

Docket No.: STN 50-483

Mr. D. F. Schnell
Vice President - Nuclear
Union Electric Company
P. O. Box 149
St. Louis, Missouri 63166

OCT 3 1985

Dear Mr. Schnell:

Subject: Callaway Plant, Unit 1 - Amendment No. 8 to License NPF-30

The Commission has issued the enclosed Amendment No. 8 to 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 July 10, 1985, as supplemented by letter dated August 9, 1985. The amendment extends the initial 18-month surveillance interval for various tests until prior to startup following the first refueling outage or June 1, 1986, whichever occurs first. The affected surveillance intervals include manual initiations of the reactor trip system and engineered safety features actuation system (ESFAS), portions of diesel generator testing, ESFAS actuations on safety injection and loss of offsite power, containment spray actuation testing, Phase A and B containment isolations, and a Class 1E battery service test.

The amendment approves modifications to Pages 3/4 3-10, 3-12, 3-33, 3-34, 3-37, 5-5, 6-13, 6-17, 7-11, 7-12, 8-4, and 8-10 of the Callaway Technical Specifications.

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

Sincerely,

for Paul W. O'Connor
B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing

Enclosures:

- 1. Amendment No. 8 to NPF-30
- 2. Safety Evaluation Report

cc: See next page

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See attached page

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Mr. D. F. Schnell
Union Electric Company

Callaway Plant
Unit No. 1

OCT 3 1985

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OCT 3 1985

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(AMENDMENT NO. 8 - CALLAWAY)

DATED: OCT 3 1985

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

UNION ELECTRIC COMPANY

DOCKET NO. 50-483

CALLAWAY PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 8
License No. NPF-30

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Union Electric Company (the licensee), dated July 10, 1985, as supplemented by letter dated August 9, 1985, 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 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. 8, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. UE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

(5)

Paul W. O'Connor, Acting Branch Chief
Licensing Branch No. 1
Division of Licensing

Attachment:
Change to the Technical
Specifications

Date of Issuance: **OCT 3** 1985

* SEE PREVIOUS CONCURRENCES

LB#1:DL
*TAlexion:kab
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ATTACHMENT TO LICENSE AMENDMENT NO. 8

OPERATING LICENSE NO. NPF-30

DOCKET NO. STN 50-483

Revise Appendix A, as follows:

REMOVE

3/4 3-10
3/4 3-12
3/4 3-33
3/4 3-34
3/4 3-37
3/4 5-5
3/4 6-13
3/4 6-17
3/4 7-11
3/4 7-12
3/4 8-4
3/4 8-10

INSERT

3/4 3-10
3/4 3-12
3/4 3-33
3/4 3-34
3/4 3-37
3/4 5-5
3/4 6-13
3/4 6-17
3/4 7-11
3/4 7-12
3/4 8-4
3/4 8-10

TABLE 4.3-1 (Continued)

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>
13. Steam Generator Water Level-Low-Low	S	R	M	N.A.	N.A.	1, 2
14. Undervoltage - Reactor Coolant Pumps	N.A.	R	N.A.	M	N.A.	1
15. Underfrequency - Reactor Coolant Pumps	N.A.	R	N.A.	M	N.A.	1
16. Turbine Trip						
a. Low Fluid Oil Pressure	N.A.	R	N.A.	S/U(1, 10)	N.A.	1
b. Turbine Stop Valve Closure	N.A.	R	N.A.	S/U(1, 10)	N.A.	1
17. Safety Injection Input from ESF	N.A.	N.A.	N.A.	R#	N.A.	1, 2
18. Reactor Trip System Interlocks						
a. Intermediate Range Neutron Flux, P-6	N.A.	R(4)	M	N.A.	N.A.	2##
b. Low Power Reactor Trips Block, P-7	N.A.	R(4)	M(8)	N.A.	N.A.	1
c. Power Range Neutron Flux, P-8	N.A.	R(4)	M(8)	N.A.	N.A.	1
d. Power Range Neutron Flux, P-9	N.A.	R(4)	M(8)	N.A.	N.A.	1

CALLAWAY - UNIT 1

3/4 3-10

Amendment No. 3

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 7 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.
- (8) With power greater than or equal to the interlock Setpoint the required ANALOG CHANNEL OPERATIONAL TEST shall consist of verifying that the interlock is in the required state by observing the permissive annunciator window.
- (9) Monthly 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. Monthly 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) At least once per 18 months and 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.
- (13) CHANNEL CALIBRATION shall include the RTD bypass loops flow rate.

