May 31, 2005

Mr. Charles D. Naslund
Senior Vice President and Chief Nuclear Officer
Union Electric Company
Post Office Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: REVISION TO TECHNICAL SPECIFICATION 3.7.3, "MAIN FEEDWATER ISOLATION VALVES," TO ADD MAIN FEEDWATER REGULATING VALVES AND MFRV BYPASS VALVES AND TO EXTEND THE ALLOWED OUTAGE TIME (TAC NO. MC5059)

Dear Mr. Naslund:

The Commission has issued the enclosed Amendment No. 167 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 October 27, 2004.

The amendment revises TS 3.7.3, to adopt the NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 3. The requirements add operability and suitable surveillance requirements for main feedwater regulating valves (MFRV) and MFRV bypass valves (MFRVBV), and allow for an extended out-of-service time for one or more main feedwater isolation valves (MFIVs).

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/

Brian Benney, 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. 167 to NPF-30
2. Safety Evaluation

cc w/encl: See next page

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UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 167
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 October 27, 2004, 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. 167 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 entry into Mode 3 during the restart from the upcoming Refueling Outage 14 (fall 2005).

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, 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: May 31, 2005

ATTACHMENT TO LICENSE AMENDMENT NO. 167

RENEWED FACILITY OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Replace the following pages of the 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.

REMOVE	INSERT
3.7-7	3.7-7
3.7-8	3.7-8

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 167 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By application dated October 27, 2004, Union Electric Company (UE/the licensee) requested changes to the Technical Specifications (TS) for the Callaway Plant (Callaway). The proposed changes would revise TS 3.7.3, to adopt the NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 3. The requirements of the proposed TS 3.7.3 would add operability and suitable surveillance requirements for main feedwater regulating valves (MFRV) and MFRV bypass valves (MFRVBV), and would allow for an extended out-of-service time for one or more main feedwater isolation valves (MFIVs). The application is available in the Agencywide Documents Access and Management System under Accession No. ML043140397.

2.0 REGULATORY EVALUATION

Callaway generates steam via four steam generators (SGs) which are supplied with feedwater. Each of the four SG feedwater lines contains a MFIV and a MFRV in series. Each MFRV has an associated bypass valve in parallel with it.

The MFIVs are 14-inch gate valves with system-medium actuators. Their function is to isolate main feedwater flow to the secondary side of the SGs following a high energy line break and credit is taken in the accident analysis for the MFIV to close on demand. The MFRVs are air-operated angle valves that modulate feedwater flow between approximately 20 percent and full power. The MFRVBVs are air-operated globe valves used to control flow to the SG up to approximately 25 percent power. The safety function of the MFRV and its associated bypass valve is credited in the accident analysis to provide a backup to the MFIVs for the potential failure of the MFIV to close.

Closure of the MFIVs or the MFRVs and associated bypass valves terminates flow to the SGs, thus terminating the feedwater line break (FLB) event occurring upstream of the MFIVs or MFRVs. The consequences of events occurring in the main steam lines or in the main feedwater lines downstream from the MFIVs will be also mitigated by their closure. Closure of the MFIVs or MFRVs and MFRVBVs effectively terminates the addition of feedwater to an affected steam generator, thereby limiting the mass and energy release for steam line breaks (SLBs) or FLBs inside containment and reducing the cooldown effects of SLBs.

The configuration of the MFRVs, MFRVBVs, and MFIVs is shown on Figure 10.4-6 in the Callaway Plant Updated Final Safety Analysis Report.

The MFIV is credited in the safety analysis for isolation in the event of a FLB inside the containment. In addition, closure of the MFIV limits the addition of feedwater to a SG in the event of a SLB. Technical Specification 3.7.3 requires the allowable outage time (AOT) for the MFIVs to be 4 hours.

During the Callaway TS conversion to the NUREG-1431 Standard Technical Specification (STS) format, the licensee evaluated the STS version of TS 3.7.3 to determine whether it should be adopted. The MFRVs and MFRVBVs were not incorporated into TS 3.7.3 because the MFIVs are assumed to operate properly and because the functions performed by the MFRVs and MFRVBVs are considered backup and diverse functions to the MFIVs. In preparation for the steam generator replacement modification and associated accident analyses, the licensee identified the need to adopt the STS version of TS 3.7.3 and thereby requested Commission approval to incorporate the MFRVs and MFRVBVs into TS 3.7.3 and to extend the AOT for the MFIVs from 4 hours to 72 hours.

3.0 TECHNICAL EVALUATION

The licensee's proposed change to the TS adds the MFRVs and associated MFRVBVs to the specification, taking credit for the ability of the MFRVs and the associated bypass valves for the safety function of the MFIVs (closure on isolation signals). The MFIVs or the MFRVs and MFRVBVs close on receipt of any safety injection signal, a Tavg-Low coincident with reactor trip (P-4), a low-low SG level, or a SG water level - high-high signal. The MFIVs may also be actuated manually. Credit is taken in the accident analysis for the MFIVs to close on demand.

While the MFRVs and MFRVBVs are not safety-grade equipment, they are a highly reliable backup and close on the same isolation signals that closes the MFIVs; they are also tested to the same standards (frequency and closure time) as the MFIVs. In the unlikely event that a mechanical failure prevented the primary isolation valves from fully closing, the MFRVs and MFRVBVs are fully capable of mitigating the design-basis events.

The difference between the MFRVs and MFIVs is that the MFRVs are not fully seismically qualified or missile protected. However, because an earthquake is not assumed to occur coincidently with a spontaneous break of safety-related secondary piping, loss of the non-safety grade MFRVs and MFRVBVs is not assumed. If the single active failure postulated for a secondary pipe break is the failure of a safety grade MFIV to close, then credit is taken for non-safety grade MFRVs and MFRVBVs closing.

This is supported by NUREG-0138, "Staff Discussion on Fifteen Technical Issues Listed in Attachment to November 3, 1976 Memorandum From Director, NRR to NRC Staff." It states the following:

> Consistent with the lesser safety importance of the secondary system boundary, staff does not require that an earthquake be assumed to occur coincident[ly] with a postulated spontaneous break of the steamline piping; i.e., loss of equipment not designed to withstand a SSE [Safe Shutdown Earthquake] is not assumed coincident with an assumed spontaneous steamline break accident.

> Continued reliability of these components over the life of the plant is assured by frequency (generally weekly) [of] in-service tests....Thus, the staff believes that it is acceptable to rely on these non-safety grade components in the steam and feedwater systems because their design and performance are compatible with the accident conditions for which they are called upon to function. It is the staff position that utilization of these components as a backup to a single failure in safety grade components adequately protects the health and safety of the public.

Therefore, the MFRVs and the associated bypass valves can be considered fully capable of reliably mitigating these design-basis events.

The proposed revision to the TS is adopted from NUREG-1431, STS 3.7.3.

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 (69 FR 70722; published on December 7, 2004). 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: J. Hernandez

Date: May 31, 2005