

February 12, 2001

Mr. Garry L. Randolph
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:
TABLE 3.3.2-1, "ENGINEERED SAFETY FEATURE ACTUATION SYSTEM
INSTRUMENTATION" (TAC NO. MB0587)

Dear Mr. Randolph:

The Commission has issued the enclosed Amendment No. 141 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 November 21, 2000 (ULNRC-04346).

The amendment revises Table 3.3.2-1, "Engineered Safety Feature Actuation System [ESFAS] Instrumentation," of the TSs. The revision adds Surveillance Requirement (SR) 3.3.2.10 for the following two ESFAS instrumentation in the table: item 6.f, loss of offsite power, and item 6.h, auxiliary feedwater pump suction transfer on suction pressure - low. The licensee also identified that there would be changes to the Final Safety Analysis Report (FSAR). The amendment shall be implemented prior to entering Mode 3 from Mode 4 during the startup from Refuel Outage 11, including the revision of the FSAR to reflect the ESFAS response times in accordance with the application.

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 N. Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures: 1. Amendment No. 141 to NPF-30
2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Jack N. Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
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Docket No. 50-483

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2. Safety Evaluation

cc w/encls: See next page

Callaway Plant, Unit 1

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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. 141
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 November 21, 2000, 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. 141 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 from Mode 4 during the startup from Refuel Outage 11, including the revision of the FSAR to reflect the ESFAS response times in accordance with the application.

FOR THE NUCLEAR REGULATORY COMMISSION



Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: February 12, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 141

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

3.3-43

3.3-44

INSERT

3.3-43

3.3-44

Table 3.3.2-1 (page 7 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE ^(a)
6. Auxiliary Feedwater					
d. SG Water Level Low-Low (continued)					
(3) Vessel ΔT Equivalent including delay timers - Trip Time Delay					
(a) Vessel ΔT (Power-1)	1,2	4	M	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ Vessel ΔT Equivalent to 13.9% RTP ^(k)
(b) Vessel ΔT (Power-2)	1,2	4	M	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ Vessel ΔT Equivalent to 23.9% RTP ^(l)
(4) Containment Pressure - Environmental Allowance Modifier	1, 2, 3	4	N	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 2.0 psig
e. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
f. Loss of Offsite Power	1,2,3	2 trains	R	SR 3.3.2.7 SR 3.3.2.10	NA
g. Trip of all Main Feedwater Pumps	1,2 ⁽ⁿ⁾	2 per pump	J	SR 3.3.2.8	NA

(continued)

(a) The Allowable Value defines the limiting safety system setting. See the Bases for the Trip Setpoints.

(k) With a time delay ≤ 240 seconds.

(l) With a time delay ≤ 130 seconds.

(n) Trip function may be blocked just before shutdown of the last operating main feedwater pump and restored just after the first main feedwater pump is put into service following performance of its startup trip test.

Table 3.3.2-1 (page 8 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE ^(a)
6. Auxiliary Feedwater (continued)					
h. Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low	1,2,3	3	O	SR 3.3.2.1 SR 3.3.2.9 SR 3.3.2.10 SR 3.3.2.12	≥ 20.64 psia
7. Automatic Switchover to Containment Sump					
a. Automatic Actuation Logic and Actuation Relays (SSPS)	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.13	NA
b. Refueling Water Storage Tank (RWST) Level - Low Low	1,2,3,4	4	K	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 35.2%
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
8. ESFAS Interlocks					
a. Reactor Trip, P-4	1,2,3	2 per train, 2 trains	F	SR 3.3.2.11	NA
b. Pressurizer Pressure, P-11	1,2,3	3	L	SR 3.3.2.5 SR 3.3.2.9	≤ 1981 psig
9. Automatic Pressurizer PORV Actuation					
a. Automatic Actuation Logic and Actuation Relays (SSPS)	1,2,3	2 trains	H	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.14	NA
b. Pressurizer Pressure - High	1,2,3	4	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9	≤ 2350 psig

(a) The Allowable Value defines the limiting safety system setting. See the Bases for the Trip Setpoints.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 141 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By application dated November 21, 2000, 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 TS Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation." The changes would add Surveillance Requirement (SR) 3.3.2.10 for the following two engineered safety feature actuation system instrumentation in the table: item 6.f, loss of offsite power, and item 6.h, auxiliary feedwater pump suction transfer on suction pressure - low. The licensee also identified that there would be changes to the Final Safety Analysis Report (FSAR).