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

CALLAWAY - UNIT	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
	1. Safety Injection (Reactor Trip, Phase "A" Isolation, Feedwater Isolation, Turbine Trip, Component Cooling Water, Auxiliary Feedwater-Motor-Driven Pump, Emergency Diesel Generator Operation, Containment Cooling, and Essential Service Water Operation)								
3/4 3-33	a. Manual Initiation	N.A.	N.A.	N.A.	R#	N.A.	N.A.	N.A.	1, 2, 3, 4
	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. Containment Pressure-High-1	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
	d. Pressurizer Pressure-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
	e. Steam Line Pressure-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
	2. Containment Spray								
Amendment No. 8	a. Manual Initiation	N.A.	N.A.	N.A.	R#	N.A.	N.A.	N.A.	1, 2, 3, 4
	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. Containment Pressure-High-3	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	<u>SURVEILLANCE REQUIREMENTS</u>								MODES FOR WHICH SURVEILLANCE IS REQUIRED
	<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>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>		
3. Containment Isolation									
a. Phase "A" Isolation									
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.		1, 2, 3, 4
2) 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
3) Safety Injection			See Item 1. above for all Safety Injection Surveillance Requirements.						
b. Phase "B" Isolation									
1) Manual Initiation	N.A.	N.A.	N.A.	R#	N.A.	N.A.	N.A.		1, 2, 3, 4
2) Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q		1, 2, 3, 4
3) Containment Pressure-High-3	S	R	M	N.A.	N.A.	N.A.	N.A.		1, 2, 3
c. Containment Purge Isolation									
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.		1, 2, 3, 4
2) 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
3) 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, 4
4) Phase "A" Isolation			See Item 3.a. above for all Phase "A" Isolation Surveillance Requirements.						

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	SURVEILLANCE REQUIREMENTS		ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
			ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST				
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. Solid-State Load Sequencer	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	1, 2, 3, 4
11. Engineered Safety Features Actuation System Interlocks								
a. Pressurizer Pressure, P-11	N.A.	R	M	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.
- # 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.

CALLAWAY - UNIT 1

3/4 3-37

Amendment No. 8

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 2) A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.
- e. At least once per 18 months, during shutdown, by:
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position on a Safety Injection test signal and/or on Automatic Switchover to Containment Sump from RWST Level-Low-Low coincident with Safety Injection test signal; and
 - 2)# Verifying that each of the following pumps start automatically upon receipt of a Safety Injection actuation test signal:
 - a) Centrifugal charging pump,
 - b) Safety Injection pump, and
 - c) RHR pump.
- f. By verifying that each of the following pumps develops the required differential pressure on recirculation flow when tested pursuant to Specification 4.0.5:
 - 1) Centrifugal charging pump \geq 2400 psid,
 - 2) Safety Injection pump \geq 1445 psid, and
 - 3) RHR pump \geq 165 psid.
- g. By verifying the correct position of each mechanical position stop for the following ECCS throttle valves:
 - 1) Within 4 hours following completion of each valve stroking operation or maintenance on the valve when the ECCS subsystems are required to be OPERABLE, and
 - 2) At least once per 18 months.

<u>HPSI System</u>		<u>CVCS System</u>
<u>Valve Numbers</u>		<u>Valve Numbers</u>
EMV095	EMV109	BGV-198
EMV096	EMV110	BGV-199
EMV097	EMV089	BGV-200
EMV098	EMV090	BGV-201
EMV107	EMV091	BGV-202
EMV108	EMV092	

#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.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent Containment Spray Systems shall be OPERABLE with each Containment Spray System capable of taking suction from the RWST and transferring suction to the containment sump.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one Containment Spray System inoperable, restore the inoperable Containment Spray System to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Containment Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;
- b. By verifying, that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 250 psig when tested pursuant to Specification 4.0.5;
- c. At least once per 18 months during shutdown, by:
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure-High-3 (CSAS) test signal, and
 - 2)# Verifying that each spray pump starts automatically on a Containment Pressure-High-3 (CSAS) test signal.
- d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

#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.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each containment isolation valve specified in Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a.# Verifying that on a Phase "A" Isolation test signal, each Phase "A" isolation valve actuates to its isolation position,
- b.# Verifying that on a Phase "B" Isolation test signal, each Phase "B" isolation valve actuates to its isolation position, and
- c. Verifying that on a Containment Purge Isolation test signal, each purge supply and exhaust isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power operated or automatic valve of Table 3.6-1 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

#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.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least two independent component cooling water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 At least two component cooling water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position. In addition, an ANALOG CHANNEL OPERATIONAL TEST of the surge tank level and flow instrumentation which provide automatic isolation of the non-nuclear safety-related portion of the system shall be performed at least once per 31 days;
- b. At least once per 18 months during shutdown, by verifying that:
 - 1) Each automatic valve servicing safety-related equipment or isolating the non-nuclear safety-related portion of the system actuates to its correct position on a Safety Injection and on a simulated High Flow and Low Surge Tank Level test signal, and
 - 2)# Each OPERABLE Component Cooling Water System pump starts automatically on a Safety Injection and Loss-of-Power test signal.
- c. At least once per 18 months during shutdown, by performing a CHANNEL CALIBRATION of the surge tank level and flow instrumentation which provide automatic isolation of the non-nuclear safety-related portion of the system.

