April 23, 1998

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

SUBJECT: AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. NPF-30 - CALLAWAY PLANT, UNIT 1 (TAC NO. M99420)

Dear Mr. Randolph:

The Commission has issued the enclosed Amendment No. 126 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated August 8, 1997, as supplemented by letter dated November 10, 1997.

The amendment revises the feedwater isolation engineered safety features actuation system (ESFAS) functions in TS Tables 3.3-3, 3.3-4, and 4.3-2.

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
Barry C. Westreich, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures: 1. Amendment No. 126 to NPF-42
2. Safety Evaluation

cc w/encls: See next page

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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. 126
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 August 8, 1997, and supplemented by letter dated November 10, 1997, 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.

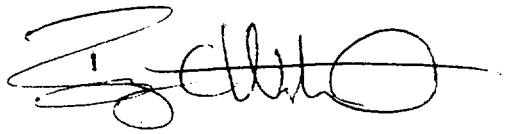
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-30 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 126 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 to be implemented within 30 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Barry C. Westreich, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: April 23, 1998

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
3/4 3-17	3/4 3-17
---	3/4 3-17a
3/4 3-18	3/4 3-18
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
---	3/4 3-24(a)
---	3/4 3-24(b)
3/4 3-25	3/4 3-25
3/4 3-28	3/4 3-28
3/4 3-35	3/4 3-35
---	3/4 3-35a
3/4 3-36	3/4 3-36
3/4 3-37	3/4 3-37
B 3/4 3-3	B 3/4 3-3

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
5. Feedwater Isolation & Turbine Trip					
a. 1) Automatic Actuation Logic and Actuation Relays (SSPS)	2	1	2	1, 2, 3	34
2) Automatic Actuation Logic and Actuation Relays (MSFIS)	2+++	1	2+++	1, 2, 3	34
b. Steam Generator Water Level High-High	4/stm. gen.	2/stm. gen. in any operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2	33*
c. Safety Injection	See Item 1. above for all Safety Injection initiating functions and requirements.				
d. Steam Generator Water Level Low-Low[(a)]					
1) Steam Generator Water Level Low-Low (Adverse Containment Environment)	4/stm. gen.	2/stm. gen. in any operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	33*, 35
2) Steam Generator Water Level Low-Low (Normal Containment Environment)	4/stm. gen.	2/stm. gen. in any operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	35, 36*
3) Vessel ΔT (Power-1, Power-2)	4	2	3	1, 2	37*
4) Containment Pressure-Environmental Allowance Modifier	4	2	3	1, 2, 3	37*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
6. Auxiliary Feedwater					
a. Manual Initiation	3(1/pump)	1/pump	1/pump	1, 2, 3	24
b. Automatic Actuation Logic and Actuation Relays (SSPS)	2	1	2	1, 2, 3	34
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	2	1	2	1, 2, 3	21
d. Steam Generator Water Level Low-Low					
1) Start Motor-Driven Pumps					
a) Steam Generator Water Level Low-Low (Adverse Containment Environment)	4/stm. gen.	2/stm. gen. in any operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	33*, 35
b) Steam Generator Water Level Low-Low (Normal Containment Environment)	4/stm. gen.	2/stm. gen. in any operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	35, 36*
c) Vessel ΔT (Power-1, Power-2)	4	2	3	1, 2	37*
d) Containment Pressure-Environmental Allowance Modifier	4	2	3	1, 2, 3	37*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
6. Auxiliary Feedwater (Continued)					
d. Steam Generator Water Level Low-Low (Continued)					
2) Start Turbine-Driven Pump					
a) Steam Generator Water Level Low-Low (Adverse Containment Environment)	4/stm. gen.	2/stm. gen. in any 2 operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	33*, 35
b) Steam Generator Water Level Low-Low (Normal Containment Environment)	4/stm. gen.	2/stm. gen. in any 2 operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	35, 36*
c) Vessel ΔT (Power-1, Power-2)	4	2	3	1, 2	37*

