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

November 24, 2008

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

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: INSERVICE TESTING PROGRAM (TAC NO. MD7785)

Dear Mr. Heflin:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 187 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1, operated by the Union Electric Company (the licensee). The amendment consists of changes to the Technical Specifications (TS) in response to your application dated December 28, 2007 (ULNRC-05462).

The amendment revises TS 5.5.8, "Inservice Testing Program," to indicate that the Inservice Testing (IST) Program shall include testing frequencies applicable to the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), and to indicate that there may be some non-standard frequencies, specified as once every 2 years or less in the IST Program, to which provisions of surveillance requirement (SR) 3.0.2 are applicable.

The amendment also revises TS 5.5.8.a and TS 5.5.8.d to reference a more recent ASME OM Code. In addition, the amendment revises TS 5.5.8.b to allow any test frequency in the IST Program that is 2 years or less to be extended up to 25 percent in accordance with the provisions in TS SR 3.0.2.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

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

Docket No. 50-483

Enclosures:
1. Amendment No. 187 to NPF-30
2. Safety Evaluation

cc w/encls: Distribution via Listserv

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

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 187
License No. NPF-30

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Union Electric Company (UE, the licensee), dated December 28, 2007, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-30 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan*

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective as of its date of issuance, and shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Facility
Operating License No. NPF-30
and Technical Specifications

Date of Issuance: November 24, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 187

FACILITY OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Replace the following pages of the Facility Operating License No. NPF-30 and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

REMOVE	INSERT
-3-	-3-

Technical Specifications

REMOVE	INSERT
5.0-10	5.0-10
5.0-11	5.0-11
5.0-12	5.0-12

(4) UE, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source of special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) UE, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

UE is authorized to operate the facility at reactor core power levels not in excess of 3565 megawatts thermal (100% power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan*

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Environmental Qualification (Section 3.11, SSER #3)**

Deleted per Amendment No. 169

* Amendments 133, 134, & 135 were effective as of April 30, 2000 however these amendments were implemented on April 1, 2000.

** The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

5.5 Programs and Manuals (continued)

5.5.8 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. The program shall include the following:

a. Testing frequencies applicable to the ASME Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code) and applicable Addenda as follows:

ASME OM Code and applicable Addenda terminology for inservice testing activities	Required Frequencies for performing inservice testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

b. The provisions of SR 3.0.2 are applicable to the above required Frequencies and to other normal and accelerated Frequencies specified as 2 years or less in the Inservice Testing Program for performing inservice testing activities;

c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and

d. Nothing in the ASME OM Code shall be construed to supersede the requirements of any TS.

5.5.9 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

(continued)

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program (continued)

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 a 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 inservice 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 cooldown, and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 (3DP) 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 total for all four steam generators.

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

(continued)

5.5 Programs and Manuals

5.5.9 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.

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. 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. 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.

2. 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, 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)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 187 TO

FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

In an application dated December 28, 2007, for an amendment to its facility operating license (Agencywide Documents Access and Management System (ADAMS) Accession No. ML080150437), Union Electric Company (the licensee) requested Nuclear Regulatory Commission (NRC) approval of a proposed Technical Specification (TS) change for Callaway Plant, Unit 1. The amendment revises several of the administrative controls for the inservice testing (IST) program in Section 5.5.8 of the TS.

The licensee proposed to revise Callaway Plant, Unit 1 TS Sections 5.5.8.a and 5.5.8.d to reference a more recent American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code).

The licensee also proposed to revise TS Section 5.5.8.b to allow any testing frequency in the IST program that is 2 years or less be extended up to 25 percent in accordance with the provisions in TS Surveillance Requirement (SR) 3.0.2.

These TS changes adopt the NRC-approved provisions in TS Task Force (TSTF) Change Traveler TSTF-479, Revision 0, "Changes to Reflect Revision of 10 CFR 50.55a [Title 10 of the *Code of Federal Regulations* Section 50.55a]" (ADAMS Accession No. ML053460302), and TSTF Change Traveler TSTF-497, Revision 0, "Limit Inservice Testing Program Application to Frequencies of 2 Years or Less" (ADAMS Accession No. ML062780321).

The NRC staff has reviewed and evaluated the licensee's request as discussed below.

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. These TSs are derived from the plant safety analyses.

Part 50 of 10 CFR includes the NRC's requirement that TSs shall be included by applicants for a license authorizing operation of a production or utilization facility. Paragraph 50.36(c) of 10 CFR requires that TSs include items in five specific categories related to station operation. These categories are (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operations (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. As required by 10 CFR 50.36(c)(5), administrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner. The proposed amendment is within the administrative controls category.

Section 50.55a(f) of 10 CFR, "Inservice Testing Requirements," requires, in part, that ASME Class 1, 2, and 3 components meet the (IST) requirements of the ASME OM Code.

Paragraph 50.55a(f)(4)(ii) of 10 CFR requires that IST programs be revised every 10 years (120 months) to comply with the requirements of the latest edition and addenda of the ASME OM Code for Nuclear Power Plants that are incorporated by reference in 10 CFR 50.55a(b)(3).

Paragraph 50.55a(f)(5)(ii) of 10 CFR requires that, if a revised IST program for a facility conflicts with the TS for that facility, the licensee shall apply to the Commission for amendment of the TS to conform the TS to the revised program.

The licensee is required to submit the application, as specified in 10 CFR 50.4, at least 6 months before the start of the period during which the provisions become applicable, as determined by 10 CFR 50.55a(f)(4).

