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

March 17, 2010

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: REVISION TO TECHNICAL SPECIFICATION 5.5.16, "CONTAINMENT LEAKAGE RATE TESTING PROGRAM" (TAC NO. ME0986)

Dear Mr. Heflin:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 195 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 March 20, 2009 (ULNRC-05598), as supplemented by letters dated December 10, 2009 (ULNRC-05671), and January 19, 2010 (ULNRC-05673).

The amendment revises TS 5.5.16, "Containment Leakage Rate Testing Program." TS 5.5.16 establishes the program for leakage rate testing of the Callaway Plant, Unit 1 containment, as required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54, "Conditions of Licenses," and 10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," Option B, "Performance Based Requirements."

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. 195 to NPF-30
2. Safety Evaluation

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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. 195
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 March 20, 2009, as supplemented by letters dated December 10, 2009, and January 19, 2010, 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. 195 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: March 17, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 195

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
5.0-19	5.0-19

(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. 195 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.

5.5.16 Containment Leakage Rate Testing Program (continued)

2. The visual examination of 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.

3. The unit is excepted from post-modification integrated leakage rate testing requirements associated with steam generator replacement during the Refuel 14 outage (fall of 2005).

4. The first Type A test performed after the October 26, 1999 Type A test shall be performed no later than October 25, 2014.

b. The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 48.1 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.20% of the containment air weight per day.

d. Leakage rate acceptance criteria are:

1. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.60\ L_a$ for the Type B and C tests and $\leq 0.75\ L_a$ for Type A tests;

2. Air lock testing acceptance criteria are:

a) Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$;

b) For each door, leakage rate is $\leq 0.005\ L_a$ when pressurized to ≥ 10 psig.

e. The provisions of Technical Specifications SR 3.0.2 do not apply to the test frequencies in the Containment Leakage Rate Testing Program.

f. The provisions of Technical Specification SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 195 TO

FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By application dated March 20, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090970590), as supplemented by letters dated December 10, 2009, and January 19, 2010 (ADAMS Accession Nos. ML093480106 and ML100200080, respectively), Union Electric Company (the licensee) requested an amendment to Appendix A, Technical Specifications (TSs) of Facility Operating License No. NPF-30 for Callaway Plant, Unit 1 (Callaway). The supplemental letters dated December 10, 2009, and January 19, 2010, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on August 25, 2009 (74 FR 42931).

The proposed amendment would revise TS 5.5.16, "Containment Leakage Rate Testing Program." The revision would reflect a one-time extension of the current containment Type A leak rate test (integrated leak rate test or ILRT) interval requirement of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," Option B, "Performance Based Requirements," from 10 years to 15 years. The proposed change will allow the next ILRT to be performed no later than October 25, 2014.

The NRC staff has reviewed the licensee's request to evaluate structural and leak-tight integrity of the containment structures and the ability of the licensee's local leak rate testing (LLRT) program and inservice inspection (ISI) program to detect and manage aging degradation of the containment, if the ILRT test interval is extended as proposed by the licensee. Additionally, the staff has reviewed the licensee's evaluation of the increase in projected risk due to the 5-year extension of ILRT interval, to ensure that the projected risk due to the change is within the risk-informed decision making guidelines, including the key principles, of NRC Regulatory Guide (RG) 1.174, Revision 1, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed

Decisions on Plant-Specific Changes to the Licensing Basis," dated November 2002 (ADAMS Accession No. ML023240437) is maintained.

2.0 REGULATORY EVALUATION

The regulations in 10 CFR Part 50, Appendix J, Option B require that a Type A test be conducted at a periodic interval based on historical performance of the overall containment system. Callaway TS 5.5.16, "Containment Leakage Rate Testing Program," requires that leakage rate testing be performed as required by 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in NRC RG 1.163, "Performance-Based Containment Leak-Test Program," September 1995 (ADAMS Accession No. ML003740058). This RG endorses, with certain exceptions, the Nuclear Energy Institute (NEI) report NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J" (ADAMS Legacy Library Accession No. 9510200180), dated July 26, 1995.

A Type A test is an overall leakage rate test (integrated leak rate test or ILRT) of the containment structure. NEI 94-01, Revision 0 specifies an initial test interval of 48 months, but allows an extended interval of 10 years, based upon two consecutive successful tests. There is also a provision for extending the test interval an additional 15 months in certain circumstances if the previous tests have been successful. The most recent two Type A tests at Callaway have been successful, so the current interval requirement would normally be 10 years.

