



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

February 24, 2009

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: ONE-TIME
EXTENSION OF COMPLETION TIME FOR TRAIN B OF THE ESSENTIAL
SERVICE WATER SYSTEM PIPING REPLACEMENT AND ALTERNATING
CURRENT (AC) SOURCES - OPERATING (TAC NO. ME0210)

Dear Mr. Heflin:

The U.S. Nuclear Regulatory Commission (the NRC) has issued the enclosed Amendment No. 191 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 Union Electric Company's submittal dated December 1, 2008.

On October 31, 2008, the NRC approved Amendment No. 186 to allow a one-time extension to the Completion Times for both essential service water (ESW) trains and the emergency diesel generators from 72 hours to 14 days. Amendment No. 186 was effective on the date of issuance and approved implementation by December 31, 2008, to permit replacement of ESW piping. The licensee completed the replacement of ESW Train A piping, but deferred the replacement of ESW Train B piping to early 2009. Amendment No. 191 authorizes implementation of the ESW Train B piping prior to April 30, 2009.

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,

A handwritten signature in black ink, appearing to read "Mohan C. Thadani".

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. 191 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. 191
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 1, 2008, 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.

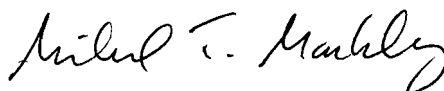
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-30 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan*

The Technical Specifications contained in Appendix A, as revised through Amendment No. 191 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 prior to April 30, 2009.

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: February 24, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 191

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

3.7-22

3.7-22

3.8-4

3.8-4

- (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. 191 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.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ESW train inoperable.	A.1 (continued) Restore ESW train to OPERABLE status.	-----NOTE----- A one-time Completion Time of 14 days is allowed to support planned replacement of ESW 'B' train piping prior to April 30, 2009. ----- 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One DG inoperable. (continued)</p>	<p>B.4 Restore DG to OPERABLE status.</p>	<p>-----NOTE----- A one-time Completion Time of 14 days is allowed to support planned replacement of ESW 'B' train piping prior to April 30, 2009. -----</p> <p>72 hours</p> <p><u>AND</u></p> <p>6 days from discovery of failure to meet LCO</p>
<p>C. Two offsite circuits inoperable.</p>	<p>C.1 ----- NOTE ----- In Modes 1, 2, and 3, the turbine driven auxiliary feedwater pump is considered a required redundant feature. -----</p> <p>Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.</p> <p><u>AND</u></p>	<p>12 hours from discovery of Condition C concurrent with inoperability of redundant required features</p> <p>(continued)</p>



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 191 TO

FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letter dated December 1, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML083440499), the Union Electric Company, licensee for Callaway Plant, Unit 1, requested approval of an amendment to revise the Technical Specifications (TSs) to extend the expiration date of Amendment No. 186 from December 31, 2008, to April 30, 2009. The licensee also proposed certain changes to regulatory commitments that clarified the intent of those commitments.

Amendment No. 186 was approved on October 31, 2008, and approved a one-time extension of the allowed outage time (completion time) for essential service water (ESW) Trains A and B, from 72 hours to 14 days, and a one-time extension of the completion time (CT) for the emergency diesel generators (EDGs) from 72 hours to 14 days. The CT extensions were approved in Amendment No. 186, subject to the licensee's regulatory commitments, to permit replacement of ESW carbon steel piping with high density polyethylene (HDPE) piping. Amendment No. 186 authorized completion of replacement of piping for the two ESW trains by December 31, 2008. The licensee completed the replacement of ESW Train A piping by December 31, 2008, but deferred the replacement of ESW Train B piping to April 30, 2009. In its letter dated December 1, 2008, the licensee informed the NRC that it had experienced significant delays in completing the underground piping for ESW Trains A and B due, in part, to underground obstructions during excavations, a longer refueling outage than anticipated, a forced outage at the beginning Cycle 17, switchyard maintenance, and other equipment and personnel issues. Therefore, the licensee proposed to change the implementation date for the ESW Train B carbon steel piping replacement from December 31, 2008, to April 30, 2009. The proposed revision to the change to completion date would apply when the ESW Train B is inoperable during its piping replacement.

