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

January 29, 2014

Mr. Fadi Diya
Senior Vice President and
Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - REQUEST FOR RELIEF PR-07, ALTERNATIVE TO ASME OM CODE FREQUENCY FOR INSERVICE TESTS (TAC NO. MF2642)

Dear Mr. Diya:

By letter dated August 29, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13242A294), the licensee submitted alternative request PR-07 to the NRC requesting use of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code), Case OMN-20, "Inservice Test Frequency," for the inservice testing (IST) program.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, paragraph 50.55a(a)(3)(ii), the licensee requested to use the proposed alternative in PR-07 on the basis that the ASME OM Code requirements present an undue hardship without a compensating increase in the level of quality or safety.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that the proposed alternative provides reasonable assurance that the affected components are operationally ready. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii), and is in compliance with the ASME OM Code requirements. Therefore, the NRC staff authorizes alternative request PR-07 at Callaway Plant for the remainder of the third 10-year IST program interval which is scheduled to end on December 19, 2014. Alternative request PR-07 was previously verbally approved on August 30, 2013 (ADAMS Accession No. ML13246A307), by the NRC staff for use at Callaway Plant, Unit 1.

All other ASME OM Code requirements for which relief was not specifically requested and approved remain applicable.

If you have any questions, please contact me at 301-415-2296 or via e-mail at fred.lyon@nrc.gov.

Sincerely,

for

Michael T. Markley, Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure:
Safety Evaluation

cc w/encl: Distribution via Listserv

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF PR-07 RELATED TO THE

INSERVICE TESTING PROGRAM FOR THE THIRD 10-YEAR INTERVAL

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letter dated August 29, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13242A294), Union Electric Company (Ameren Missouri, the licensee), submitted alternative request PR-07 to the U.S. Nuclear Regulatory Commission (NRC). The licensee proposed alternatives to certain inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code), for the inservice testing (IST) program at Callaway Plant, Unit 1, for the third 10-year IST program interval.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, paragraph 50.55a(a)(3)(ii), the licensee requested to use the proposed alternative in PR-07 on the basis that the ASME OM Code requirements present an undue hardship without a compensating increase in the level of quality or safety.

Alternative request PR-07 was previously verbally approved on August 30, 2013 (ADAMS Accession No. ML13246A307), by the NRC staff for use at Callaway Plant, Unit 1.

2.0 REGULATORY EVALUATION

The regulations in 10 CFR 50.55a(f), "Inservice testing requirements," require, 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.

The regulations in 10 CFR 50.55a(a)(3), state, in part, that alternatives to the requirements of 10 CFR 50.55a(f) may be authorized by the NRC if the licensee demonstrates that: (i) the proposed alternative provides 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.

The Callaway Plant's third 10-year IST interval began on December 19, 2005, and is currently scheduled to end on December 19, 2014. The IST program complies with the ASME OM Code, 2001 Edition through 2003 addenda.

Based on the above, and subject to the NRC's findings with respect to authorizing the proposed alternatives to the ASME OM Code given below, the NRC staff concludes that regulatory authority exists for the licensee to request and the Commission to authorize the alternatives requested by the licensee.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Alternative Request PR-07

This request applies to the test 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:

Code Paragraph	Description
ISTA-3120(a)	"The frequency for the inservice testing shall be in accordance with the requirements of Section IST."
ISTB-3400	Frequency of Inservice Tests
ISTC-3510	Exercising Test Frequency
ISTC-3540	Manual Valves
ISTC-3630(a)	Frequency
ISTC-3700	Position Verification Testing
ISTC-5221 (c)(3)	"At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in a group shall be disassembled and examined at least once every 8 years."
Appendix I, I-1320	Test Frequencies, Class 1 Pressure Relief Valves
Appendix I, I-1330	Test Frequencies, Class 1 Nonreclosing Pressure Relief Devices
Appendix I, I-1340	Test Frequencies - Class 1 Pressure Relief Valves that are used for Thermal Relief Application
Appendix I, I-1350	Test Frequencies - Class 2 and 3 Pressure Relief Valves
Appendix I, I-1360	Test Frequencies - Class 2 and 3 Nonreclosing Pressure Relief Devices
Appendix 1, I-1370	Test Frequencies - Class 2 and 3 Primary Containment Vacuum Relief Valves
Appendix I, I-1380	Test Frequencies - Class 2 and 3 Vacuum Relief Valves Except for Primary Containment Vacuum Relief Valves
Appendix I, I-1390	Test Frequencies - Class 2 and 3 Pressure Relief Valves that are used for Thermal Relief Application
Appendix II, II-4000(a)(1)	Performance Improvement Activities Interval
Appendix II, II-4000(b)(1)(e)	Optimization of Condition Monitoring Activities Interval

Reason for Request

In its letter dated August 29, 2013, 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 Table 3.2 of NUREG-1482, Revision 1[1]) and Owners routinely applied the surveillance extension time period (i.e., grace period) contained in the plant Technical Specifications (TS) Surveillance Requirements (SRs). The TS 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 (SR 3.0.2). However, regulatory issues have been raised concerning the applicability of the TS "grace period" to ASME OM Code required inservice test frequencies irrespective of allowances provided under TS Administrative Controls. (TS 5.5.8, "Inservice Testing Program," which invokes SR 3.0.2 for various OM Code frequencies.)