#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.

PLANT SYSTEMS

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4 At least two independent essential service water (ESW) loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only one ESW loop OPERABLE, restore at least two ESW loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.4 At least two ESW loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position. In addition, at least once per 31 days, an ANALOG CHANNEL OPERATIONAL TEST of the differential pressure instrumentation for automatic isolation of the ESW to the air compressors shall be performed;
- b. At least once per 18 months during shutdown, by verifying that:
 - 1) Each automatic valve servicing safety-related equipment or isolating the non-nuclear safety-related portion of the system actuates to its correct position on a Loss-of-Power or Safety Injection test signal and on a simulated High Differential Pressure test signal; and
 - 2)# Each ESW System pump starts automatically on a Safety Injection, Low Suction Pressure (AFW pumps) and Loss-of-Power test signal.
- c. At least once per 18 months during shutdown, by performing a CHANNEL CALIBRATION of the differential pressure instrumentation for automatic isolation of the ESW to the air compressors.

#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.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a) An API Gravity of within 0.3 degrees at 60°F, or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate, or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89, or an API gravity of greater than or equal to 27 degrees but less than or equal to 39 degrees;
 - b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification;
 - c) A flash point equal to or greater than 125°F; and
 - d) A clear and bright appearance with proper color when tested in accordance with ASTM-D4176-82.
- 2) By verifying within 30 days of obtaining the sample that the other properties specified in Table 1 of ASTM-D975-81 are met when tested in accordance with ASTM-D975-81 except that the analysis for sulfur may be performed in accordance with ASTM-D1552-79 or ASTM-D2622-82.
- e. At least once every 31 days by obtaining a sample of fuel oil in accordance with ASTM-D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM-D2276-78, Method A;
- f.# At least once per 18 months, during shutdown, by:
- 1) Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service;
 - 2) Verifying the diesel generator capability to reject a load of greater than or equal to 1352 kW (ESW pump) while maintaining voltage at 4000 ± 320 volts and frequency at 60 ± 5.4 Hz;
 - 3) Verifying the diesel generator capability to reject a load of 6201 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection;
 - 4) Simulating a loss-of-offsite power by itself, and:
 - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 12 seconds, energizes the auto-connected shutdown loads through the shutdown sequencer and operates for greater than or equal to 5 minutes while its generator

#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.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts, by verifying that:
 - 1) The parameters in Table 4.8-2 meet the Category B limits,
 - 2) There is no visible corrosion at either terminals or connectors, or the cell-to-cell and terminal connection resistance of these items is less than 150×10^{-6} ohm, and
 - 3) The average electrolyte temperature of at least every sixth cell is above 60°F.
- c. At least once per 18 months by verifying that:
 - 1) The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,
 - 2) The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,
 - 3) The resistance of each cell-to-cell and terminal connection is less than or equal to 150×10^{-6} ohm, and
 - 4) The battery charger will supply at least 300 amperes at 130.2 volts for at least 1 hour.
- d.# At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status simulated emergency loads for the design duty cycle when the battery is subject to a battery service test;
- e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60 month interval this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1d.; and
- f. At least once per 18 months during shutdown, by giving performance discharge tests of battery capacity to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

#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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 8 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. STN 50-483

1.0 INTRODUCTION

By letter dated July 10, 1985, as supplemented by letter dated August 9, 1985, Union Electric Company (the licensee) requested an amendment to Facility Operating License No. NPF-30 for operation of the Callaway Plant in Callaway County, Missouri.

The amendment approves modifications to Pages 3/4 3-10, 3-12, 3-33, 3-34, 3-37, 5-5, 6-13, 6-17, 7-11, 7-12, 8-4, and 8-10 of the Callaway Technical Specifications (TS). The amendment extends the initial 18-month surveillance interval for various surveillance tests until prior to startup following the first refueling outage or June 1, 1986, whichever occurs first. The first refueling outage is the next scheduled shutdown and is currently scheduled to begin in April 1986. This request entails an approximate six-month extension in the most limiting case. The affected surveillance intervals include manual initiations of the reactor trip system and engineered safety features actuation system (ESFAS), portions of diesel generator testing, ESFAS actuations on safety injection and loss of offsite power, containment spray actuation testing, Phase A and B containment isolations, and a Class 1E battery service test.

Normally, since refueling outages occur about every 18-months, extensions beyond the 18-month surveillance interval required by the technical specifications for these items are usually not necessary. However, due to the extended length of the plant startup program and Cycle 1, the licensee must either request an extension or be forced to shutdown prior to the first refueling outage.