2.0 REGULATORY EVALUATION

In Amendment No. 186, the NRC staff based its acceptance of licensee's request on the following regulatory criteria and guidelines, which continue to apply to the replacement for ESW Train B:

- Section 50.36, "Technical specifications," of Title 10 of the *Code of Federal Regulations* (10 CFR) requires a licensee's TS to establish limiting conditions for operations (LCOs), which include CTs for equipment that are required for safe operation of the facility.
- General Design Criterion (GDC)-17, "Electric power systems," in Appendix A to 10 CFR Part 50, requires, in part, that nuclear power plants have an onsite electric power system and an offsite electric power system to permit the functioning of structures, systems, and components (SSCs) important to safety. The onsite power system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. The offsite power system is required to be supplied by two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of loss of power from the unit, the offsite transmission network, or the onsite power supplies.
- GDC-18, "Inspection and testing of electric power systems," requires that electric power systems that are important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features.
- Requirements of GDC-44, "Cooling Water," GDC-45, "Inspection of Cooling Water System," and GDC-46, "Testing of Cooling Water System," from Appendix A of 10 CFR Part 50 must be met.
- Section 50.65 of 10 CFR, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires that monitoring or preventive maintenance activities must be balanced against the objective of minimizing unavailability of the SSCs.
- Section 50.63 of 10 CFR, "Loss of all alternating current power," requires a nuclear power plant to be able to withstand for a specified duration and recover from a complete loss of offsite and onsite alternating current (AC) sources.
- Regulatory Guide (RG) 1.93, "Availability of Electric Power Sources," provides guidance with respect to operating restrictions or CTs if the number of available AC sources is less than that required by the TS LCO. In particular, this RG prescribes a maximum CT of 72 hours for an inoperable onsite or offsite AC source.

- RG 1.27, "Ultimate Heat Sink for Nuclear Power Plants," provides guidance for the source of service or "house" water supply necessary to safely operate, shut down, and cool down a nuclear plant.
- NUREG-0800, Standard Review Plan (SRP) 9.2.1, "Station Service Water System," provides the NRC staff with guidance to review the system.
- RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," describes a risk-informed approach, acceptable to the NRC, for assessing the nature and impact of proposed permanent licensing-basis changes by considering engineering issues and applying risk insights. This regulatory guide also provides risk-acceptance guidelines for evaluating the results of such evaluations. While not directly applicable to temporary changes, the NRC staff used RG 1.174 for guidance in evaluating the licensee's proposed changes.
- RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," describes an acceptable risk-informed approach specifically for assessing proposed permanent TS changes in allowed outage times. This regulatory guide also provides risk acceptance guidelines for evaluating the results of such assessments. While not directly applicable to temporary changes, the NRC staff used RG 1.177 for guidance in evaluating the licensee's proposed changes.

RG 1.177 identifies a three-tiered approach for the licensee's evaluation of the risk associated with a proposed CT TS change, as discussed below.

- Tier 1 assesses the risk impact of the proposed change in accordance with acceptance guidelines consistent with the Commission's Safety Goal Policy Statement, as documented in RG 1.174 and RG 1.177. The first tier assesses the impact on operational plant risk based on the change in core damage frequency (Δ CDF) and change in large early release frequency (Δ LERF). It also evaluates plant risk while equipment covered by the proposed CT is out-of-service, as represented by incremental conditional core damage probability (ICCDP) and incremental conditional large early release probability (ICLERP). Tier 1 also addresses probabilistic risk assessment (PRA) quality, including the technical adequacy of the licensee's plant-specific PRA for the subject application. Cumulative risk of the proposed TS change in light of past related applications or additional applications under review is also considered along with uncertainty/sensitivity analysis with respect to the assumptions related to the proposed TS change.
- Tier 2 identifies and evaluates any potential risk-significant plant equipment outage configurations that could result if equipment, in addition to that associated with the proposed license amendment, is taken out-of-service simultaneously, or if other risk-significant operational factors, such as concurrent system or equipment testing, are also involved. The

purpose of this evaluation is to ensure that there are appropriate restrictions in place such that risk-significant plant equipment outage configurations will not occur when equipment associated with the proposed CT is implemented.