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 the plant operating conditions may not be suitable for performance of the required testing.

The NRC recognized this potential issue in the TS, by allowing a frequency tolerance as described in the Callaway Plant TS 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 ISTs that minimize the conflicts between the need to complete the testing and plant conditions.

Proposed Alternative

The licensee proposes to adopt ASME OM Code Case OMN-20, *Inservice Test Frequency*, which was published in conjunction with ASME OM Code, 2012 Edition. The purpose of this code case is to prescribe a methodology for determining acceptable tolerances for pump and valve test frequencies. The text of Code Case OMN-20 is shown below. This proposed alternative will be utilized for the remainder of the Callaway Plant third 10-year IST interval, which began on December 19, 2005, and is currently scheduled to end on December 19, 2014. This alternative will apply to the various frequency specifications of the ASME OM Code for all pumps and valves contained within the IST Program scope.

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[1] NUREG-1482, Revision 1, "Guidelines for Inservice Testing at Nuclear Power Plants, Final Report," January 2005 (ADAMS Accession No. ML050550290).

Code Case OMN-20 – Inservice Test Frequency

ASME OM, Division 1, Section IST and all earlier editions and addenda specify component test frequencies based either on elapsed time periods (e.g., quarterly, 2 years, etc.) or the occurrence of plant conditions or events (e.g., cold shutdown, refueling outage, upon detection of a sample failure, following maintenance, etc.).

(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 Table 1. The specified time period between tests may be reduced or extended as follows:

1) For periods specified as fewer than 2 years, 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 years, 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 fewer than 2-year test frequencies not specified in Table 1.

Period extensions may not be applied to the test frequency requirements specified in 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.

Table 1 Specified Test Frequencies

Frequency	Specified Time Period Between Tests
Quarterly (or every 3 mo)	92 days
Semiannually (or every 6 mo)	184 days
Annually (or every year)	366 days
x years	*x* calendar years where *x* is a whole number of years ≥ 2

(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 by ASME OM, Division 1, Section IST, 2009 Edition through OMa-2011 Addenda and all earlier editions and addenda.

3.2 NRC Staff Evaluation

Historically, licensees have applied and the NRC staff has accepted the standard TS definitions for IST intervals (including allowable interval extensions) to ASME OM Code-required testing (see Section 3.1.3 of NUREG-1482, Revision 2, "Guidelines for Inservice Testing at Nuclear Power Plants: Inservice Testing of Pumps and Valves and Inservice Examination and Testing of Dynamic Restraints (Snubbers) at Nuclear Power Plants," October 2013, at ADAMS Accession No. ML13295A020). Recently, the NRC staff reconsidered the allowance of using TS testing intervals and interval extensions for IST not associated with TS SRs. As noted in Regulatory Issue Summary (RIS) 2012-10, "NRC Staff Position on Applying Surveillance Requirements 3.0.2 and 3.0.3 to Administrative Controls Program Tests," dated August 23, 2012 (ADAMS Accession No. ML12079A393), 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.

Following this development, 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 Code Case OMN-20, as shown 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 ASME OM Code, 2012 Edition. The licensee proposes to adopt Code Case OMN-20.

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 the prior acceptance by the NRC staff of the similar TS test interval definitions and interval extension criteria, the staff concludes that implementation of the test interval definitions and interval extension criteria contained in ASME OM Code Case OMN-20 is acceptable. Allowing usage of Code Case OMN-20 provides reasonable assurance of operational readiness of pumps and valves subject to the ASME OM Code IST.

4.0 CONCLUSION

As set forth above, the NRC staff determines that for alternative request PR-07, the proposed alternative provides reasonable assurance that the affected components are operationally ready. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii), and is in compliance with the ASME OM Code requirements. Therefore, the NRC staff authorizes alternative request PR-07 at Callaway Plant, Unit 1, for the remainder of the third 10-year IST program interval which is scheduled to end on December 19, 2014.

All other ASME OM Code requirements for which relief was not specifically requested and approved remain applicable.

Principal Contributor: J. Billerbeck, NRR/DE/EPNB

Date: January 29, 2014

If you have any questions, please contact me at 301-415-2296 or via e-mail at fred.lyon@nrc.gov.

Sincerely,

/RA by JSebrosky for/

Michael T. Markley, Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure:
Safety Evaluation

cc w/encl: Distribution via Listserv

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