



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

April 3, 1987

Docket No.: 50-483

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

Dear Mr. Schnell:

Subject: Callaway Plant, Unit 1 - Amendment No. 19 to Facility Operating License NPF-30

The Commission has issued the enclosed Amendment No. 19 to Facility Operating License NPF-30 for the Callaway Plant, Unit 1. The amendment consists of a change to the Technical Specifications in response to your application dated January 9, 1986.

The amendment changes the Technical Specifications to require 48 hour restoration in the event of loss of one of the diverse reactor trip features (undervoltage or shunt trip attachment), independent verification of the operability of the undervoltage and shunt trip attachments, and independent testing of the control room manual reactor trip switch contacts during each refueling outage. The amendment is effective as of its date of issuance.

In the enclosed Safety Evaluation Report the NRC staff has suggested that your proposed Insert B be appended to Table Notation (11) rather than to Table Notation (7). This would apply the additional testing to the reactor trip breaker only, as was requested by the staff in Generic Letter 83-28, and would have satisfied the staff's requirements. You have considered our suggestion and have indicated that you do not wish to modify your proposal in that manner. Your change is acceptable to the staff as proposed.

This amendment reflects your response to a portion of those changes specified in Generic Letter 85-09. However, you have not included a Technical Specification change to incorporate functional testing of bypass breakers prior to placing them in operation. The staff finds your position with regard to bypass breakers unacceptable and again requests that you propose changes to the Callaway Technical Specification to provide for bypass breaker testing consistent with the staff position stated in Generic Letter 85-09.

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Mr. D. F. Schnell

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A copy of the related Safety Evaluation is enclosed. Notice of issuance will be included in the Commission's next regular bi-weekly Federal Register Notice.

Sincerely,

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Paul O'Connor, Project Manager  
PWR Project Directorate #4  
Division of PWR Licensing-A

Enclosures:

1. Amendment No. 19 to  
License No. NPF-30
2. Safety Evaluation Report

cc w/enclosures:  
See next page

*PWOC*  
PWR#4/DPWR-A  
PO'Connor/mac  
02/20/87

*[Signature]*  
PWR#4/DPWR-A  
MDuncan  
02/19/87

*[Signature]*  
PWR#4/DPWR-A  
BJYoung/Good  
04/2/87

Mr. D. F. Schnell  
Union Electric Company

Callaway Plant  
Unit No. 1

cc:

Mr. Nicholas A. Petrick  
Executive Director - SNUPPS  
5 Choke Cherry Road  
Rockville, Maryland 20850

Lewis C. Green, Esq.  
Green, Hennings & Henry  
Attorney for Joint Intervenors  
314 N. Broadway, Suite 1830  
St. Louis, Missouri 65251

Gerald Charnoff, Esq.  
Thomas A. Baxter, Esq.  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, N. W.  
Washington, D. C. 20037

Ms. Marjorie Reilly  
Energy Chairman of the League of  
Women Voters of Univ. City, MO  
7065 Pershing Avenue  
University City, Missouri 63130

Mr. J. E. Birk  
Assistant to the General Counsel  
Union Electric Company  
Post Office Box 149  
St. Louis, Missouri 63166

Mr. Donald Bollinger, Member  
Missourians for Safe Energy  
6267 Delmar Boulevard  
University City, Missouri 63130

U. S. Nuclear Regulatory Commission  
Resident Inspectors Office  
RR#1  
Steedman, Missouri 65077

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

Mr. Donald W. Capone, Manager  
Nuclear Engineering  
Union Electric Company  
Post Office Box 149  
St. Louis, Missouri 63166

Chris R. Rogers, P.E.  
Manager - Electric Department  
301 W. High  
Post Office Box 360  
Jefferson City, Missouri 65102

Regional Administrator  
U. S. NRC, Region III  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Mr. Ronald A. Kucera, Deputy Director  
Department of Natural Resources  
P. O. Box 176  
Jefferson City, Missouri 65102

Mr. Glenn L. Koester  
Vice President - Nuclear  
Kansas Gas and Electric Company  
201 North Market Street  
Post Office Box 208  
Wichita, Kansas 67201

Apr 3, 1987

AMENDMENT NO. 19 TO FACILITY OPERATING LICENSE NPF-30 - CALLAWAY PLANT, UNIT 1

DISTRIBUTION:

Docket File 50-483

NRC PDR

Local PDR

PRC System

PWR#4 Rdg

M. Duncan

P. O'Connor

T. Novak

B. J. Youngblood

R. Diggs

T. Barnhart (4)

W. Jones

OPA

FOB

J. Partlow

B. Grimes

E. Jordan

ACRS (10)

