

May 2, 2002

Mr. Garry L. Randolph
Vice President and Chief Nuclear Officer
Union Electric Company
Post Office Box 620
Fulton, MO 65251

SUBJECT: Callahan PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: REACTOR PUMP
SEAL INJECTION FLOW (TAC NO. MB3744)

Dear Mr. Randolph:

The Commission has issued the enclosed Amendment No. 150 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 13, 2001 (ULNRC-04583), as supplemented by letter dated April 8, 2002 (ULNRC-04635).

The amendment revises Limiting Condition for Operation (LCO) 3.5.5, Required Action A.1 for the LCO, and Surveillance Requirement 3.5.5.1 in TS 3.5.5, "Seal Injection Flow." The revision replaces the flow and differential pressure limits that were stated for the reactor coolant pump seal injection flow by limits provided in Figure 3.5.5-1, which has been added to the TSs.

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/

Jack Donohew, Senior 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. 150 to NPF-30
2. Safety Evaluation

cc w/encls: 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. 150
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 13, 2001, as supplemented by letter dated April 8, 2002, 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. 150 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 entering Mode 3 ascending during the restart from Refueling Outage 12, which is scheduled for the Fall of 2002, subject to the note above Surveillance Requirement 3.5.5.1.

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: May 2, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 150

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 vertical lines indicating the areas of change.

REMOVE

3.5-10

3.5-11

INSERT

3.5-10

3.5-11

3.5-12

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 150 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 13, 2001, as supplemented by letter dated April 8, 2002, Union Electric Company (the licensee) requested changes to the Technical Specifications (TSs, Appendix A to Facility Operating License No. NPF-30) for the Callaway Plant, Unit 1 (Callaway). The proposed amendment would revise Limiting Condition for Operation (LCO) 3.5.5, Required Action A.1 for the LCO, and Surveillance Requirement 3.5.5.1 in Technical Specification (TS) 3.5.5, "Seal Injection Flow." The revision would replace the flow and differential pressure limits stated for the reactor coolant pump (RCP) seal injection flow in TS 3.5.5 by limits in Figure 3.5.5-1 that would be added to TS 3.5.5.

The additional information in the supplemental letter of April 8, 2002, does not expand the scope of the application as noticed, clarifies the proposed changes given in the application, and does not change the staff's original proposed no significant hazards consideration determination published in the *Federal Register* on February 5, 2002 (67 FR 5341).

2.0 EVALUATION

Seal injection flow to the four RCPs is provided by the two safety-related centrifugal charging pumps (CCPs) from the charging header through the seal injection flow path, which is composed of piping and valves, including the charging pump header and the seal injection throttle valves. The CCPs provide high pressure water to the charging header, which is for safety injection into the reactor coolant system (RCS) and the RCP seal injection flow. The seal injection flow is to protect the integrity of the RCP seals and prevent the seal from becoming a break in the RCS. The seal injection flow is an assumption in the loss-of-coolant accident (LOCA) analyses because it is CCP water that is assumed not to enter the RCS and provide water makeup to the RCS in a LOCA.

The charging flow control valve controls the difference in pressure between the RCS and the charging header. The manual seal injection throttle valves in TS 3.5.5 are adjusted to vary the seal injection flow from the charging header to the RCP seals. The seal injection flow limit is met by adjusting the throttle valves which change the seal flow line resistance from the header to the RCP seals for the pressure difference between the RCS and the header.

The current requirements for the RCP seal injection flow specify that the flow to each pump shall be 7.5 ± 0.5 gpm with a 105 (+5, -2) psi differential pressure between the charging header and the RCS pressure. The intent of TS 3.5.5 is to control the seal flow line resistance by properly positioning the throttle valves.

The licensee stated that due to errors in the documentation for License Amendment No. 68, on the maximum and minimum emergency core cooling system (ECCS) flow rates during accidents, which was issued by NRC letter dated March 24, 1992, new seal injection line resistance criteria are required. The errors affect only the seal injection line resistance which determines the seal injection flow for the pressure differential pressure between the charging pump header and the RCS. The errors have the non-conservative effect of increasing the seal injection flow which is not credited for core cooling.

To correct the non-conservative effect of the errors, the licensee has proposed Figure 3.5.5-1 which provides the acceptable region of total seal injection line flow to the four RCPs for a given charging header/RCS differential pressure. The licensee stated that the proposed figure meets the LOCA safety analysis for the maximum flow to the RCP seals, minimum ECCS flow, and avoidance of CCP runout conditions during the LOCA.