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2.0 EVALUATION

A. Manual Initiations of the Reactor Trip System and Engineered Safety Features Actuation System (ESFAS), ESFAS Actuations on Safety Injection and Loss of Offsite Power, Containment Spray Actuation Testing, and Phase A and B Containment Isolations

General Design Criterion (GDC)-21 of Appendix A to 10 CFR Part 50, "Protection System Reliability and Testability," requires that protection systems be designed to permit periodic testing during reactor operation. The licensing basis for Callaway Unit 1 related to GDC-21, as described in Section 7 of the plant's Final Safety Analysis Report (FSAR), is a method of periodic, overlapping tests of individual portions of the protection systems. These tests, incorporated into the plant's TS, encompass in a piecemeal fashion all equipment and interfaces from sensors through final actuated equipment for each of the plant's protective systems. In addition, inservice testing based on ASME Code, Section XI, requires periodic operability testing of valves and pumps. The only protection system equipment not periodically tested by these two means are those (identified in Section 7 of the plant's FSAR) which would cause plant upset or equipment damage.

The specific tests for which the licensee has requested surveillance interval extensions are whole system operational tests conducted every 18-months during plant shutdown. Since operability of most of the individual components in those systems (for which the extensions are requested) is proven on a periodic basis (monthly or quarterly), the staff believes, based on the overlapping test method utilized, that sufficient proof of system functional capability is provided by the individual component tests to allow the requested surveillance interval extensions.

Further, system design features such as redundancy and diversity, including manual initiation of the systems and their individual components, provide alternate means to ensure protection system operability should an undetectable failure occur during the extended surveillance intervals. Accordingly, the staff finds that the one-time extension of the surveillance intervals for the above tests are acceptable and that the provisions of TS 4.0.2 are reset from performance of the next surveillance.

B. Portions of Diesel Generator Testing and a Class 1E Battery Service Test

Each diesel generator is tested (at least once a month) at intervals determined by the number of failures in the last 100 valid tests as required by the TS. In addition, each diesel generator is tested every 18 months during shutdown. The diesel generator unit design and other operational features are extensively tested to ensure

their operability by timely failure detection and subsequent repair. This includes one of the design features which requires the diesel generator to make fast starts and automatically load from ambient conditions in the case of a large loss of coolant accident (LOCA) with loss of offsite power (LOOP).

Considering the following facts:

1. Each diesel generator is tested at least monthly to demonstrate its operability and capability to assume load;
2. The current test frequency of Callaway is once a month as there have been no diesel generator failures;
3. The unit is more susceptible to transients when changing the operational modes (such as would be required to perform the subject testing) than while operating in a steady state condition;
4. Unless there is a large break LOCA with LOOP, fast starting of a diesel generator is not actually necessary to prevent severe core damage since emergency AC power is not needed for many minutes after initial event, thus manual actuation is possible;
5. The chance of occurrence of an automatic diesel generator actuation as a result of an accident, i.e., large LOCA (10^{-4} /RY) followed by LOOP (10^{-3}), for the duration of the six-month period proposed is insignificant ($\frac{1}{2} \times 10^{-7}$ /RY).

The staff finds that the one-time extension of the surveillance interval for portions of diesel generator testing is acceptable and that the provisions of TS 4.0.2 are reset from performance of the next surveillance.

The battery service test in question is a specific battery capacity test which demonstrates if the battery will meet the design requirements of the DC system. It is performed as part of the preoperational and periodic DC system tests every 18 months or whenever there is any DC system change. Although it is possible to perform this test during plant operation, it would take the battery out of service much longer than the two hours which is permitted under the existing TS (during plant operation) and is therefore, undesirable. It is for this reason that such tests as the service test and performance discharge tests should be performed during shutdown. The licensee stated that those two tests were performed in conjunction with the preoperational test on February 9, 1984. They found that the battery capacities were approximately 10% above the acceptance criteria. In view of the fact that their batteries are relatively new, no substantial loads have been added to the batteries, and each battery has been tested weekly and quarterly for electrolyte level, float voltage, specific gravity, terminal voltage and terminal corrosion, the licensee contends that the performance of the above surveillance provides a means of identifying

potential failures such as no output or inadequate output due to sudden degradation. Therefore, they conclude that the probability of an undetected inoperable battery is considered minimal for the duration of the extended surveillance interval. The staff concurs with the licensee and finds that the one-time extension of the surveillance interval for this battery service test is acceptable and that the provisions of TS 4.0.2 are reset from performance of the next surveillance.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in 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 change in the types or significant increase in the amounts 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. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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.

4.0 CONCLUSION

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.

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Dated: **OCT 3 1985**