OGC-Bethesda

L. Harmon

A. Toalston



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. 19  
License No. NPF-30

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Callaway Plant, Unit 1 (the facility) Facility Operating License No. NPF-30 filed by Union Electric Company (the licensee) dated January 9, 1986, 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:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 19, and the Environmental Protection Plan

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contained in Appendix B, both of which are attached hereto, are hereby incorporated into the license. Union Electric shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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Paul O'Connor, Project Manager  
PWR Project Directorate #4  
Division of PWR Licensing-A

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance:

PWR#4/DPWR-A  
MDuncan/mac  
02/19/87

PWR#4/DPWR-A  
PO'Connor  
02/26/87

*PWOC*

*See note  
3/17/87*

*The cover letter  
has been modified  
as suggested.  
OGC Bethesda no order  
required  
per T. M. Young  
BJ Youngblood  
PWOC 02/17/87*

*3/4/87*

ATTACHMENT TO LICENSE AMENDMENT NO. 19

OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

Amended Page

3/4 3-4  
3/4 3-6a (new page)  
3/4 3-9  
3/4 3-12  
3/4 3-12a

CALLAWAY - UNIT 1

3/4 3-4

Amendment No. 19

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
18. Reactor Trip System Interlocks					
a. Intermediate Range Neutron Flux, P-6	2	1	2	2##	8
b. Low Power Reactor Trips Block, P-7					
P-10 Input	4	2	3	1	8
or					
P-13 Input	2	1	2	1	8
c. Power Range Neutron Flux, P-8	4	2	3	1	8
d. Power Range Neutron Flux, P-9	4	2	3	1	8
e. Power Range Neutron Flux, P-10	4	2	3	1, 2	8
f. Turbine Impulse Chamber Pressure, P-13	2	1	2	1	8
19. Reactor Trip Breakers	2 2	1 1	2 2	1, 2 3*, 4*, 5*	9,12 10
20. Automatic Trip and Interlock Logic	2 2	1 1	2 2	1, 2 3*, 4*, 5*	9 10



TABLE 3.3-1 (Continued)

ACTION STATEMENTS (Continued)

ACTION 12 - With one of the diverse trip features (Undervoltage or Shunt Trip Attachment) inoperable, restore it to OPERABLE status within 48 hours or declare the affected breaker inoperable and apply ACTION 9. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
1. Manual Reactor Trip	N.A.	N.A.	N.A.	R(16)	N.A.	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux						
a. High Setpoint	S	D(2, 4), M(3, 4), Q(4, 6), R(4, 5)	Q(14)	N.A.	N.A.	1, 2
b. Low Setpoint	S	R(4)	S/U(1)	N.A.	N.A.	1###, 2
3.. Power Range, Neutron Flux, High Positive Rate	N.A.	R(4)	Q(14)	N.A.	N.A.	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(4)	Q(14)	N.A.	N.A.	1, 2
5. Intermediate Range, Neutron Flux	S	R(4, 5)	S/U(1)	N.A.	N.A.	1###, 2
6. Source Range, Neutron Flux	S	R(4, 5, 12)	S/U(1),Q(9,14)	N.A.	N.A.	2##, 3, 4,
7. Overtemperature $\Delta T$	S	R(13)	Q(14)	N.A.	N.A.	1, 2
8. Overpower $\Delta T$	S	R	Q(14)	N.A.	N.A.	1, 2
9. Pressurizer Pressure-Low	S	R	Q(14)	N.A.	N.A.	1
10. Pressurizer Pressure-High	S	R	Q(14)	N.A.	N.A.	1, 2
11. Pressurizer Water Level-High	S	R	Q(14)	N.A.	N.A.	1
12. Reactor Coolant Flow-Low	S	R	Q(14)	N.A.	N.A.	1

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

\*Only if the Reactor Trip System breakers happen to be closed and the Control Rod Drive System is capable of rod withdrawal.

#The specified 18 month frequency may be waived for Cycle I provided the surveillance is performed prior to restart following the first refueling outage or June 1, 1986, whichever occurs first. The provisions of Specification 4.0.2 are reset from performance of this surveillance.

##Below P-6 (Intermediate Range Neutron Flux interlock) Setpoint.

###Below P-10 (Low Setpoint Power Range Neutron Flux interlock) Setpoint.