TABLE 3.3-3 (CONTINUED)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
8. Loss of Power					
a. 4 kV Bus Undervoltage -Loss of Voltage	4/Bus	2/Bus	3/Bus	1, 2, 3, 4, 5++, 6++	19*
b. 4 Kv Bus Undervoltage -Grid Degraded Voltage	4/Bus	2/Bus	3/Bus	1, 2, 3, 4, 5++, 6++	19*
9. Control Room Isolation					
a. Manual Initiation	2	1	2	All	26****
b. Automatic Actuation Logic and Actuation Relays (SSPS)	2	1	2	1, 2, 3, 4	26
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	2	1	2	All	26****
d. Phase "A" Isolation	See Item 3.a above for all Phase "A" Isolation initiating functions and requirements.				
10. Load Shedder Emergency Load Sequencer	2-1/Train	1/Train	2-1/Train	1, 2, 3, 4, 5+, 6+	25
11. Engineered Safety Features Actuation System Interlocks					
a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	20
b. Reactor Trip, P-4	4-2/Train	2/Train	2/Train	1, 2, 3	22

TABLE 3.3-3 (Continued)

TABLE NOTATION

Trip function may be blocked in this MODE below the P-11 (Pressurizer Pressure Interlock) Setpoint.

Trip function automatically blocked above P-11 and may be blocked below P-11 when Safety Injection on low steam line pressure is not blocked.

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 its startup trip test).

* The provisions of Specification 3.0.4 are not applicable.

** One in Separation Group 1 and one in Separation Group 4.

*** The de-energization of one train of BOP ESFAS actuation logic and actuation relays renders two of the four channels inoperable. Action Statement 21 applies to both Functional Units 6.c and 6.g in this case.

**** The provisions of Specification 3.0.4 are not applicable in Modes 5 and 6.

+ Only the shutdown portion of one sequencer is required to be OPERABLE in Modes 5 and 6 which corresponds to the OPERABLE Emergency Diesel Generator.

++ Operability is only required for associated OPERABLE bus in Modes 5 and 6.

+++ Each MSFIS channel (train) requires a minimum of two programmable logic controllers to be OPERABLE.

(a) Feedwater isolation only.

ACTION STATEMENTS

ACTION 14 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1, provided the other channel is OPERABLE.

ACTION 15 - With the number of OPERABLE channels one less than the Total Number of Channels, operation may proceed until performance of the next required ANALOG CHANNEL OPERATIONAL TEST provided the inoperable channel is placed in the tripped condition within 1 hour.

ACTION 16 - With the number of OPERABLE channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the bypass condition and the Minimum Channels OPERABLE requirement is met. One additional channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.

ACTION 17 - With less than the Minimum Channels OPERABLE requirement, operation may continue provided the containment purge supply and exhaust valves are maintained closed.

TABLE 3.3-3 (continued)

ACTION STATEMENTS (continued)

ACTION 25 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, declare the affected diesel generator and off-site power source inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2.

ACTION 26 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or initiate and maintain operation of the Control Room Emergency Ventilation System.

ACTION 27 - Deleted.

ACTION 27a - Deleted.

(NOTE: ACTION STATEMENTS 28 THROUGH 31 ARE LOCATED ON OTHER TABLES.)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
5. Feedwater Isolation (Continued)					
b. Steam Generator Water Level-High-High	5.0	2.18	2.0	≤ 78% of narrow range instrument span	≤ 79.8% of narrow range instrument span
c. Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.				
d. Steam Generator Water Level Low-Low***					
1) Vessel ΔT Equivalent ≤ 10% RTP Vessel ΔT (Power-1)	6.0	2.72	1.65	≤ Vessel ΔT Equivalent to 12.41% RTP	≤ Vessel ΔT Equivalent to 13.9% RTP
Coincident with					
Steam Generator Water Level Low-Low (Adverse Containment Environment)	20.2	17.58	2.0	≥ 20.2% of narrow range instrument span	≥ 18.4% of narrow range instrument span
and					
Containment Pressure-Environmental Allowance Modifier	2.8	0.71	2.0	≤ 1.5 psig	≤ 2.0 psig
OR					
Steam Generator Water Level Low-Low (Normal Containment Environment)	14.8	12.18	2.0	≥ 14.8% of narrow range instrument span	≥ 13.0% of narrow range instrument span
With a Time Delay, (t)				≤ 232 seconds	≤ 240 seconds