- Tier 3 addresses the licensee's overall configuration risk management program (CRMP) to ensure that adequate programs and procedures are in place for identifying risk-significant plant configurations resulting from maintenance or other operational activities and appropriate compensatory measures are taken to avoid risk-significant configurations that may not have been considered when the Tier 2 evaluation was performed. Compared with Tier 2, Tier 3 provides additional coverage to ensure risk-significant plant equipment outage configurations are identified in a timely manner and that the risk impact of out-of-service equipment is appropriately evaluated prior to performing any maintenance activity over extended periods of plant operation. Tier 3 guidance can be satisfied by the Maintenance Rule (10 CFR 50.65(a)(4)), which requires a licensee to assess and manage the increase in risk that may result from activities such as surveillance testing and corrective and preventive maintenance, subject to the guidance provided in RG 1.177, Section 2.3.7.1, and the adequacy of the licensee's program and PRA model for this application. The CRMP is to ensure that equipment removed from service prior to or during the proposed extended CT will be appropriately assessed from a risk perspective.

- SRP Chapter 19

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," of the NRC Standard Review Plan (SRP), NUREG-0800. Guidance on evaluating PRA technical adequacy is provided in Section 19.1, "Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities." More specific guidance related to risk-informed TS changes is provided in SRP Section 16.1, "Risk-Informed Decision Making: Technical Specifications," which includes CT changes as part of risk-informed decision making.

Section 19.2 of the SRP states that a risk-informed application should be evaluated to ensure that the proposed changes meet the following key principles:

- The proposed change meets the current regulations, unless it explicitly relates to a requested exemption or rule change.
- The proposed change is consistent with the defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.

- When proposed changes increase core damage frequency or risk, the increase(s) should be small and consistent with the intent of the Commission's Safety Goal Policy Statement.
- The impact of the proposed change should be monitored using performance measurement strategies.
- RG 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," endorses the guidance (in part) of NUMARC 93-01 (Section 11), "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

3.0 TECHNICAL EVALUATION

The Callaway Plant ESW system carbon steel buried piping has developed fouling, pinhole leaks, and other localized degradation due to microbiologically induced corrosion. The licensee proposes to replace the buried ESW carbon steel piping in Train B with buried HDPE piping. The licensee plans to perform this work while the plant is in MODES 1 through 4. The licensee stated that the ESW piping replacement cannot be completed within the current 72-hour CTs allowed under existing TS LCOs, and requested extension of CTs to 14 days. Inoperability of ESW during replacement of the piping would result in loss of ESW water to EDGs. Thus, the replacement of ESW piping would also impact the operability of the EDGs. Therefore, the licensee also requested a one-time extension of CTs for EDGs from 72 hours to 14 days.

The ESW system consists of two separate, 100 percent capacity, safety-related, cooling water trains. Each train consists of a self-cleaning strainer, prelube tank, one 100 percent capacity pump, piping, valves, and instrumentation. The principal safety-related function of the ESW system is the removal of decay heat from the reactor via the component cooling water (CCW) system and removal of containment heat loads via the containment coolers. The ESW system provides cooling water from the ultimate heat sink (cooling tower) for plant components that require cooling for safe shutdown of the reactor following an accident and/or loss-of-offsite power (LOOP). These components are the CCW heat exchangers, containment air coolers, diesel generator coolers, safety injection pump room coolers, residual heat removal pump room coolers, containment spray pump room coolers, centrifugal charging pump room coolers, CCW pump room coolers, auxiliary feedwater pump room coolers, control room air conditioning condensers, Class 1E switchgear air-conditioning condensers, and penetration room coolers. The ESW system provides emergency makeup to the fuel pool and CCW systems. It is also the backup water supply to the auxiliary feedwater system.