The licensee is requesting a change to TS 5.5.16 which would add an exception from the guidelines of RG 1.163 and NEI 94-01, Revision 0, regarding the Type A test interval. Specifically, the exception would state that "The first Type A test performed after the October 26, 1999, Type A test shall be performed no later than October 25, 2014." This would be after a 15-year ILRT interval.

The local leakage rate tests (Type B and Type C tests), including their schedules, are not affected by this request for an amendment.

Pursuant to 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, a Type A test must be conducted (1) after a containment system has been completed and is ready for operation, and (2) at a periodic interval based on historical performance of the overall containment system. Section V.B.3 of 10 CFR 50 Appendix J, Option B, requires that the regulatory guide or other implementation document used by a licensee to develop a performance-based leakage-testing program must be included, by general reference, in the plant TSs. Further, the submittal for TS revisions must contain justification, including supporting analyses, if the licensee chooses to deviate from methods approved by the Commission (NRC) and endorsed in a regulatory guide.

RG 1.163 endorses, with certain exceptions, NEI 94-01. NEI 94-01 specifies an initial test interval of 48 months, but allows an extended interval of 10 years, based upon two consecutive successful Type A tests. However, by the current application, the licensee is seeking a deviation from the NEI 94-01 requirements by requesting a one-time extension of the Type A test interval from 10 years to 15 years, based on historical structural tightness of its containment, supported by a risk analysis.

The proposed TS change does not involve any other changes to licensing basis or acceptance criteria.

3.0 TECHNICAL EVALUATION

3.1 Containment ISI Program and Structural/Leak-Tight Integrity Considerations

The Callaway Plant containment consists of a concrete containment building, its steel liner, and the penetrations through this steel-lined concrete structure. The containment is a pre-stressed, reinforced concrete cylindrical structure with a hemispherical dome and a conventionally reinforced concrete base slab with a central cavity and instrumentation tunnel to house the reactor vessel. A continuous peripheral tendon access gallery below the base slab is provided for the installation and inspection of the vertical post-tensioning system. The base slab, cylinder, and dome are reinforced by bonded reinforcing steel, as required by the design loading conditions. The inside structure is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions. A post-tensioning system is used to pre-stress the cylindrical shell and dome. The concrete containment building is required for structural integrity of the containment under design-basis accident (DBA) conditions. The steel liner and its penetrations establish the leakage-limiting boundary of the containment. Maintaining operability of the containment will limit leakage of fission product radioactivity released from the containment to the environment, under a DBA condition. The integrity of the containment penetrations and isolation valves is verified through Type B and Type C LLRTs, and the overall leak-tight integrity of the containment is verified by a Type A ILRT, as required by 10 CFR 50, Appendix J. These tests are performed at the calculated peak containment internal pressure related to the design-basis loss-of-coolant accident. Under Option B, the Callaway Plant currently has an ILRT interval of 10 years. The licensee requested a one-time 5-year extension of the Type A test interval from 10 years to 15 years. The licensee justifies the proposed change based on historical plant-specific containment leakage testing program results and containment inservice inspection program (CISI) results, as supported by a risk analysis.

The leakage rate testing requirements of 10 CFR 50, Appendix J, Option B (Type A ILRT and Type B and Type C LLRTs), and the CISI requirements, mandated by 10 CFR 50.55a, together, help ensure the continued leak-tight and structural integrity of the containment during its service life. In Table 4.4.1 of Section 4.4.1 of Attachment 1 of its letter dated March 20, 2009, the licensee presented the plant-specific results from the recent three Type A ILRTs (dated April 1987, October 1990, and October 1999) for the Callaway Plant, Unit 1. These tests were successful. The results of these tests indicated that the as-found leakage rates were 0.0830, 0.1987, and 0.0533 percent weight per day. These results were within the allowable containment leakage rate of 0.200 percent weight per day. Therefore, the NRC staff concludes that these results validate the structural and leakage integrity of the containment structure and demonstrate adequate performance of the containment structure in ensuring an essentially leak-tight barrier.

