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

CONSUMERS POWER COMPANY

DOCKET NO. 50-155

BIG ROCK POINT PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 78
License No. DPR-6

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

   A. The application for amendment by Consumers Power Company (the licensee) dated November 14, 1984, as revised on January 17, 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 Facility Operating License No. DPR-6 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 78, 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

John A. Zwolinski, Chief
Operating Reactors Branch #5
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 2, 1985.

ATTACHMENT TO LICENSE AMENDMENT NO. 78

FACILITY OPERATING LICENSE NO. DPR-6

DOCKET NO. 50-155

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

REMOVE	INSERT
1-2a	1-2a
3-3	3-3
3-4	3-4
3-4a	-
3-5	3-5
4-6	4-6
11-2	11-2
11-7	11-7*
11-8	11-8
11-14	11-14

* Page issued to maintain document completeness.

1.2.8 OPERABLE - OPERABILITY - a system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that is required for the system, subsystem, train, component or device to perform its safety function(s) are also capable of performing their related support function(s).

1.2.9 CHANNEL CALIBRATION - adjustments, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The channel calibration shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the Channel Functional Test. The channel calibration may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated.

1.2.10 CHANNEL CHECK - the qualitative assessment of channel behavior during operation by observation. The determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrumentation channels measuring the same parameter.

1.2.11 CHANNEL FUNCTIONAL TEST

a. Analog Channels - the injection of a signal into the channel as close to the sensor as practicable to verify operability including alarm and/or trip functions.

b. Bistable Channels - the injection of a signal into the sensor to verify operability including alarm and/or trip functions.

1.2.12 SOURCE CHECK - the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

1.2.13 MEMBERS OF THE PUBLIC - includes all persons who are not occupationally associated with the plant.

3.4.2 (Contd)

closes automatically whenever necessary to prevent outward flow in the event of an accident. Except for check valves, both valves shall be capable of being closed by manual initiation from either the control room or from other stations that would be tenable after an accident.

(c) Lines open to the reactor vessel or any portion of the reactor recirculation loop are treated in the manner described in the previous paragraph, with the added feature that the two valves shall be on opposite sides of the shell of the containment sphere.

(d) Lines normally closed have only a single valve. A lock, interlock, or operating rules shall insure that this valve is closed whenever containment integrity is required.

(e) Certain lines enter and leave the containment sphere without any openings to the containment sphere free volume. Others leave and return to the containment sphere without any openings to the atmosphere. Such lines shall not require isolation valves, provided the lines are not in danger of being broken as a result of a reactor system rupture.

(f) The two 24-inch ventilation openings, one for supply and one for exhaust, shall be designed to close within six seconds after any scram signal or on high radiation at either of two area monitors in the fuel storage area. In order to prevent the possibility of excessive external pressure on the containment sphere due to atmospheric changes or other causes, the two valves in the ventilation supply line and the two valves in the ventilation exhaust line shall automatically open whenever the differential pressure exceeds 1 psid, overriding all other signals. The valves shall reclose when the internal pressure is still slightly below atmospheric.

3.4.3 Operating Requirements

(a) Normally open lines, carrying fluids out of the containment sphere, shall be closed automatically upon a signal indicating high containment sphere pressure or low-water level in the reactor vessel. These automatic isolation valves shall also close upon instrument air or power failure, and upon manual trip from the control room.

(b) Normally open lines, carrying fluids into the containment sphere, shall be equipped with check valves to prevent backflow upon loss of inward propellent force. In addition, these lines shall be capable of being secured by manually-operated gate valves or by air-operated control valves. The latter shall close upon air or power failure, with exception

3.4.3 (Contd)

of the supply line to the control rod drive hydraulic system. Valves in this control rod hydraulic system line shall open to insure continuous water supply, and backup isolation shall be provided by two check valves in the common suction line to the control rod drive pumps.