3.1 Proposed TS Changes

The licensee has proposed to change the Note in TS 3.7.8, "Essential Service Water (ESW) System." This new Note will allow a one-time CT change from 72 hours to 14 days to be used for the planned replacement of ESW Train B piping prior to April 30, 2009. The new Note would replace the existing Note that was established in Amendment No. 186, and would read as follows:

A one-time Completion Time of 14 days is allowed to support planned replacement of ESW 'B' train piping prior to April 30, 2009.

A second Note in TS 3.8.1 addressing an inoperable diesel generator will be revised to read as:

A one time Completion Time of 14 days is allowed to support planned replacement of ESW 'B' train piping prior to April 30, 2009.

3.2 Staff Evaluation

In Amendment No. 186, the NRC staff performed a detailed evaluation of the licensee's requests for extensions of CT for TS 3.7.8 and TS 3.8.1 for the ESW and EDGs, respectively. The NRC staff's evaluation was based on deterministic and probabilistic perspectives and concluded the following:

- Based on the compensatory measures provided by the licensee, the NRC staff concluded that the deterministic evaluation supported the proposed extension of the CTs for the ESW and EDG system from 72 hours to 14 days.
- Based on the probabilistic evaluation, the NRC staff concluded that the risk impacts as estimated by the licensee are reasonably consistent with the acceptance guidelines of Regulatory guide (RG) 1.174, applicable to permanent changes to the TS, for the proposed one-time change to ESW and EDG TS. The licensee's Tier 2 analysis and regulatory commitments provide reasonable assurance that risk significant plant equipment configurations will not occur when specific plant equipment is taken out-of-service in accordance with the proposed TS change. The licensee's Tier 3 Configuration Risk Management Program (CRMP) was found to be consistent with the RG 1.177 CRMP guidelines.

The NRC staff finds that the safety evaluation for Amendment No. 186 is unaffected by the proposed deferral of completion of the replacement of ESW Train B piping from prior to December 31, 2008, to prior to April 30, 2009. In its December 1, 2008, letter, the licensee stated that, "[t]his amendment request, including the proposed expiration date of April 30, 2009, involve no changes to final risk metrics," and "[t]here are no planned plant changes scheduled to be implemented prior to April 30, 2009 which would significantly impact the Callaway PRA model or risk results." The NRC staff agrees with the licensee's conclusion and concludes that the above two conclusions of Amendment No. 186 will continue to be valid for revised implementation of ESW Train B piping replacement.

Deferral of modification of ESW Train B has impacted the regulatory commitments made in connection with the approval of Amendment No. 186. The licensee states that the change in implementation of ESW piping replacement would require changing the due dates of the Tier 2 commitments approved in Amendment No. 186. The licensee has stated that the proposed changes to the TS will be implemented prior to April 16, 2009. This change is administrative, and is acceptable.

In addition, the licensee has proposed minor changes to commitments 1 and 2, which are shown in the table in Section 3.4 of this safety evaluation, to permit non-intrusive TS

surveillance and preventive maintenance equipment status verifications that do not affect the operability/functionality of PRA modeled equipment. These activities include system operating parameter verifications against specified acceptance criteria. Since these activities do not directly manipulate the equipment or change its operational status, and will only be permitted after an evaluation by the licensee, the NRC staff finds this change to the commitments is acceptable.

The licensee clarified commitment 1 with respect to exclusion of hot work within 20 feet of the protected train. The licensee states that the 20-foot separation was chosen because this is the desirable fire protection program separation distance required for redundant trains, without any intervening combustibles or hazards. This change is consistent with the licensee's fire protection program and is, therefore, acceptable.

3.3 Conclusions of the Technical Evaluation

Based on the above evaluation, the NRC staff concludes that the licensee's proposed changes to the implementation date for replacement of ESW Train B piping and proposed changes to its regulatory commitments are acceptable.