The licensee stated that the Type B and C tests at the Callaway Plant ensure that the containment penetrations and isolation valves are essentially leak tight. The licensee stated that there are no pressure-retaining bellows used on the containment penetrations. In Section 4.4.2 of its application dated March 20, 2009, the licensee stated that continued satisfactory results from the Type B and Type C LLRTs and containment inspections support

the proposed extension of the Type A test interval. The initial test interval for Type B and Type C tests is 30 months, but may be extended to 120 months for Type B tests and 60 months for Type C tests, based on acceptable performance.

3.2 Evaluation of Projected Risk and Maintenance of Defense-in-Depth Considerations

The licensee has performed a risk impact assessment for extending the Type A test interval from 10 years to 15 years. The assessment was provided in the licensee's application dated March 20, 2009. Additional analysis and information was provided by the licensee in its letter dated January 19, 2010, in response to an NRC e-mail request for additional information (RAI) dated December 15, 2009 (ADAMS Accession No. ML093490797). In performing the risk assessment, the licensee considered the guidelines of NEI 94-01, Revision 2, dated August 2007 (ADAMS Accession No. ML072970206), and the methodology used in the Electric Power Research Institute (EPRI) TR-1009325, Revision 2, "Risk Impact Assessment of Extended Integrated Leak Rate Testing Intervals," dated August 2007 (ADAMS Accession No. ML072970208), with consideration of the NRC's final safety evaluation of EPRI TR-1009325, Revision 2, and NEI 94-01, Revision 2, dated June 25, 2008 (ADAMS Accession No. ML081140105); the methodology used in EPRI TR-104285, "Risk Impact Assessment of Revised Containment Leak Rate Testing Intervals, dated August 1994; the NEI "Interim Guidance for Performing Risk Impact Assessments in Support of One-Time Extensions for Containment Integrated Leakage Rate Surveillance Intervals," dated October 2001 (ADAMS Accession No. ML012990239); the methodology used for Calvert Cliffs Nuclear Power Plant to assess the risk from undetected leaks due to corrosion in a letter from Constellation Nuclear, dated March 27, 2002 (ADAMS Accession No. ML020920100); RG 1.174; and RG 1.200, Revision 1, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," dated January 2007 (ADAMS Accession No. ML070240001).

The basis for the current 10-year test interval is provided in Section 11.0 of NEI 94-01, Revision 0, and was established in 1995 during the development of the performance-based Option B to Appendix J in 10 CFR Part 50. Section 11.0 of NEI 94-01 states that NUREG-1493, "Performance-Based Containment Leak-Test Program," dated September 1995 (ADAMS Legacy Library Accession No. 9510200161), provided the technical basis to revise leakage rate testing requirements contained in Option B to Appendix J. The basis consisted of qualitative and quantitative assessments of the risk impact (in terms of increased public dose) associated with a range of extended leakage rate test intervals. To supplement this basis, industry undertook a similar study. The results of that study are documented in EPRI TR-104285.

The EPRI study used an analytical approach similar to that presented in NUREG-1493 for evaluating the incremental risk associated with increasing the interval for Type A tests. The Appendix J, Option A, requirements that were in effect for Callaway early in the plant's life required a Type A test frequency of three tests in 10 years. The EPRI study estimated that relaxing the test frequency from three tests in 10 years to one test in 10 years would increase the average time that a leak, that was detectable only by a Type A test, goes undetected from 18 to 60 months. Since Type A tests only detect about 3 percent of leaks (the rest are identified during local leak rate tests based on industry leakage rate data gathered from 1987 to 1993), this results in a 10 percent increase in the overall probability of leakage. The risk contribution of pre-existing leakage for the pressurized-water reactor and boiling-water reactor representative

plants in the EPRI study confirmed the NUREG-1493 conclusion that a reduction in the frequency of Type A tests from three tests in 10 years to one test in 20 years leads to an "imperceptible" increase in risk that is on the order of 0.2 percent and a fraction of one person-roentgen equivalent man (rem) expected per year in increased public dose.

The licensee quantified the risk from sequences that have the potential to result in large releases, if a pre-existing leak were present. Since the Option B rulemaking was completed in 1995, the NRC staff has issued RG 1.174 on the use of probabilistic risk assessment (PRA) in evaluating risk-informed changes to a plant's licensing basis. The licensee has used RG 1.174 guidance to assess the acceptability of extending the Type A test interval beyond that established during the Option B rulemaking.