(c) Closing times on motor-operated isolation valves shall be as follows:

Description	Closing Time (Seconds)
Main Steam (MO-7050)	60
Main Steam Drain (MO-7065)	60

(d) If both vacuum relief paths described in Section 3.4.2(f) become inoperable during power operation, the plant shall be brought to shutdown condition within 12 hours and to the cold shutdown condition within the following 24 hours. If one vacuum relief path becomes inoperable and cannot be restored to operable status within 72 hours, the plant shall be brought to shutdown condition within the following 12 hours, and to the cold shutdown condition within the following 24 hours.

3.5 POST-INCIDENT SPRAY SYSTEM

Containment effectiveness shall be supplemented by a containment sphere post-incident spray system in the event of an accident involving loss of coolant from a primary system rupture.

3.5.1 Design Features Shall Be as Follows:

(a)	Number of Sets of Spray Nozzles	2
(b)	Capacity of Spray Sets at 100 Psid Nozzle Pressure	
	(i) Primary Spray Set, Gal/Min	146
	(ii) Secondary Spray Set, Gal/Min	233
(c)	System Actuation	
	(i) Primary Spray Set	Automatic DC Operated
	(ii) Secondary Spray Set	Remote Manual AC Operated
(d)	Signal Used to Actuate	High Containment Sphere Pressure
(e)	Signal Trip Setting	≤ 2.2 Psig
(f)	Reserve Water Supply	Lake Michigan

3.5.2 Operating Requirements

(a) Deleted

(b) Water addition to the containment sphere must be manually stopped before the accumulated water level reaches an elevation of 596 feet.

(c) Deleted

3.6 CONTAINMENT REQUIREMENTS

Containment sphere integrity shall be maintained during power operation, refueling operation, shutdown and cold shutdown conditions except as specified by a system of procedures and controls to be established for occasions containment must be breached during cold shutdown. If containment integrity cannot be maintained, the plant shall be brought to the shutdown condition within 12 hours, and to the cold shutdown condition within the following 24 hours.

3.7 CONTAINMENT SPHERE LEAKAGE TESTING

For the purpose of this specification, leakage rate is defined as the percent of the contained atmosphere (weight basis) which escapes per day (24 hrs) under the defined pressure conditions through any leaks in the containment boundary and all isolation valves and their associated piping.

The maximum allowable integrated leakage rate shall not exceed 0.5%/day of the containment atmosphere (weight basis) at the design pressure of 27 psig. The procedure for containment sphere leakage testing shall be:

(a) At least once every 6 months, the personnel lock, the equipment lock and the sphere supply-and-exhaust ventilation valves shall be pressurized, with air to 20 psig, to test their leak tight-

Minimum Time to Put System in Full Operation Following Signal, Seconds	30

Core Spray System:

Type	Sparger Ring With Spray Nozzle
Capacity of Sprays, Gpm	400
Nozzle Pressure, Psia	115

Backup Core Spray System:

Type	Sparger Nozzle Centered Over Core
Capacity of Sparger, Gpm	470
Nozzle Pressure, Psia	115

Core Spray System Recirculation:

Number Pumps	2
Number Heat Exchanger	1
Heat Removal Capacity, Btu/h @ 28.4°F Log Mean Temperature Difference	8×10^6

