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

OMAHA PUBLIC POWER DISTRICT

DOCKET NO. 50-285

FORT CALHOUN STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 41
License No. DPR-40

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Omaha Public Power District (the licensee) dated August 30, 1978, 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 3.B. of Facility Operating License No. DPR-40 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 41, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid, Chief
Operating Reactors Branch # 4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 27, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 41

FACILITY OPERATING LICENSE NO. DPR-40

DOCKET NO. 50-285

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Pages

2

2-64

2-64a (new)

2-68

3-12

3-12a (new)

3-20d

3-58

DEFINITIONS

REACTOR OPERATING CONDITIONS (Continued)

Cold Shutdown Condition (Operating Mode 4)

The reactor coolant T_{cold} is less than 210°F and the reactor coolant is at shutdown boron concentration.

Refueling Shutdown Condition (Operating Mode 5)

The reactor coolant is at refueling boron concentration and T_{cold} is less than 210°F.

Refueling Operation

Any operation involving the shuffling, removal, or replacement of nuclear fuel, CEA's, or startup sources.

The Refueling Boron Concentration

The boron concentration of coolant corresponding to a shutdown margin of at least 5% with all CEA's withdrawn.

Shutdown Boron Concentration

The boron concentration required to make the reactor subcritical by the amount defined in paragraph 2.10.

Refueling Outage or Refueling Shutdown

A plant outage or shutdown to perform refueling operations upon reaching the planned fuel depletion for a specific core.

Plant Operating Cycle

The time period from a Refueling Shutdown to the next Refueling Shutdown.

Amendment No. 41

TABLE 2-1

Engineered Safety Features System Initiation Instrument Setting Limits

Functional Unit	Channel	Setting Limit
1. High Containment Pressure	a. Safety Injection b. Containment Spray(3) c. Containment Isolation d. Containment Air Cooler DBA Mode	≤ 5 psig
2. Pressurizer Low/Low Pressure	a. Safety Injection b. Containment Spray(3) c. Containment Isolation d. Containment Air Cooler DBA Mode	≥ 1600 psia(1)
3. Containment High Radiation	Containment Ventilation Isolation(4)	≤ RM-050, 9.6×10^{-2} μci/sec ≤ RM-051, 1.5×10^{-3} μci/cc ≤ RM-060, 9.6×10^{-2} μci/sec ≤ RM-061, 9.6×10^{-2} μci/sec ≤ RM-062, 1.5×10^{-3} μci/cc
4. Low Steam Generator Pressure	Steam Line Isolation	≥ 500 psia(2)
5. SIRW Low Level Switches	Recirculation Actuation	16 inches +0, -2 in. above tank bottom
6. 4.16 KV Emergency Bus Low Voltage	a. Loss of Voltage	(2995.2 + 104) volts - 20.8 ≤ 5.9(5) seconds } Trip
	b. Degraded Voltage i) Bus 1A3 Side	≥ 3825.52 volts (5.8 ± .5) seconds } Trip

12-9

TABLE 2-1 (Continued)

Engineered Safety Features System Initiation Instrument Setting Limits

Functional Unit	Channel	Setting Limit	
6. (Continued)	b. (Continued) ii) Bus 1A4 Side	≥ 3724.08 volts (4.8 ± .5) seconds	} Trip

(1) May be bypassed below 1700 psia and is automatically reinstated above 1700 psia.
(2) May be bypassed below 550 psia and is automatically reinstated above 550 psia.
(3) Simultaneous high containment pressure and pressurizer low/low pressure.
(4) RM-050 and RM-051 may be inoperable or out of service with respect to containment monitoring, provided that the containment ventilation isolation valves are closed. RM-061 and RM-062 may be inoperable, provided that RM-050 and RM-051 are monitoring the ventilation stack. RM-060 may be inoperable, provided that (1) iodine samples are taken from the ventilation stack and analyzed each eight hours and (2) gas decay tank releases are not made.
(5) Applicable for bus voltage ≤ 2995.2 - 20.8 volts only. (For voltage ≥ (2995.2 - 20.8) volts, time delay shall be > 5.9 seconds.)

TABLE 2-3

Instrument Operating Requirements for Engineered Safety Features

No.	Functional Unit		Minimum Operable Channels	Minimum Degree of Redundancy	Permissible Bypass Conditions
1	Safety Injection				
A	Manual		1	None	None
B	High Containment Pressure	A	2(a)(d)	1	During Leak Test
		B	2(a)(d)		
C	Pressurizer Low/Low Pressure	A	2(a)(d)	1	Reactor Coolant Pressure Less Than 1700 psia(b)
		B	2(a)(d)	1	
2	Containment Spray				
A	Manual		1	None	None
B	High Containment Pressure	A	2(a)(c)(d)	1	During Leak Test
		B	2(a)(c)(d)	1	
C	Pressurizer Low/Low	A	2(a)(c)(d)	1	Reactor Coolant Pressure Less Than 1700 psia(b)
		B	2(a)(c)(d)	1	
3	Recirculation				
A	Manual		1	None	None
B	SIRW Tank Low Level	A	2(a)(d)	1	None
		B	2(a)(d)	1	
4	Emergency Off-Site Power Trip				
A	Manual		1(e)	None	None
B	Emergency Bus Low Voltage (Each Bus) - Loss of voltage		2(d)	1	Reactor Coolant Temperature Less Than 300°F
	- Degraded voltage		2(a)(d)	1	

a A and B actuation circuits each have 4 channels.