RG 1.174 states that a PRA used in risk-informed regulation should be performed in a manner that is consistent with accepted practices. In Regulatory Issue Summary 2007-06 (RIS 2007-06), "Regulatory Guide 1.200 Implementation," the NRC clarified that for all risk-informed applications received after December 2007, the NRC staff will use RG 1.200, Revision 1, to determine whether the technical adequacy of the PRA used to support a submittal is consistent with accepted practices. Revision 2 of RG 1.200, dated March 2009 (ADAMS Accession No. ML090410014), is to be used for all risk-informed applications received after March 2010. In its final safety evaluation dated June 25, 2008, for NEI 94-01, Revision 2, and EPRI TR-1009325, Revision 2, the NRC staff concluded that Capability Category I of the American Society of Mechanical Engineers (ASME) PRA Standard shall be applied as the standard for assessing PRA quality for ILRT extension applications since approximate values of core damage frequency (CDF) and large early release frequency (LERF) and their contribution among release categories are sufficient to support the evaluation of changes to ILRT frequencies.

In accordance with above noted guidance, the licensee's letters dated March 20, 2009, and January 19, 2010, address the technical adequacy of the PRA which forms the basis for this risk assessment. The current Callaway PRA model contains the Individual Plant Examination, the licensee's calculation packages and Addenda, the Individual Plant Examination of External Events, and the low power and shutdown safety monitor model. In 2002, an industry peer review team published its review of the current PRA with respect to NEI 00-02, "Probabilistic Risk Assessment Peer Review Process Guidance." The majority of the facts and observations (F&Os) from the industry peer review have been resolved. In 2006, the Callaway PRA group performed a gap analysis on the current PRA to evaluate its level of compliance with RG 1.200, and conformance with ASME PRA Standard Capability Category II requirements (including ASME RA-Sb 2005 Addenda). The license amendment request provides summaries of the A and B level F&Os from the 2006 gap analysis and the unresolved F&Os from the 2002 industry peer review, and an assessment of the impact of these open F&Os on the risk assessment for the ILRT extension request. The NRC staff requested additional information on several of the open F&Os, including sensitivity analyses to demonstrate that potential gaps in the PRA model would not affect the conclusions of the ILRT risk assessment, and a schedule for the licensee's resolution of all open F&Os. In its letters dated March 20, 2009, and January 19, 2010, the licensee indicated that the findings were related to documentation or parts of the model that do not affect the ILRT extension evaluation, that the ILRT risk assessment explicitly evaluated the finding (e.g., internal flooding), or that sensitivity analyses demonstrated that potential gaps in the PRA model would not affect the conclusions of the ILRT risk assessment. The licensee

concluded that the changes required to address unresolved findings would have a negligible, if any, impact on the risk assessment. The NRC staff reviewed this information and concluded that the licensee's assessment was acceptable. The licensee evaluated its PRA against RG 1.200 and the ASME PRA Standard, and evaluated all of the findings developed during the reviews of its PRA for applicability to the ILRT extension. The licensee performed sensitivity analyses in response to NRC RAIs, where warranted, and determined that any unresolved issues would not impact the conclusions of the ILRT risk assessment. The licensee expects to resolve all open F&Os (including level C and D findings) by March 2011. The NRC staff concludes that the current Callaway PRA model is of sufficient technical quality to support the evaluation of changes to ILRT frequencies.

RG 1.174 provides risk-acceptance guidelines for assessing the increases in CDF and LERF for risk-informed license amendment requests. Since the Type A test ensures that leakage from containment is within the design basis and it follows an accident, it does not affect CDF which precedes the containment leakage. However, the containment leakage directly affects the calculated LERF and is a relevant factor affecting the calculated LERF. The licensee has estimated the change in LERF for the proposed change based on the cumulative change from the original frequency of three tests in a 10-year interval. RG 1.174 also discusses the key principle of defense in depth. The licensee estimated the change in the conditional containment failure probability for the 5-year extension of ILRT interval and judged it to be insignificant and reflected retention of adequate defense in depth.