The current requirement in TS 3.5.5 and the proposed Figure 3.5.5-1 are equivalent methods to specify the acceptance criteria for RCP seal injection flow. Both specify an acceptance area of seal injection flow for given pressure differential between the charging pump header and the RCS. The licensee stated that specifying a figure for acceptable total injection flow will facilitate the performance of the surveillance test required by SR 3.5.5.1. This is because the proposed figure provides a larger region of acceptable seal injection flow for charging pump header/RCS differential pressures.

Based on the proposed Figure 3.5.5-1 correcting errors in the previous analysis of the seal injection line resistance and meeting the LOCA safety analysis for the maximum flow to the RCP seals, minimum ECCS flow, and avoidance of CCP runout conditions during the LOCA, the staff concludes that the proposed Figure 3.5.5-1 is acceptable for specifying the acceptable limits for the RCP seal injection flow, and the licensee's proposed change to LCO 3.5.5 to replace the current acceptance criteria by TS 3.5.5-1 is acceptable.

With the proposed TS Figure 3.5.5-1 specifying the limits on the seal injection flow, the reference to the current acceptance criteria for seal injection flow in Required Action A.1 and SR 3.5.5.1 must also be replaced by a reference to the proposed TS Figure 3.5.5-1. Therefore, the staff also concludes that the licensee's proposed changes to replace the current seal injection flow criteria in Required Action A.1 and SR 3.5.5.1 are acceptable.

In its supplemental letter, the licensee stated that they and their vendor Westinghouse, have reload design processes in place to assure that (1) the input values for the LOCA analysis that are sensitive for peak cladding temperature bound the as-operated plant values, and (2) the uncertainties in the parameters are accounted for. Therefore, based on this and the above evaluation, the staff concludes that the proposed amendment to TS 3.5.5 is acceptable.

The staff has also reviewed the licensee's changes to the Bases of TS 3.5.5 and to the Final Safety Analysis Report for Callaway that were provided in Attachments 4 and 5 of the application for information purposes. The staff has no disagreement with the changes to these documents.

The licensee stated in its application that the amendment will be implemented during the restart from Refueling Outage 12 which is scheduled for the Fall of 2002. Because LCO 3.5.5 is applicable in Modes 1 through 3, the amendment should be implemented before entry into Mode 3; however, the Note for SR 3.5.5.1 states that the surveillance is "Not required to be performed until 4 hours after the Reactor Coolant System pressure stabilizes at > 2215 psig and ≤ 2255 psig." This condition will occur during the restart of the plant, but may happen after entry into Mode 3. Based on the Note for SR 3.5.5.1, the amendment must be implemented before the 4 hours after the RCS pressure stabilizes at > 2215 psig and ≤ 2255 psig during the restart from Refueling Outage 12. (i.e., the amendment must be implemented before SR 3.5.5.1 is required to be performed during the restart from the outage).

3.0 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.

4.0 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 and changes a surveillance requirement. 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 (67 FR 5341). 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.

5.0 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: Jack Donohew

Date: May 2, 2002

Callaway Plant, Unit 1

cc:

Professional Nuclear
Consulting, Inc.
19041 Raines Drive
Derwood, MD 20855

John O'Neill, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, D.C. 20037

Mr. Mark A. Reidmeyer, Regional
Regulatory Affairs Supervisor
Regulatory Affairs
AmerenUE
Post Office Box 620
Fulton, MO 65251

U.S. Nuclear Regulatory Commission
Resident Inspector Office
8201 NRC Road
Steedman, MO 65077-1302

Mr. J. V. Laux, Manager
Quality Assurance
AmerenUE
Post Office Box 620
Fulton, MO 65251

Manager - Electric Department
Missouri Public Service Commission
301 W. High
Post Office Box 360
Jefferson City, MO 65102

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
Harris Tower & Pavilion
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

Mr. Ronald A. Kucera, Deputy Director
for Public Policy
Department of Natural Resources
205 Jefferson Street
Jefferson City, MO 65101

Mr. Otto L. Maynard
President and Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
Post Office Box 411
Burlington, KA 66839

Mr. Dan I. Bolef, President
Kay Drey, Representative
Board of Directors Coalition
for the Environment
6267 Delmar Boulevard
University City, MO 63130

Mr. Lee Fritz
Presiding Commissioner
Callaway County Court House
10 East Fifth Street
Fulton, MO 65151

Mr. David E. Shafer
Superintendent Licensing
Regulatory Affairs
AmerenUE
Post Office Box 66149, MC 470
St. Louis, MO 63166-6149

Mr. John D. Blosser, Manager
Regulatory Affairs
AmerenUE
P.O. Box 620
Fulton, MO 65251

Mr. Gary McNutt, Director
Section for Environmental Public Health
P. O. Box 570
Jefferson City, Missouri 65102-0570