2.0 BACKGROUND

The auxiliary feedwater (AFW) system supplies feedwater to the steam generators to remove decay heat from the reactor coolant system upon loss of the normal feedwater supply. The system has two motor-driven pumps and a turbine-driven pump. The turbine-driven pump is powered by steam from the steam generators. The AFW pumps normally take suction through a common suction line from the preferred source of water, the condensate storage tank (CST). A low-pressure signal in the AFW pump suction line protects the AFW pumps against a loss of water from the CST by transferring the suction to the essential service water (ESW) system. The CST is the preferred water supply to the AFW pumps due to the quality of the water; however, the CST is a non-seismic structure and the safety-related source of water to the pumps is the ESW system.

3.0 EVALUATION

The proposed amendment to the TSs would add SR 3.3.2.10 to Functions 6.f (start of the turbine-driven AFW pump on a loss of offsite power) and 6.h (AFW pump suction transfer from the CST to the ESW system on low suction pressure) of TS Table 3.3.2-1. This would add the requirement in SR 3.3.2.10 that engineered safety feature (ESF) response times be verified within limits every 18 months on a staggered test basis. Currently, Functions 6.f and 6.h do not have SR 3.3.2.10. Therefore, the proposed amendment request is adding requirements to the TSs.

In its application, the licensee stated that the current small-break loss-of-coolant accident (SB-LOCA) analysis in Chapter 15 of the FSAR includes a delay of not more than 60 seconds for the time between the AFW actuation signal and the time when the turbine-driven AFW pump is at full flow. This 60-second response time accounts for the delays associated with the delivery of flow from the turbine-driven AFW pump. For a loss of power that is assumed to occur with the reactor trip signal, this response time would be the time to sense the loss of power, the signal actuation delays, the time for the steam valves to open to provide steam to the steam-driven AFW pump, and the spin-up time of the steam-driven AFW pump.

In addition, the licensee stated that for non-LOCA transients, the FSAR Chapter 15 analyses credits AFW pump start within 60 seconds after the associated ESF actuation signal is generated. This response time accounts for the delays associated with the transfer of the AFW pump suction from the CST to the ESW system on low suction pressure and includes all signal actuation delays, diesel generator starting and sequencer loading delays, valve stroke times, and ESF pump spinup time.

The licensee stated that the current TS Table 3.3.2-1 does not include response time requirements on the ESF actuation system instrumentation for the AFW with loss of offsite power (Function 6.f) and AFW pump suction transfer on low suction pressure (Function 6.h). The response time testing program must include these two ESF functions to ensure that the FSAR Chapter 15 analyses are met. The response time for these two functions is ≤ 60 seconds as discussed above.

Therefore, to require that the response time testing program includes the two ESF functions for the AFW pumps, the licensee has proposed to add the requirement of performing SR 3.3.2.10 to verify ESF response times to Functions 6.f and 6.h of Table 3.3.2-1. Because the FSAR accident analyses include response times of not more than 60 seconds for Functions 6.f and 6.h of Table 3.3.2-1 and adding the SR 3.3.2.10 to these functions in the table will require the response time to be verified as being consistent with the accident analyses, the staff concludes that the proposed changes to TS Table 3.3.2-1 are acceptable.

The ESF response times are listed in FSAR Table 16.3-2 because the response times do not meet the criteria in 10 CFR 50.36 to be included in the TSs. The licensee stated that the value of ≤ 60 seconds will replace the response times in FSAR Table 16.3-2 for the functions that are equivalent to Functions 6.f and 6.h of TS Table 3.3.2-1. The changes to the FSAR that were included in Attachment Four to the application are consistent with the discussion provided in the application as justification for the proposed changes to the TSs.

The license amendment shall be implemented prior to entering Mode 3 from Mode 4 during the startup from Refuel Outage 11, including the revision of the FSAR to reflect the ESFAS response times in accordance with the application. The update to the FSAR would be submitted to the NRC in accordance with 10 CFR 50.71(e). Any changes to these response times would be controlled by the change criteria in 10 CFR 50.59, "Changes, tests, and experiments," because the response times would be in the FSAR. The change criteria in the regulations provides sufficient control over any changes to the response times. Therefore, adding the response times to the FSAR and the proposed TS changes are acceptable to the staff.

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 stated that the State of Missouri had no disagreement with the Commission issuing the amendment.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment 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 (65 FR 81931). 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: Jack Donohew

Date: February 12, 2001