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
5.d Steam Generator Water Level Low-Low*** (Continued)					
2) 10% RTP < Vessel ΔT Equivalent ≤ 20% RTP Vessel ΔT (Power-2)	6.0	2.72	1.65	≤ Vessel ΔT Equivalent to 22.41% RTP	≤ Vessel ΔT Equivalent to 23.9% RTP
Coincident with					
Steam Generator Water Level Low-Low (Adverse Containment Environment)	20.2	17.58	2.0	≥ 20.2% of narrow range instrument span	≥ 18.4% of narrow range instrument span
and					
Containment Pressure-Environmental Allowance Modifier	2.8	0.71	2.0	≤ 1.5 psig	≤ 2.0 psig
OR					
Steam Generator Water Level Low-Low (Normal Containment Environment)	14.8	12.18	2.0	≥ 14.8% of narrow range instrument span	≥ 13.0% of narrow range instrument span
With a Time Delay, (t)				≤ 122 seconds	≤ 130 seconds

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
5.d Steam General Water Level Low-Low*** (Continued)					
3) Vessel ΔT Equivalent > 20% RTP					
Coincident with					
Steam Generator Water Level Low-Low (Adverse Containment Environment)	20.2	17.58	2.0	≥ 20.2% of narrow range instrument span	≥ 18.4% of narrow range instrument span
and					
Containment Pressure-Environmental Allowance Modifier	2.8	0.71	2.0	≤ 1.5 psig	≤ 2.0 psig
OR					
Steam Generator Water Level Low-Low (Normal Containment Environment)	14.8	12.18	2.0	≥ 14.8% of narrow range instrument span	≥ 13.0% of narrow range instrument span
6. Auxiliary Feedwater					
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. Steam Generator Water Level-Low-Low					

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
6. Auxiliary Feedwater (Continued)					
d. Steam Generator Water Level Low-Low (Continued)					
1) Start Motor-Driven Pumps					
a. Vessel ΔT Equivalent ≤ 12.41% RTP Vessel ΔT (Power-1)	N.A.	N.A.	N.A.	≤ Vessel ΔT Equivalent to 12.41% RTP	≤ Vessel ΔT Equivalent to 13.9% RTP
Coincident with					
Steam Generator Water Level Low-Low (Adverse Containment Environment)	20.2	17.58	2.0	≥ 20.2% of Narrow Range Instrument Span	≥ 18.4% of Narrow Range Instrument Span
and					
Containment Pressure - Environmental Allowance Modifier	2.8	0.71	2.0	≤ 1.5 psig	≤ 2.0 psig
OR					
Steam Generator Water Level Low-Low (Normal Containment Environment)	14.8	12.18	2.0	≥ 14.8% of Narrow Range Instrument Span	≥ 13.0% of Narrow Range Instrument Span
With a Time Delay, (t)				≤ 232 seconds	≤ 240 seconds

TABLE 3.3-4 (CONTINUED)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	ALLOWANCE (TA)	TOTAL Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
8. Loss of Power (Continued)					
b. 4 kV Undervoltage - Grid Degraded Voltage	0.78	0.53	0	107.47V (120V Bus) w/119s delay	107.47 ± 0.38V (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. Load Shedder Emergency 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.