3.4 Regulatory Commitments

The licensee specified regulatory commitments, which were made in support of its submittal dated December 1, 2008. The regulatory commitments are listed in a table below and encompass the changes to compensatory measures as discussed in this safety evaluation. The regulatory commitments are listed in Attachment 5 to the licensee's letter dated December 1, 2008. There are 11 commitments listed in Attachment 5 with the first one being the commitment to implement the amendment prior to April 16, 2009. This is not a commitment with respect to performing the work on the ESW piping and is, therefore, not listed in the following table, "List of Regulatory Commitments Made by the Licensee." Therefore, the 10 regulatory commitments listed in the following table begin with the second commitment submitted in Attachment 5 to the letter dated December 1, 2008.

The due date/event column in the table refers to when the licensee stated that the commitment will be in place and effective after the amendment is approved. This due date is when the administrative controls will be in place at the time the amendment is implemented. This due date and the proposed changes to the regulatory commitments are acceptable to the NRC staff because the amendment has to be implemented before the licensee may use the deferral of implementation of ESW Train B replacement of the underground piping.

The NRC staff reviewed the 10 regulatory commitments in the table on the following pages in the context of the requested amendment and made the following findings.

The proposed amendment is for deferral of implementation date for a one-time extension of the CT to permit replacement of ESW Train B piping and for extension of the CT for an EDG train in operational MODES 1 through 4.

AMENDED LIST OF REGULATORY COMMITMENTS MADE BY THE LICENSEE
ATTACHMENT 5 TO APPLICATION DATED DECEMBER 1, 2008

The following table identifies those actions committed to by the licensee, as a part of the review process for Amendment No. 186. They have been modified by the licensee in this Amendment to reflect application to replacement of ESW Train B and provide further clarifications derived from experience with replacement of ESW Train A piping.

COMMITMENT	Due Date/Event
<p>1. For no more than 48 hours during the 'A' ESW train LCO outage, and no more than 120 hours during the 'B' ESW train LCO outage, normal service water will not be available to the out-of-service ESW train. During these time limits, no PRA-modeled equipment, other than the out-of-service ESW train and supported systems rendered inoperable by that ESW train being out-of-service, will be voluntarily taken out-of-service during the one-time extended Completion Time taken on each train. This applies only to PRA-modeled equipment in the protected ESF [engineered safety feature] train (ESF train not served by the inoperable ESW train) during these time limits that normal service water is unavailable. No work will be allowed on the protected (operable) ESW train. The preceding was credited in the risk metric calculations supporting this license amendment request. No hot work will be allowed in the area of equipment in the protected ESF train (within 20 feet unless there is an intervening barrier) except for yard piping work and work in control building room 3101 where the underground piping enters the control building. Non-intrusive TS surveillances and preventive maintenance equipment status verifications that do not affect equipment operability/functionality will be allowed.</p>	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment.</p>
<p>2. For the rest of the 'A' ESW train and 'B' ESW train LCO outages (the one-time 14-day Completion Times per ESW train minus the time limits noted above), the out-of-service ESW train loads will be cooled by normal service water. Credit has been taken in the risk metric calculations for the ESF equipment serviced by the protected ESW train for the entire 14-day LCO outage on the opposite train (and for normal service water supplying the protected train loads if the protected ESW pump were to fail) and for the ESF equipment that can be serviced by normal service water associated with the out-of-service ESW train for the times note above. None of the PRA-modeled equipment in either train will be voluntarily taken out of service during the time that normal service water is available to supply the out-of-service ESW train loads. Non-intrusive TS surveillances and preventive maintenance equipment status verifications that do not affect equipment operability/functionality will be allowed. This commitment applies as long as the one-time 14-day Completion Time extension of TS 3.7.8 Condition A and TS 3.8.1 Condition B is in use; this commitment expires when these TS Conditions are exited.</p>	

