

March 17, 2004

Mr. Garry L. Randolph
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:
CONTAINMENT TENDON SURVEILLANCE PROGRAM AND CONTAINMENT
LEAKAGE RATE TESTING PROGRAM (TAC NO. MC1497)

Dear Mr. Randolph:

The Commission has issued the enclosed Amendment No. 160 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1. The amendment consists of changes to the technical specifications (TSs) in response to your application dated December 8, 2003 (ULNRC-04923).

The amendment revises Technical Specification (TS) Section 5.5.6, "Containment Tendon Surveillance Program," for consistency with the requirements of 10 CFR 50.55a(g)(4) for components classified as Code Class CC. The amendment also deletes the provisions of Surveillance Requirement (SR) 3.0.2 from this TS. In addition, the amendment revises TS 5.5.16, "Containment Leakage Rate Testing Program," to add exceptions to Regulatory Guide 1.163, "Performance-Based Containment Leak-Testing Program."

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/

Meena Khanna, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures: 1. Amendment No. **160** to NPF-30
2. Safety Evaluation

cc w/encls: See next page

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Callaway Plant, Unit 1

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UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 160
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 8, 2003, 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:

(A) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 160 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 from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Stephen Dembek, Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 17, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 160

FACILITY OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

5.0-9
5.0-26
5.0-27

INSERT

5.0-9
5.0-26
5.0-27

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 160 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By application dated December 8, 2003, Union Electric Company (licensee) requested changes to the Technical Specifications (TSs, Appendix A to Facility Operating License No. NPF-30) for the Callaway Plant. The proposed amendment would revise TS Section 5.5.6, "Containment Tendon Surveillance Program," for consistency with the requirements of Section 50.55a(g)(4) to Title 10 of the *Code of Federal Regulations* for components classified as Code Class CC. The licensee's proposed revision to TS 5.5.6 is to indicate that the Containment Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with Section XI, Subsection IWL of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code and the applicable addenda as required by 10 CFR 50.55a, except where an exemption or relief has been authorized by the NRC. The licensee has also proposed to delete the provisions of Surveillance Requirement (SR) 3.0.2 from this TS. In addition, the licensee proposed to revise TS 5.5.16, "Containment Leakage Rate Testing Program," to add exceptions to Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Testing Program." The licensee also provided, in its application, the corresponding changes to the TS Bases for SR 3.6.1.1 and SR 3.6.1.2.

2.0 REGULATORY REQUIREMENTS

Section 50.55a(b)(2)(vi) of 10 CFR requires that licensees use either the 1992 Edition with the 1992 Addenda or the 1995 Edition with the 1996 Addenda of Subsection IWE and Subsection IWL of the ASME Code, as modified and supplemented by the requirements in paragraphs (b)(2)(viii) and (b)(2)(ix) of 10 CFR 50.55a when implementing the initial 120-month inspection interval for the containment inservice inspection requirements of 10 CFR 50.55a.

Section 50.55a(g)(4) of 10 CFR requires that throughout the service of a boiling or pressurized water-cooled nuclear power facility, components which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements set forth in Section XI of editions of the ASME Code and Addenda that become effective subsequent to editions specified in paragraphs (g)(2) and (g)(3) of 10 CFR 50.55a and that are incorporated by reference in paragraph (b) of 10 CFR 50.55a, to the extent practical within the limitations of design, geometry and materials of construction of the components.

10 CFR 50.54(o) requires that primary reactor containments for water cooled power reactors, other than facilities for which the certifications required under 10 CFR 50.82(a)(1) have been submitted, shall be subject to the requirements set forth in Appendix J to this part.

