

December 16, 1992

Docket No. 50-483

Mr. Donald F. Schnell
Senior Vice President - Nuclear
Union Electric Company
Post Office Box 149
St. Louis, Missouri 63166

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Dear Mr. Schnell:

SUBJECT: AMENDMENT NO. 74 TO FACILITY OPERATING LICENSE NO. NPF-30
(TAC NO. M83008)

The Commission has issued the enclosed Amendment No.74 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1. This amendment revises the Technical Specifications (TS) in response to your application dated December 20, 1991, as clarified by letter dated October 30, 1992.

The amendment revises Technical Specification Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip Setpoint," Functional Unit 8.b, to revise the trip setpoint, the allowable value, total allowance, sensor error, and "Z" value for the "4 kV Undervoltage-Grid Degraded Voltage" protection function to agree with the required design values.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

ORIGINAL SIGNED BY:

L. Raynard Wharton, Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:

1. Amendment No.74 to License No. NPF-30
2. Safety Evaluation

cc: See next page

LA/PD33	PM/PD33	PD/PD33	OGC <i>dc</i>
PKreutzer	RWharton	JHannon	
<i>11/25/92</i>	<i>11/25/92</i>	<i>12/1/92</i>	<i>12/7/92</i>

OFFICIAL RECORD

DOCUMENT NAME: CAL83008.AMD

250030

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PDR ADOCK 05000483
P PDR

DFE

Mr. D. F. Schnell
Union Electric Company

Callaway Plant
Unit No. 1

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

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 74
License No. NPF-30

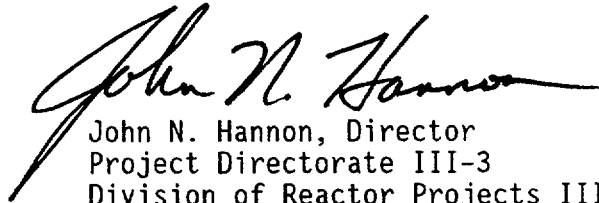
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by Union Electric Company (UE, the licensee) dated December 20, 1991, as clarified by letter dated October 30, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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. 74 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into the license. UE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance. The Technical Specifications are to be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of issuance: December 16, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 74

OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Revise Appendix A Technical Specifications by removing the page identified below and inserting the enclosed page. The revised page is identified by the captioned amendment number and contains marginal lines indicating the area of change. The corresponding overleaf page is provided to maintain document completeness.

REMOVE

3/4 3-27

INSERT

3/4 3-27

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TOTAL ALLOWANCE (TA)</u>	<u>Z</u>	<u>SENSOR ERROR (S)</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
8. Loss of Power (Continued)					
b. 4 kV Undervoltage -Grid Degraded Voltage	0.78	0.53	0	107.47 V (120V Bus) w/119s delay	107.47 + 0.38 V (120V Bus) w/119 ± 11.6s delay
9. Control Room Isolation					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	N.A.
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	N.A.
d. Phase "A" Isolation	See Item 3.a. above for all Phase "A" Isolation Trip Setpoints and Allowable Values.				
10. Solid-State Load Sequencer	N.A.	N.A.	N.A.	N.A.	N.A.
11. Engineered Safety Features Actuation System Interlocks					
a. Pressurizer Pressure, P-11	N.A.	N.A.	N.A.	≤ 1970 psig	≤ 1981 psig
b. Reactor Trip, P-4	N.A.	N.A.	N.A.	N.A.	N.A.

TABLE 3.3-4 (Continued)

TABLE NOTATIONS

*Time constants utilized in the lead-lag controller for Steam Pressure-Low are $\tau_1 \geq 50$ seconds and $\tau_2 \leq 5$ seconds. CHANNEL CALIBRATION shall ensure that these time constants are adjusted to these values.

**The time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate-High is greater than or equal to 50 seconds. CHANNEL CALIBRATION shall ensure that this time constant is adjusted to this value.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 74 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 20, 1991, the Union Electric Company proposed that Facility Operating License, No. NPF-30, be amended to modify the Callaway Technical Specification (TS) Table 3.3-4, Engineered Safety Features Actuation System Instrumentation Trip Setpoints. Based on this submittal the staff requested clarification to complete the review. The licensee provided the clarifying information by letter dated October 30, 1992. The clarifying information did not affect the staff's proposed no significant hazards consideration determination. The staff has reviewed the licensee's submittal and clarifying information and provides the following evaluation.