COMMITMENT	Due Date/Event
<p>3. Access to the switchyard will be limited to personnel with a demonstrable need (operator and security guard rounds involving no equipment manipulation and staff associated with performing the 8-hour readiness checks on the temporary DGs) and no pre-planned work or testing or preventive maintenance will be allowed in the switchyard, or other areas of the plant, that could cause a loss of offsite power (LOOP) event during the one-time 14-day extended Completion Time. Credit was taken for this commitment in the risk metric calculations supporting this license amendment request. The only other access to the switchyard that would be considered would be for corrective maintenance that would address an emergent condition before it led to a LOOP event.</p>	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment.</p>
<p>4. The one-time 14-day extended Completion Time will not be entered if, prior to entry, inclement weather conditions are forecasted, i.e., work under the extended Completion Time will not be started if Severe Weather as defined in OTO-ZZ-00012 is forecasted to occur within 140 miles of the plant. National Weather Service reports will be monitored prior to and throughout each ESW train LCO outage.</p>	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment</p>
<p>5. From EDP-ZZ-01129 Appendix 2 for a DG or ESW outage and TS 3.7.5, the following Tier 2 commitments are also added to the scope of this amendment request:</p> <ul style="list-style-type: none"> • The turbine-driven auxiliary feedwater pump (TDAFP) will remain Operable. If the TDAFP were to become inoperable during the 14-day LCO outage, TS 3.7.5 Condition D would require a plant shutdown to MODE 3 within 6 hours and to MODE 4 within 12 hours since one MDAFW train is already inoperable at the beginning of the LCO outage. • The TDAFP pump room and associated valve rooms will be posted as restricted access. • The protected train motor-driven auxiliary feedwater pump (MDAFP) pump room and associated valve rooms will be posted as restricted access. • The condensate storage tank (CST) will be posted as restricted access. • No work will be allowed on the Security Diesel. 	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment</p>

COMMITMENT	Due Date/Event
<p>6. For the time limits (14 days minus 48 hours on ESW train 'A' and 14 days minus 120 hours on ESW train 'B') noted above in commitment 2, the piping tie-in (new underground PE ESW piping to the rest of the system) will be performed with the normal service water system cooling the out-of-service ESW train heat loads. During the portion of the extended Completion Time that normal service water is supplying the ESW loads, the normal service water to ESW supply and return cross-connect valves will be opened and power removed from the operators. Credit was taken for the preceding in the risk metric calculations supporting this license amendment request. The ESW return to UHS valves will be closed and power removed from the operators during this portion of the extended 14-day Completion Time as well.</p>	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment.</p>
<p>7. Prior to entering the extended 14-day ESW Completion Times, the Operations department will verify the availability of fire protection equipment per Callaway procedure APA-ZZ-00703 (operability requirements spelled out in FSAR Section 9.5.1.7 and Table 9.5.1-2 will apply throughout the 14-day LCO outage subject to the Applicable Modes column of Table 9.5.1-2) and flood mitigation (drains, watertight doors) equipment to assure that important plant design features, for mitigation of fires or floods that could impact the protected train, are available. In addition, prior to entering the extended ESW CTs, a walkdown of the above ground portion of the protected ESW train will be performed for transient combustibles, except for the portion of the protected train inside containment or otherwise excluded by the Radiation Protection department. Removal of any transient combustibles, pursuant to this walkdown, was credited in the fire risk quantification performed to support this license amendment request. This walkdown will also address the seismic interaction commitments made in response to RAI [Request for Additional Information] 3.(a) in ULNRC-05500. The 14-day LCO outage on each ESW train will not proceed until all transient combustibles that could affect the protected ESW train and the ESF equipment it serves are removed, watertight doors protecting ESF equipment associated with the protected ESW train are verified to be closed and functional, drains in rooms serving ESF equipment associated with the protected ESW train are verified to be unobstructed, and fire detection and suppression equipment in fire areas associated with the protected ESW train are verified to be available.</p>	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment.</p>