3.0 TECHNICAL EVALUATION

3.1 Proposed Changes to Technical Specifications

In its application, the licensee proposed the following changes to TSs 5.5.6 and 5.5.16:

1. TS 5.5.6 – at the end of the first paragraph after the phrase "in accordance with," the phrase "FSAR Chapter 16" would be replaced by the phrase "Section XI, Subsection IWL of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50.55a, except where an exemption or relief has been authorized by the NRC."
2. TS 5.5.6 – SR 3.0.2 would be deleted from the second paragraph. If SR 3.0.2 is applicable, then the interval, as specified in the TS, may be extended up to 1.25 times that interval.
3. TS 5.5.16.a – at the end of the paragraph, the following is added to modify compliance with RG 1.163: "as modified by the following exceptions: (1) the visual examination of containment concrete surfaces intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B testing, will be performed in accordance with the requirements of and frequency specified by ASME Section XI Code, Subsection IWL, except where relief has been authorized by the NRC. (2) The visual examination of the steel liner plate inside containment intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B testing, will be performed in accordance with the requirements of and frequency specified by ASME Section XI Code, Subsection IWE, except where relief has been authorized by the NRC."

The staff noted a typographical error in Attachment 3 of the licensee's submittal, "Retyped Technical Specification Pages," where the licensee inadvertently used the word "plant" instead of "plate." The staff discussed this with the licensee via telecon on January 21, 2004.

The proposed amendment modifies the requirements on containment tendon surveillance and containment leakage rate testing programs. It does not change the design requirements on the containment.

As proposed in item 1 above, the containment tendon surveillance program and its inspection frequencies and acceptance criteria are proposed to be changed from that specified in Final Safety Analysis Report (FSAR) Chapter 16 to that specified in Section XI, Subsection IWL of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50.55a, except where an exemption or relief has been authorized by the NRC. Item 2 deletes SR 3.0.2 from TS 5.5.6.

As proposed in item 3, the amendment would not change the current requirements that the leakage rate testing program shall meet the requirements of 10 CFR 50.54(o) and 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions. However, the current requirement that the program shall be in accordance with RG 1.163 shall be modified by adding two exceptions to the RG.

3.2 Evaluation

The requirements of 10 CFR 50.55a were amended (61 FR 41303) to incorporate, by reference, Subsections IWE and IWL of Section XI of the ASME Code, for the inspection of containments of light water-cooled reactors. Subsection IWE provides the requirements for inservice inspection, repair, and replacement of Class MC pressure retaining components, and metallic shell and penetration liners of Class CC pressure retaining components, and their integral attachments. Subsection IWL provides the requirements for preservice examination, inservice inspection (ISI), and repair of reinforced containments.

Currently, TS 5.5.6 states in part, "The Containment Tendon Surveillance Program, and its inspection frequencies and acceptance criteria shall be in accordance with FSAR Chapter 16." Section 16.6.1.2 of the FSAR provides the current requirements for the containment tendon surveillance program. The regulation covering the ISI of the containment tendons is 10 CFR 50.55a(g)(4). This requires that "throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of editions of the ASME Boiler and Pressure Vessel Code and Addenda that become effective subsequent to editions specified in..."

The licensee has proposed to replace the reference to FSAR Chapter 16 by a reference to the regulations and to the specific subsection of Section XI of the ASME Code for containment tendons (IWL). Because the licensee has proposed the specific regulatory requirements for the containment tendon surveillance program, the staff concludes that the proposed change is acceptable.

Additionally, since the tendon inspection frequencies will be in accordance with ASME Section XI, Subsection IWL, the provisions of SR 3.0.2 are no longer necessary and are deleted from TS 5.5.6. As such, 10 CFR 50.55a requires the implementation of ASME Section XI, Subsection IWL, and specifies the requirements for extending inspection frequencies. Based on this, the staff concludes that deletion of SR 3.0.2 from TS 5.5.6 is acceptable.

For TS 5.5.16, the licensee stated in its application that:

Currently, the Callaway Plant TS 5.5.16 contains requirements for the containment leakage rate testing program, and it specifies that the program shall be in accordance with the guidelines contained in RG 1.163. Regulatory Position C.3 of RG 1.163 states that "Section 9.2.1, "Pretest Inspection and Test Methodology," of NEI 94-01 provides guidance for the visual examination of accessible interior and exterior surfaces for the containment system for structural problems. These examinations should be conducted prior to initiating a Type A test, and during two other refueling outages before the next Type A test, if the

interval for the Type A test has been extended to 10 years, in order to allow for early uncovering of evidence of structural deterioration.” There are no specific requirements in NEI 94-01 for the visual examination, except that it is to be a general visual examination of accessible interior and exterior surfaces of the primary containment components.