2.0 EVALUATION

The proposed change to Technical Specification Table 3.3-4, Functional Unit 8.b, revises the trip setpoint for the "4 kV Undervoltage-Grid Degraded Voltage" protection to be consistent with the required values. The degraded voltage protection function assures that all safety-related components have adequate voltage to operate under sustained degraded voltage conditions. If the sensed voltage on a safety-related Class 1E 4.16 kv AC bus is less than the setpoint, then (after a time delay) the offsite AC supply is removed and the emergency diesel generator is aligned to provide adequate voltage to the equipment. In addition, an upper limit on the degraded bus voltage setpoint prevents inadvertent shedding of the busses and starting of the emergency diesel generators to supply the load.

The basis for the degraded voltage setpoints was the minimum voltage at 4160 volt buses (NB01 and NB02) which would provide 92% of nominal motor rated voltage on critical motor control centers. The load flow calculation indicated that, in order to meet those load center voltages, the required voltages at NB01 and NB02 had to be 3656 volts. From this value the degraded voltage relay setpoint was calculated to be 104.5 volts based on the potential transformer turns ratio.

In the 1984-1985 time frame, calculations were revised to address concerns about overvoltages during plant outages and demonstrated that the optimal tap settings involved tap setting changes at the 480 volt load center level, rather than at the 4160 level, as previously anticipated. Load flow studies

suggested that, with the revised tap settings at the 480 volt load center and design minimum switchyard voltage, adequate voltage would be maintained at the 480 volt buses. However, the load flow results also indicated that the voltage on the 4160 volt buses NB01 and NB02, which were necessary to support the 480 volt system, had increased to 3704 volts from 3656 volts due to the change in the tap settings. The degraded voltage setpoint calculation should have been revised to reflect this higher value in the 4160 bus voltage.

In early 1991, Union Electric Company conducted an Electrical Distribution System Functional Assessment (EDSFA) of the Callaway Nuclear Plant (Callaway). During the EDSFA, Union Electric discovered that the degraded grid setpoints had not been revised, as a result of the revised calculations performed in the 1984-1985 time frame. The root cause analysis performed for the degraded grid setpoints discrepancy involved an extensive review of Callaway electrical system design calculation and microfilm records, and discussions with those Bechtel engineers involved with the subject calculation. While it could not be conclusively established why the setpoints were not revised, it appears that the need to update the degraded grid setpoint calculation was overlooked when the tap settings changes occurred from 1984 to 1985. Although the setpoints were not changed, the licensee did develop a basis to show that all components providing a safety function would have been operable regardless of changing the degraded voltage setpoints.

The proposed changes to the setpoints are required to comply with BTP PSB-1 and were re-calculated by the original Architect-Engineer of the Callaway Plant using load data provided by Union Electric. The safety-related Class 1E distribution system is modelled from the 4.16 KV AC buses to the 480 volt motor control centers. The voltage at the 4.16 KV bus is lowered until any one motor control center reaches its low voltage limit to adequately power required components. These values were determined to be 3720 volts for NB01 and 3716 for NB02. The increase in voltage on these buses from the 1984-1985 value of 3704 was due to making refinements to the original load flow calculation. The new load flow calculation used actual manufacturer equipment data instead of estimated values. These values of voltages on the 4.16 KV buses correspond to a new degraded voltage setpoint value of 107.47 Vac at the relay.

The revised degraded voltage setpoints are based on a new load flow analysis consistent with BTP-PSB-1. The setpoint tolerances are in accordance with ISA Standard 67.04-1982, "Setpoint for Nuclear Safety-Related Instrumentation used in Nuclear Power Plants," as endorsed by Regulatory Guide 1.105 and identified in Information Notice 91-29, "Deficiencies Identified during Electrical Distribution System Functional Inspection," dated April 15, 1991. Therefore, these proposed changes to the Callaway Technical Specifications are acceptable.

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

This amendment involves a change to 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 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding (57 FR 18179). Accordingly, this 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 this amendment.

5.0 CONCLUSION

The staff 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: M. Pratt

Date: December 16, 1992