The licensee's comparisons of risk are based on a change in test frequency from three tests in 10 years (the test frequency under Appendix J, Option A) to one test in 15 years. This bounds the impact of extending the test frequency from one test in 10 years to one test in 15 years. The NRC staff concludes, based on the licensee's analysis associated with extending the Type A test frequency, that:

1. Given the change from a three in 10-year test frequency to a one in 15-year test frequency, the increase in the total integrated plant risk is estimated to be less than 0.1 person-rem per year. This increase is comparable to that estimated in NUREG-1493, where it was concluded that a reduction in the frequency of tests from three in 10 years to one in 20 years leads to an "imperceptible" increase in risk. Therefore, the NRC concludes the increase in the total integrated plant risk for the proposed change is considered small, supports the proposed change, and is, therefore, acceptable.

2. The increase in LERF resulting from a change in the Type A test frequency from the original three in 10 years to one in 15 years is estimated to be about 4.0×10^{-7} per year based on the plant-specific internal events PRA, and about 8.0×10^{-7} per year when external events are included. There is some likelihood that the flaws in the containment estimated as part of the Class 3b frequency would be detected as part of the IWE/IWL surfaces (as identified in ASME Boiler and Pressure Vessel Code, Section XI, Subsections IWE/IWL) visual examination of the containment. Visual inspections are expected to be effective in detecting large flaws in the visible regions of containment, and this would reduce the impact of the extended test interval on LERF. The licensee's risk analysis considered the potential impact of age-related corrosion/degradation in

inaccessible areas of the containment shell on the proposed change. The licensee provided an estimate of the increase in LERF associated with corrosion events of about 1 x 10^{-8} per year.

Pursuant to RG 1.174, when the calculated increase in LERF is in the range of 10^{-7} per year to 10^{-6} per year, applications are considered if the total LERF is less than 10^{-5} per year. Based on information provided by the licensee, the total LERF for internal and external events, including the requested change, is estimated to be about 2.2 x 10^{-6} per year, which meets the total LERF acceptance criteria. Therefore, the NRC staff concludes that increasing the Type A interval from 10 years to 15 years results in only a small change in LERF, is consistent with the acceptance guidelines of RG 1.174, and is, therefore, acceptable.

3. RG 1.174 also encourages the use of risk analysis techniques to help ensure and show that the proposed change is consistent with the defense-in-depth philosophy. Consistency with the defense-in-depth philosophy is maintained if a reasonable balance is preserved between avoidance of core damage, avoidance of containment failure, and consequence mitigation. The licensee estimates the change in the conditional containment failure probability to increase less than one percentage point for the cumulative change of going from a test frequency of three in 10 years to one in 20 years. The NRC staff concludes that the defense-in-depth philosophy is maintained based on the small magnitude of the change in the conditional containment failure probability for the proposed increase in ILRT interval and is, therefore, acceptable.

Based on the above, the NRC staff determined that the increase in projected risk due to the proposed change is within the acceptance guidelines, while the defense-in-depth philosophy of RG 1.174 is maintained.

3.3 Conclusions

Based on the above, the NRC staff concludes that the licensee has adequately validated the structural and leakage integrity of the containment structure and demonstrated adequate performance of the containment structure to ensure an essentially leak-tight containment barrier, when the ILRT interval is extended once from once in 10 years to once in 15 years. The NRC staff also concludes that the increase in projected risk due to the proposed increase in the ILRT interval is within the acceptance guidelines, while the defense-in-depth philosophy of RG 1.174 is maintained. Therefore, the NRC staff concludes the proposed increase in the ILRT interval from 10 years to 15 years is 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 August 25, 2009 (74 FR 42931). 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 Contributors: D. Hoang
G. Thomas
B. Lee
T. Ghosh

Date: March 17, 2010

March 17, 2010

Mr. Adam C. Heflin
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Chief Nuclear Officer
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Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: REVISION TO TECHNICAL SPECIFICATION 5.5.16, "CONTAINMENT LEAKAGE RATE TESTING PROGRAM" (TAC NO. ME0986)

Dear Mr. Heflin:

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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. 195 to NPF-30
2. Safety Evaluation
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OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	DE/EMCB/BC	DRA/APLA/BC
NAME	MThadani	JBurkhardt JCB via email	MKhanna*	DHarrison
DATE	3/4/10	3/4/10	9/2/09	2/17/10
OFFICE	DSS/SCVB/BC	OGC	NRR/LPL4/BC	NRR/LPL4/PM
NAME	RDennig	DRoth	MMarkley	MThadani
DATE	9/2/09	3/10/10	3/17/10	3/17/10

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