The licensee proposes to modify TS 5.5.16 to specify that:

In addition to the requirements of RG 1.163 and NEI 94-01, the concrete surfaces of the containment must be visually examined in accordance with the ASME Section XI Code, Subsection IWL, and the liner plate inside containment must be visually examined in accordance with Subsection IWE. The frequency of visual examination of the concrete surfaces per Subsection IWL is once every five years, and the frequency of visual examination of the liner plate per Subsection IWE is, in general, three visual examinations over a 10-year period. The visual examinations performed pursuant to Subsection IWL may be performed at any time during power operation or during shutdown, and the visual examinations performed pursuant to Subsection IWE are performed during refueling outages, since this is the only time that the liner plate is fully accessible.

As a result of this modification to TS 5.5.16, one less visual examination will be conducted during the 10-year interval. The licensee indicated, however, that the requirements of Subsection IWE and IWL are more rigorous than those performed pursuant to RG 1.163 and NEI 94-01. Further, the licensee stated that with respect to examinations performed pursuant to both Subsections IWL and IWE, visual examinations of both the concrete surfaces and the liner plate must be reviewed by an inspector regularly employed by an insurance company authorized to write boiler and pressure vessel insurance, in accordance with IWA-2110 and IWA-2120 of the ASME Code. The staff agrees that the combination of the Code requirements for the visual examinations plus the third party review will offset the fact that there will be one less visual examination during the 10-year interval.

The regulation 10 CFR 50.55a(b)(2)(ix)(E) states, “a general visual examination as required by Subsection IWE must be performed once each period.” For Callaway, the IWE requirements of their Code of record, which is the 1992 Edition of the ASME Code, requires the general visual examination prior to each Type A test. With the relaxation of leak rate test frequencies in Option B of Appendix J, these examinations may be performed at 10 or 15 years, as indicated in the Callaway TS, which is less restrictive than the frequency specified in 10 CFR 50.55a(b)(2)(ix)(E). However, because the operating license requires the licensee to comply with both the technical specifications and the regulations, the licensee will be required to comply with the more restrictive interval specified in the regulations.

Therefore, in operating Callaway, the licensee must meet the requirements in both the technical specifications and the regulations and, if both documents should specify different frequencies for the same surveillance, in this case, a general visual examination of the steel containment liner plate, the licensee must follow the more restrictive frequency. By following the more restrictive frequency, the license is complying with both sets of requirements. The licensee stated as such in its application. Also, in a conference call with the licensee on February 11, 2004, the licensee indicated that when it adopts its next Code of record, the new Code of record is not anticipated to be different than 10 CFR 50.55a(b)(2)(ix)(E).

Based on the previous paragraph, the staff concludes that the proposed amendment, with respect to TS 5.5.16, complies with 10 CFR 50.55a(g)(5)(ii), in that the licensee's ISI program is in compliance with both the regulations and the technical specifications.

The staff agrees with the licensee that the visual examinations of the containment concrete surfaces and the liner plate performed pursuant to Subsections IWL and IWE, respectively, are more rigorous than those performed pursuant to RG 1.163 and NEI 94-01. The requirements in Subsections IWL and IWE of the ASME Code constitute acceptable requirements for the inspection of the concrete surfaces and the liner plate in the Callaway containment, in that the requirements in Subsections IWL and IWE meet 10 CFR 50.55a(b)(2)(vi) and 50.55a(g)(4). Therefore, the staff finds that the changes proposed with respect to TS 5.5.16 are acceptable.

3.3 Conclusions

Based on the above findings and the consistency of the proposed amendment to Section XI of the ASME Code, the staff concludes that the proposed amendment is acceptable. The staff also reviewed the licensee's identified changes to the TS Bases that were included in the application. The staff has no disagreement with these changes.

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 did not offer any comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes the surveillance requirements. 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 (69 FR 700). 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: Meena Khanna

Date: March 17, 2004