COMMITMENT	Due Date/Event
<p>8. Continuous, one-hour, and eight-hour fire and flood watches will be instituted on the protected ESW train as discussed in the response to RAI s 3.b and 3.c in ULNRC-05500. The NCP [normal charging pump] will remain functional and its room will be posted as restricted access. The preceding commitments were credited in the fire and flooding risk metric quantifications performed to support this license amendment request. If the NCP were to become non-functional during the 14-day LCO outage such that the pump becomes unable to provide the required RCP [reactor coolant pump] seal cooling, administrative controls will require a plant shutdown to MODE 3 within 6 hours and to MODE 4 within 12 hours.</p>	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment.</p>
<p>9. Appropriate training will be provided to operations personnel on this TS change and the associated ESW modification, as well as the compensatory measures to be implemented during the one-time extended Completion Time. This training will identify the dominant internal events, fire and internal flooding core damage scenarios, associated with the plant configuration during the extended ESW Completion Time, and include a discussion of mitigation strategies for these scenarios.</p>	<p>Administrative controls in place at time amendment is implemented. This is a Tier 2 commitment.</p>
<p>10. A temporary alternate power source consisting of diesel generators, with combined capacity equal to or greater than the capacity of either one of the installed emergency DGs, will be available as a backup power source. This temporary alternate AC source could power protected train loads in the unlikely event a loss of offsite power event occurred and the protected train's DG failed to start and run. Prior to entering the extended 14-day CT on each ESW train, these temporary diesel generators will be load tested to provide a load equal to the continuous rating of the inoperable DG. After entering the extended ESW CT on each train, this source will be verified available every 8 hours and treated as protected equipment. This temporary alternate power source is credited in the internal events risk metric calculations performed to support this license amendment request.</p>	<p>Equipment and administrative controls in place at time amendment is implemented. This is a Tier 2 commitment.</p>

The NRC staff finds that the above commitments are the same as were accepted in Amendment No. 186, with clarification that they apply to replacement of ESW Train B, instead of ESW Train A and Train B. Also, clarifications in commitments 1 and 2 are for clarification based on the experience with replacement of ESW Train A piping under Amendment No. 186.

Based on the above findings, the NRC staff concludes that the commitments do not warrant the creation of regulatory requirements which would require prior NRC approval of subsequent changes. The NRC staff has agreed that NEI 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," provides reasonable guidance for the control of regulatory commitments made to the NRC staff. See Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," dated September 21, 2000. The NRC staff may choose to verify the implementation and maintenance of these commitments in a future inspection or audit.

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 December 23, 2008 (73 FR 78858). 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: M. Thadani

Date: February 24, 2009

February 24, 2009

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: ONE-TIME EXTENSION OF COMPLETION TIME FOR TRAIN B OF THE ESSENTIAL SERVICE WATER SYSTEM PIPING REPLACEMENT AND ALTERNATING CURRENT (AC) SOURCES - OPERATING (TAC NO. ME0210)

Dear Mr. Heflin:

The U.S. Nuclear Regulatory Commission (the NRC) has issued the enclosed Amendment No. 191 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 Union Electric Company's submittal dated December 1, 2008.

On October 31, 2008, the NRC approved Amendment No. 186 to allow a one-time extension to the Completion Times for both essential service water (ESW) trains and the emergency diesel generators from 72 hours to 14 days. Amendment No. 186 was effective on the date of issuance and approved implementation by December 31, 2008, to permit replacement of ESW piping. The licensee completed the replacement of ESW Train A piping, but deferred the replacement of ESW Train B piping to early 2009. Amendment No. 191 authorizes implementation of the ESW Train B piping prior to April 30, 2009.

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. 191 to NPF-30
2. Safety Evaluation

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(*) SE Input.

G. Mathuru, NRR/DE/EEEB

M. McConnell, NRR/DE/EEEB

A. Howe, NRR/DRA/APLA

R. Young, NRR/DSS/SBPB

(**) See previous concurrence

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