., quarterly, 2 years, etc.) or on the occurrence of plant conditions or events (e.g., cold shutdown, refueling outage, upon detection of a sample failure, following maintenance, etc.). ASME OM Code, Code Case OMN-20, describes test frequency grace periods associated with the IST program for pumps and valves as follows:

- (a) Components whose test frequencies are based on elapsed time periods shall be tested at the frequencies specified in Section IST with a specified time period between tests as shown in [the table below].

<b>Frequency</b>	<b>Specified Time Period Between Tests</b>
Quarterly (or every 3 months)	92 days
Semiannually (or every 6 months)	184 days
Annually (or every year)	366 days
x Years	x calendar years where 'x' is a whole number of years $\geq 2$

The specified time period between tests may be reduced or extended as follows:

- 1) For periods specified as less than 2 yr, the period may be extended by up to 25 percent for any given test.
- 2) For periods specified as greater than or equal to 2 yr, the period may be extended by up to 6 months for any given test.
- 3) All periods specified may be reduced at the discretion of the owner (i.e., there is no minimum period requirement).

Period extension is to facilitate test scheduling and considers plant operating conditions that may not be suitable for performance of the required testing (e.g., performance of the test would cause an unacceptable increase in the plant risk profile due to transient conditions or other ongoing surveillance, test or maintenance activities). Period extensions are not intended to be used repeatedly merely as an operational convenience to extend test intervals beyond those specified.

Period extensions may also be applied to accelerated test frequencies (e.g., pumps in alert range) and other less than 2-yr test frequencies not specified in [the table above].

Period extensions may not be applied to the test frequency requirements specified in [ASME OM Code] Subsection ISTD, Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants, as Subsection ISTD contains its own rules for period extensions.

- (b) Components whose test frequencies are based on the occurrence of plant conditions or events may not have their period between tests extended except as allowed [the ASME OM Code].

### 3.1.5 NRC Staff Evaluation

Historically, licensees have applied and the NRC staff has accepted the standard TS definitions for IST interval (including allowable interval) extensions) to ASME OM Code required testing (Reference NUTEG-1482, Revision 2, Section 3.1.3). Recently, the NRC staff reconsidered the allowance of the TS testing intervals and interval extensions, for IST not associated with TS SRs. As noted in Regulatory Issue Summary (RIS) 2012-10, the NRC determined that programmatic test frequencies cannot be extended in accordance with the TS SR 3.0.2. This includes all IST described in the ASME OM Code not specifically required by the TS SRs. The lack of a tolerance band on the ASME OM Code IST frequency restricts operational flexibility. There may be a conflict where IST could be required (i.e., the frequency could expire), but where it is not possible or not desired that it be performed until after a plant condition or associated Limiting Condition for Operation is within its applicability. Therefore, to avoid this conflict, the IST should be performed when plant conditions allow.

The NRC staff recognized that, just as with TS-required surveillance testing, some tolerance is needed to allow adjusting ASME OM Code testing intervals to suit the plant conditions and other maintenance and testing activities. To provide operational flexibility when scheduling IST that minimize the conflicts between the need to complete the testing and plant conditions, the NRC staff sponsored and co-authored an ASME OM Code inquiry and Code Case to modify the ASME OM Code to include TS-like test interval definitions and interval extension criteria. The resultant ASME-Approved Code Case OMN-20, as described above, was approved by the ASME Operation and Maintenance Standards Committee on February 15, 2012, with the NRC representative voting in the affirmative. Code Case OMN-20 was subsequently published in conjunction with the 2012 Edition of ASME OM Code.

Requiring the licensee to meet the ASME OM Code requirements, without an allowance for defined frequency and frequency extensions for IST of pumps and valves, results in a hardship without a compensating increase in the level of quality and safety. Based on that the licensee proposed to adopt the ASME OM Code Case OMN-20 in its entirety, the NRC staff concludes that implementation of this ASME OM Code Case provides reasonable assurance of operational readiness of pumps and valves subject to the IST requirements of ASME OM Code.



#### 4.0 CONCLUSION

As set forth above, the NRC staff determines that the proposed alternative in RR T-1 provides reasonable assurance of operational readiness of the affected components, and complying with the ASME OM Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2).

Therefore, the NRC staff authorizes RR T-1 for the remainder of the CPNPP, Units 1 and 2, third 10-year IST program interval, which began on August 3, 2013, and is scheduled to end on August 2, 2023. All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request remains applicable.

Principal Contributor: John Huang, NRR/DE/EPNB

Date: January 19, 2016

R. Flores

- 2 -

If you have any questions, please contact Balwant K. Singal at 301-415-3016 or via e-mail at [Balwant.Singal@nrc.gov](mailto:Balwant.Singal@nrc.gov).

Sincerely,

*/RA/*

Robert J. Pascarelli, Chief  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosure:  
Safety Evaluation

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JHuang, NRR/DE/EPNB

**ADAMS Accession No. ML16011A073**

**\* Memo dated January 6, 2016**

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