The ASME OM Code was initially incorporated by reference in 10 CFR 50.55a(b)(3) in a final rule published in the *Federal Register* (FR) on September 22, 1999 (64 FR 51370). Prior to the final rule, IST programs were required to meet the requirements of Section XI, Division 1, of the ASME Boiler and Pressure Vessel Code (ASME Code). The ASME deleted the rules for IST of pumps and valves from Section XI in the 2000 Addenda because the rules for the IST of pumps and valves were placed in the ASME OM Code. The Callaway Plant, Unit 1 10-year IST program was developed to meet the requirements of the ASME OM Code. The licensee submitted this TS amendment to revise Callaway Plant, Unit 1 TS Sections 5.5.8.a and 5.5.8.d to reference the IST requirements in the ASME OM Code and delete the reference to the ASME Code, Section XI IST requirements.

3.0 TECHNICAL EVALUATION

The licensee proposed to revise TS Sections 5.5.8.a and 5.5.8.d to reference more recent reference to OM Code. Paragraph 10 CFR 50.55a(f)(4), "Inservice Testing Requirements," requires, in part, that ASME Class 1, 2, and 3 components must meet the requirements of the ASME OM Code. The ASME publishes a new edition of the ASME OM Code every 3 years. The Callaway Plant Unit 1 IST program for third interval was updated to comply with the 2001 Edition through 2003 Addenda of the ASME OM Code pursuant to 10 CFR 50.55a(f)(4)(ii). As discussed in Section 2.0 of this safety evaluation, the reference to Section XI of the ASME Code for IST requirements in TS Sections 5.5.8.a and 5.5.8.d results in a reference to a deleted portion of the ASME Code. To address this, the licensee proposed to adopt the administrative TS changes approved in TSTF Traveler TSTF-479, Revision 0. The changes to TS

Sections 5.5.8.a and 5.5.8.d do not eliminate any inservice tests and do not deprive the licensee of its ability to seek relief from Code test requirements. The changes will eliminate the ASME Code inconsistency between the IST program and the TS pursuant to 10 CFR 50.55a(f)(5)(ii). The proposed amendment changes to the TS references from the ASME Code, Section XI to the ASME OM Code will maintain consistency with the Code requirements. Therefore, the NRC staff finds the proposed TS changes to be acceptable. Additionally, the proposed changes to TS 5.5.8.a and TS 5.5.8.d are consistent with the comparable Section 5.5.8 in NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 3.1 (ADAMS Accession No. ML062510017).

The Callaway Plant, Unit 1 TSs supplement the IST program requirements of 10 CFR 50.55a and the ASME OM Code. TS Sections SR 3.0.2 and 5.5.8.b provide for an IST program test frequency that is more extensive than that in the ASME OM Code. The licensee submitted this TS amendment to revise Callaway Plant, Unit 1 TS Section 5.5.8.b to allow any test frequency in the IST program that is 2 years or less be extended up to 25 percent in accordance with the provisions in TS SR 3.0.2. TS Section 5.5.8.a lists ASME Code weekly, monthly, quarterly, semiannual, every 9 months, yearly and biennial test frequencies, but this is not a complete list of the test frequencies specified in the IST program.

The licensee submitted this TS amendment to revise Callaway Plant, Unit 1 TS Section 5.5.8.b to expand the scope of the IST program frequencies that can be extended up to 25 percent to include normal and accelerated frequencies specified as 2 years or less in the IST program. This change recognizes that the IST program may direct that additional tests be performed in accordance with the ASME OM Code that are not at the standard intervals listed in TS 5.5.8.a. Additionally, the licensee has explicitly limited application of SR 3.0.2 to frequencies specified as 2 years or less. The proposed change to TS Section 5.5.8.b is consistent with the NRC approved provisions in TSTF Change Traveler TSTF-479, Revision 0, and TSTF Change Traveler TSTF-497, Revision 0. The proposed change to TS Section 5.5.8.b is also consistent with the NRC recommendation in Section 3.1.3 of NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants," Revision 1 (ADAMS Accession No. ML050350278). Section 3.1.3 states that a maximum allowable extension not to exceed 25 percent may be applied to intervals that are 2 years or less.

Based on the above, the NRC staff concludes that the licensee's proposed changes are technically justified and conform to the requirements of 10 CFR Sections 50.55a and 50.36. Therefore, the NRC staff finds that the proposed changes to the TS of the Callaway Plant, Unit 1 are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Missouri State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no

significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding published in the *Federal Register* on March 25, 2008 (73 FR 15789). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. Tingen

Date: November 24, 2008

November 24, 2008

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

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: INSERVICE TESTING PROGRAM (TAC NO. MD7785)

Dear Mr. Heflin:

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The amendment revises TS 5.5.8.a and TS 5.5.8.d to reference a more recent ASME OM Code. In addition, the amendment revises TS 5.5.8.b to allow any test frequency in the IST Program that is 2 years or less to be extended up to 25 percent in accordance with the provisions in TS SR 3.0.2.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

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

Docket No. 50-483
Enclosures:
1. Amendment No. 187 to NPF-30
2. Safety Evaluation
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ADAMS Accession No. ML082460241 (**) See previous concurrence (*) SE input memo

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	DCI/CPTB/BC	OGC - NLO	NRR/LPL4/BC	NRR/LPL4/PM
NAME	MThadani**	JBurkhardt**	JMcHale*	RVHolmes**	MMarkley**	MThadani
DATE	10/27/08	10/10/08	3/6/08	10/22/08	11/21/08	11/24/08

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