*** Feedwater isolation only.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
4. Steam Line Isolation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. 1) Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3
2) Automatic Actuation Logic and Actuation Relays (MSFIS)	N.A.	N.A.	N.A.	N.A.	M(1)	N.A.	N.A.	1, 2, 3
c. Containment Pressure-High-2	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Steam Line Pressure-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Steam Line Pressure-Negative Rate-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	3
5. Feedwater Isolation & Turbine Trip								
a. 1) Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q(3)	1, 2, 3
2) Automatic Actuation Logic and Actuation Relays (MSFIS)	N.A.	N.A.	N.A.	N.A.	M(1)	N.A.	N.A.	1, 2, 3
b. Steam Generator Water Level-High-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2
c. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
5.d Steam Generator Water Level Low-Low[(a)]								
1) Steam Generator Water Level Low-Low (Adverse Containment Environment)	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
2) Steam Generator Water Level Low-Low (Normal Containment Environment)	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
3) Vessel ΔT (Power-1, Power-2)	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2
4) Containment Pressure-Environmental Allowance Modifier	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
6. Auxiliary Feedwater								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
6. Auxiliary Feedwater (Continued)								
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	1, 2, 3
d. Steam Generator Water Level Low-Low								
1) Steam Generator Water Level Low-Low (Adverse Containment Environment)	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
2) Steam Generator Water Level Low-Low (Normal Containment Environment)	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
3) Vessel ΔT (Power-1, Power-2)	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2
4) Containment Pressure - Environmental Allowance Modifier	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Safety Injection	See Item 1 above for all Safety Injection Surveillance Requirements.							

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
9. Control Room Isolation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	All
b. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q(3)	1, 2, 3, 4
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	All
d. Phase "A" Isolation	See Item 3.a. above for all Phase "A" Isolation Surveillance Requirements.							
10. Load Shedder Emergency Load Sequencer	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	1, 2, 3, 4, 5+, 6+
11. Engineered Safety Features Actuation System Interlocks								
a. Pressurizer Pressure, P-11	N.A.	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
b. Reactor Trip, P-4	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3

TABLE NOTATIONS

(1) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.
(2) Continuity check may be excluded from the ACTUATION LOGIC TEST.
(3) Except Relays K602, K620, K622, K624, K630, K740, and K741, which shall be tested at least once per 18 months during refueling and during each COLD SHUTDOWN exceeding 24 hours unless they have been tested within the previous 90 days.
(4) Tie Breakers 52 NG0116 and 52 NG0216 shall be verified open.
The specified 18 month frequency may be waived for Cycle 1 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.
+ Only the shutdown portion of one sequencer is required to be OPERABLE in Modes 5 and 6 which corresponds to the OPERABLE Emergency Diesel Generator.
++ Operability is only required for associated OPERABLE bus in Modes 5 and 6.
(a) Feedwater isolation only.

Engineered Safety Features Actuation System Interlocks

The Engineered Safety Features Actuation System interlocks perform the following functions:

P-4 Reactor tripped - Actuates Turbine trip, closes main feedwater valves on T_{avg} below setpoint (may be manually blocked since this function is not required by the safety analyses), prevents the opening of the main feedwater valves which were closed by a Safety Injection or High Steam Generator Water Level signal, allows Safety Injection block so that components can be reset or tripped.

Reactor not tripped - prevents manual block of Safety Injection.

P-11 On increasing pressure P-11 automatically reinstates Safety Injection actuation on low pressurizer pressure and low steam line pressure and automatically blocks steam line isolation on negative steam line pressure rate. On decreasing pressure, P-11 allows the manual block of Safety Injection on low pressurizer pressure and low steam line pressure and allows steam line isolation on negative steam line pressure rate to become active upon manual block of low steam line pressure SI.

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING FOR PLANT OPERATIONS

The OPERABILITY of the radiation monitoring instrumentation for plant operations ensures that: (1) the associated action will be initiated when the radiation level monitored by each channel or combination thereof reaches its setpoint, (2) the specified coincidence logic is maintained, and (3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance. The radiation monitors for plant operations senses radiation levels in selected plant systems and locations and determines whether or not predetermined limits are being exceeded. If they are, the signals are combined into logic matrices sensitive to combinations indicative of various accidents and abnormal conditions. Once the required logic combination is completed, the system sends actuation signals to initiate alarms or automatic isolation action and actuation of Emergency Exhaust or Control Room Emergency Ventilation Systems.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letter dated August 8, 1997, as supplemented by letter dated November 10, 1997, the Union Electric Company (UE) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-30) for the Callaway Plant, Unit 1. The proposed changes would revise the Technical Specifications (TS) to change feedwater isolation engineered safety features actuation system (ESFAS) functions in TS Tables 3.3-3, 3.3-4, and 4.3-2.