- (1) If not performed in previous 31 days.
- (2) Comparison of calorimetric to excore power indication above 15% of RATED THERMAL POWER. Adjust excore channel gains consistent with calorimetric power if absolute difference is greater than 2%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (3) Single point comparison of incore to excore AXIAL FLUX DIFFERENCE above 15% of RATED THERMAL POWER. Recalibrate if the absolute difference is greater than or equal to 3%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (4) Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (5) Detector plateau curves shall be obtained, evaluated and compared to manufacturer's data. For the Intermediate Range and Power Range Neutron Flux channels the provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (6) Incore - Excore Calibration, above 75% of RATED THERMAL POWER. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (7) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS. The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the Undervoltage and Shunt Trip Attachments of the Reactors Trip Breakers.
- (8) Deleted
- (9) Quarterly surveillance in MODES 3\*, 4\*, and 5\* shall also include verification that permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window. Quarterly surveillance shall include verification of the Boron Dilution Alarm Setpoint of less than or equal to an increase of twice the count rate within a 10-minute period.
- (10) Setpoint verification is not required.
- (11) Following maintenance or adjustment of the Reactor trip breakers, the TRIP ACTUATING DEVICE OPERATIONAL TEST shall include independent verification of the Undervoltage and Shunt trips.
- (12) At least once per 18 months during shutdown, verify that on a simulated Boron Dilution Doubling test signal the normal CVCS discharge valves will close and the centrifugal charging pumps suction valves from the RWST will open within 30 seconds.

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

- (13) CHANNEL CALIBRATION shall include the RTD bypass loops flow rate.
- (14) Each channel shall be tested at least every 92 days on a STAGGERED TEST BASIS.
- (15) The surveillance frequency and/or MODES specified for these channels in Table 4.3-2 are more restrictive and, therefore, applicable.
- (16) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the Undervoltage and Shunt Trip circuits for the Manual Reactor Trip function. The test shall also verify the OPERABILITY of the Bypass Breaker trip circuit.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 19 TO OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

INTRODUCTION

By letter dated January 9, 1986, Union Electric Company (the licensee) proposed changes to the Callaway Technical Specifications pertaining to Reactor Trip System Instrumentation and Surveillance in response to Generic Letter 85-09 (MPA B-90). Generic Letter 85-09 concluded that Technical Specification changes should be proposed by licensees to explicitly require independent testing of the undervoltage and shunt trip attachments of the reactor trip breakers during power operation, testing of bypass breakers prior to use, and independent testing of the control room manual switch contacts and wiring during each refueling outage.

DISCUSSION AND EVALUATION

Union Electric Company's proposed Technical Specification changes are consistent with those specified in Generic Letter 85-09, except as indicated below by items 1 and 2.

1. Insert B of the Licensee's proposed Technical Specification changes states:

"The Trip Actuating Device Operational Test shall independently verify the Operability of the Undervoltage and Shunt Trip Attachments of the Reactor Trip Breakers."

The above is identical to Table Notation (11) of Generic Letter 83-28 and is therefore acceptable to staff. However, Insert B would be appended to Table Notation (7) of Table 4.3.1. Since Table Notation (7) applies to Functional Unit 20 (Automatic Trip and Interlock Logic) as well as Functional Unit 19 (Reactor Trip Breaker), the Insert B test would also (presumably unintentionally) apply to the automatic trip and interlock logic. If instead, Insert B were appended to Table Notation (11) instead of (7), the test would (correctly we believe) apply only to the Reactor Trip Breaker. The staff therefore, suggests that the licensee consider this change.

2. The proposed Technical Specification changes do not include functional testing of a bypass breaker each time before placing it in operation. The licensee states that it plans to administratively control this testing outside of the Technical Specifications. As support for this position, the licensee has provided the results of a probability risk assessment (PRA) indicating only minimal improvement in reliability by such testing.

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The licensee's proposal to administratively control the testing outside of the Technical Specifications is not acceptable to the NRC staff. When a reactor trip breaker is tested, the reactor trip bypass breaker is put into service as a backup. The Generic Letter 85-09 Technical Specifications specify a manual test of the bypass breaker prior to putting it into service. This testing is a simple procedure and it is prudent to do this test before relying on this breaker as a backup to the remaining reactor trip breaker. Although the licensee states that probabilistic risk analyses (PRAs) show that testing of the breaker has an insignificant effect on the overall reliability, no claim is made that the reliability is decreased or that the bypass breaker is not safety related. Therefore, we believe that this test should be made as specified in Generic Letter 85-09.

We find the licensee's proposed changes to its Technical Specifications for the Callaway Nuclear Plant acceptable except for the omission of the manual testing of each reactor trip bypass breaker before placing it in service. The licensee should amend their proposed Technical Specification changes to provide for this testing consistent with Generic Letter 85-09. Also, the licensee may want to change the table notation number to which the proposed Insert B would be appended as discussed in this evaluation.

#### ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the 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 published a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. 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 the amendment.

#### CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (51 FR 30583) on August 27, 1986, and consulted with the state of Missouri. No public comments were received, and the state of Missouri did not have any comments.

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and 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 Contributors: Paul O'Connor, PWR#4/DPWR-A  
A. Toalston, EICSB/DPWR-A

Date: April 3, 1987