b Auto removal of bypass above 1700 psia.

c Coincident high containment pressure and pressurizer low/low pressure signals required for initiation of containment spray.

d One of the inoperable channels must be in the tripped condition.

e Control switch on incoming breaker.

TABLE 3-2 (Continued)

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS

	Channel Description	Surveillance Function	Frequency	Surveillance Method
18.	SIRW Tank Temperature Indication & Alarms	a. Check	D	a. Compare two independent temperature readings.
		b. Test	M	b. Measure temperature of SIRW tank with standard laboratory instruments.
19.	Recirculation Actuation Switches	a. Test	R	a. Manual initiation.
20.	Recirculation Actuation Logic	a. Test	M	a. Part of test 3(a) using built-in testing systems to initiate STLS.
		b. Test	R	b. Complete automatic test initiated sensor operation.
21.	4.16 KV Emergency Bus Low Voltage (Loss of Voltage and Degraded Voltage)	a. Check	S	a. Verify voltage readings are above alarm initiation on degraded voltage level - supervisory lights "on".
		b. Test	M	b. Undervoltage relay operation simulated one circuit at a time.
		c. Calibrate	R	c. Known voltage applied to sensors and circuit breaker trip actuation logic verified.

Notes: (1) Not required unless pressurizer pressure is above 1700 psia.

(2) Not required unless steam generator pressure is above 550 psia.

TABLE 3-2 (Continued)

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS

S - Each Shift
D - Daily
M - Monthly
Q - Quarterly
R - 18 Months
P - Prior to Each Start-Up if Not Done Previous Week

TABLE 3-5
(Continued)

	Test		Frequency	FSAR Section Reference
10c.	(Continued)	4. Automatic and/or Manual initiation of the system shall be demonstrated.	At least once per plant operating cycle.	
11.	Containment Cooling and Iodine Removal Fuseable Linked Dampers	1. Demonstrate damper action. 2. Test a spare fuseable link.	1 year, 2 years, 5 years, and every 5 years thereafter	9.10
12.	Fuel Elements	Visually inspect fuel elements removed from the reactor.	During each refueling outage	3
13.	Diesel Generator Under-Voltage Relays	Calibrate	During each refueling outage	8.4.3
14.	Motor Operated Safety Injection Loop Valve Motor Starters (HCV-311, 314, 317, 320, 327, 329, 331; 334, 372, 315, 318, 321)	Verify the contactor pickup value at ≤85% of 460 V.	During each refueling outage	

3.0 SURVEILLANCE REQUIREMENTS

3.7 Emergency Power System Periodic Tests

Applicability

Applies to periodic testing and surveillance requirements of the emergency power system.

Objective

To verify that the emergency power system will respond promptly and properly when required.

Specifications

The following tests and surveillance shall be performed as stated:

(1) Diesel Generators

a. Each diesel engine shall be started once a month and demonstrated to be ready for loading within 10 seconds (i.e., the diesels shall be tested alternately at two week intervals, not both together). The signal initiated to start the diesel shall be varied from one test to another to verify all manual and auto start circuits. This test shall cover all local and remote controls for both normal and emergency manual conditions.(1)

b. Each diesel shall be manually started (normal start) with all protective devices operable, in preparation for loading onto the bus, once a month. With the diesel running at rated speed and voltage, the generator shall be synchronized with the 4.16 KV bus and the diesel breaker manually closed from the electrical control board. The generator shall then be loaded to nameplate rating and allowed to run for 15 minutes before being off-loaded and the diesel breaker tripped.

c. Tests shall be conducted during each refueling outage to demonstrate the satisfactory overall automatic operation of each diesel system. This test shall be initiated by the simulated simultaneous loss of 4.16 KV supplies to bus 1A3 (1A4) and a simulated auto start signal. Proper operation will be verified by observation of (1) de-energization of bus 1A3 (1A4) and load shedding from bus (both 4160 V and 480 V), (2) diesel automatic start, energization of bus 1A3 (1A4), automatic sequence start of emergency load and operation for ≥ 5 minutes while its generator is loaded with the emergency loads. Manual control of diesel generators and breakers shall also be verified during refueling shutdowns.

d. Each diesel generator shall be given a thorough inspection at least annually following the manufacturer's recommendations for this class of standby service. The above tests will be