The November 10, 1997, supplemental letter provided additional clarifying information and did not change the staff's original no significant hazards determination that was published in the Federal Register on December 17, 1997 (62 FR 66144).

2.0 TECHNICAL SPECIFICATION CHANGES AND EVALUATION

2.1 Actuation Logic Applicability

The applicable modes for Functional Units 5.a.1), Automatic Actuation Logic and Actuation Relays (SSPS), and 5.a.2), Automatic Actuation Logic and Actuation Relays (MSFIS), in Tables 3.3-3 and 4.3-2 would be revised to add MODE 3. This change is proposed because the automatic actuation logic for closure of the main feedwater isolation valves (MFIVs) must be available in MODE 3 to establish a pressure boundary preventing diversion of auxiliary feedwater (AFW) flow, thereby ensuring delivery of AFW flow to at least two intact steam generators under accident conditions. As a result of this change in applicability, the end point of the action statements will be changed to hot shutdown. This change is more restrictive and is consistent with the applicability of other TS related to decay heat removal by the auxiliary feedwater (AFW) system. This change is acceptable.

2.2 New Steam Generator Level Low-Low Functional Unit

A new Functional Unit 5.d, Steam Generator (SG) Water Level Low-Low (for feedwater isolation only), would be added to Tables 3.3-3, 3.3-4, and 4.3-2. This change is more restrictive. The main feedwater isolation valve (MFIV) isolation on SG water level low-low isolation was added to the plant design to address a concern that AFW flow could be fed back through the MFW system instead of to the SGs under certain break conditions. This isolation signal is credited in the analyses for the loss of non-emergency AC power, loss of normal feedwater, and feedwater system pipe break events. This isolation signal was not included in the original TS, which were based on the Westinghouse Standard Technical Specifications (STS), because neither the STS at the time nor the current STS include this isolation signal. While this isolation signal had not previously been included in the TS, the licensee stated that they have always performed surveillances on this isolation signal consistent with other automatic actuation logic and actuation relays applicable in MODES 1-3. This change is acceptable.

2.3 Trip Time Delay Applicability

The applicable MODES in Table 3.3-3 for auxiliary feedwater (AFW) SG Water Level Low-Low Functional Units 6.d.1).c), Start Motor Driven Pumps Vessel Delta T (Power-1, Power-2), and 6.d.2).c), Start Turbine-Driven Pump Vessel Delta T (Power-1, Power-2), would be revised to delete MODE 3. Functional Unit 6.d.3) in Table 4.3-2 would also be revised to delete MODE 3. This function is used to change the trip time delays depending on power level. At reactor thermal power less than or equal to 10 percent, the maximum trip time delay is enabled, and the maximum trip time delay should always be enabled in MODE 3. This change is acceptable.

2.4 Feedwater Isolation on P-4/Low Tavg

The Bases for Functional Unit 11.b, Reactor Trip P-4, in Table 3.3-3 would be revised to add a note allowing the feedwater isolation function on P-4 (reactor trip and bypass breakers open) coincident with low Tavg (Tavg $\leq$ 564°F) to be blocked. The reason for the change is to decrease unnecessary cycling of the MFIVs and AFW system which adversely impacts startup and shutdown evolutions. This feedwater isolation function provides backup protection for excessive cooldown events and is not credited in any FSAR analyses. The licensee has proposed to install a bypass switch to block this signal during startup and shutdown evolutions with Tavg $\leq$ 564°F just prior to opening the reactor trip breakers. The feedwater isolation function would be restored by manually defeating the bypass prior to entering MODE 2. This change is acceptable.

2.5 Conclusion

The staff has reviewed the licensee's proposed TS changes to revise the feedwater isolation ESFAS functions. Based on the review, the staff concludes that the proposed TS changes 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

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 surveillance requirements. 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 (62 FR 66144). 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.

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Date: April 23, 1998