(b) Operating Requirements

A minimum of one reactor recirculating loop shall be used during all reactor power operations (ie, recirculating pump suction valve and 20" discharge valve shall remain open and pump shall be running). The maximum operating pressure and temperature shall be the same as the reactor vessel. The controlled rate of change of temperature in the reactor vessel shall be limited to 100°F per hour. All other components in the system shall be capable of following this temperature change rate. The safety relief valves shall be set appropriately for all planned reactor operating pressures so that the allowable pressure of 1870 psia (1700 plus 10%) in the nuclear steam supply system is not exceeded. At least three (3) steam drum safety valve position monitors shall be operable during power operation. Also, one of every two (2) adjacent monitors oriented in each north-south plane shall be operable. In the event that any of these monitoring channels become inoperable, they shall be made operable prior to startup following the next cold shutdown. The emergency condenser shall be operable and ready for service at all times during power operation. However, should one emergency condenser tube bundle develop a leak during power operation, it will be permissible to isolate the leaking tube bundle until the next outage. Both bundles of the emergency condenser shall be available for service during cold to hot plant heatup for power production. If both emergency condenser loops become inoperable the plant shall be brought to shutdown condition within 12 hours and to cold shutdown condition within the following 24 hours. The shutdown cooling system shall be ready for service during power operations with the 480 volt circuit breakers for isolation valves MO-7056, MO-7057, MO-7058, and MO-7059 checked "open" when reactor pressure is above 300 psig. The shutdown cooling system shall be operable and ready for service during refueling operations and the breakers for MO-7070 and MO-7071 shall be tagged "open". The primary coolant shall be sampled and analyzed daily during periods of power operation. The following are absolute limits which if exceeded shall necessitate reactor shutdown. Corrective action will necessarily be taken at more stringent limits to minimize the possibility of these absolute limits ever being reached.

Limiting Condition for Operation	Surveillance Requirement

11.3.1.4 EMERGENCY CORE COOLING SYSTEM (Contd)

D. Both fire pumps (electric and diesel) and the piping system to the core spray systems tie-ins shall be operable whenever the plant is in a power operation condition and refueling.

E. If Specifications A, B, C, and D are not met, a normal orderly shutdown shall be initiated within 24 hours and the reactor shall be shut down as described in Section 1.2.5(a) within twelve (12) hours and shut down as described in Section 1.2.5(a) and (b) within the following 24 hours. No work shall be performed on the reactor or its connected systems when irradiated fuel is in the reactor vessel which could result in lowering the reactor water level below elevation 610' 5".

F. If both core spray systems become inoperable, the plant shall be brought to shutdown condition within 12 hours and to the cold shutdown condition within the following 24 hours.

G. Instrument set points shall be as specified in Table 11.3.1.

11.4.1.4 EMERGENCY CORE COOLING SYSTEM (Contd)

B. At each major refueling outage, the following shall be performed:

Calibration of core spray system actuation and pressure and flow instrumentation.

Verify that the two core spray system containment isolation check valves are not stuck shut.

Calibration of fire system basket strainer differential pressure switches.

Operability check of the core spray recirculation system through the test tank flow path. During the core spray recirculation system operability check reduce any leakage to as low as practical from components outside containment prior to returning system to service.

Verify manual and automatic actuation of the core spray system valves MO-7051, -7061, -7070, and -7071 with water flow normally blocked.

Verify manual actuation of MO-7066.

Verify that the hose used for backup cooling water to the core spray recirculation heat exchanger is operable and free of obvious defects.

Perform a leak check and flow check of the backup cooling water hose when connected between the screen house fire water connection and the core spray recirculation heat exchanger.

C. Instruments shall be checked, tested, and calibrated at least as frequently as listed in Table 11.4.1.4(a).

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(NOTE: This is the new format of the Specifications to be issued in the future. Therefore, the numbering system may conflict with existing sections. Both are still applicable.)

Limiting Conditions for Operation	Surveillance Requirement

3.1.5 REACTOR DEPRESSURIZATION SYSTEM

Applicability:

Applies to the operating status of the Reactor Depressurization System (RDS) and the attached mechanical snubbers.

Objective:

To assure the operability of the RDS and when working in conjunction with the emergency core cooling system to allow cooling of the reactor fuel in the event of a Loss of Coolant Accident.

Specification:

A. The RDS shall be operable at all power levels and when the reactor is critical with the head on or when in hot shutdown conditions.

B. The limiting conditions for operation of the instrumentation and actuating circuitry which initiates and controls the RDS are given in Table 3.5.2.h.

Action:

1. Should one depressurizing valve or isolation valve become inoperable in the closed position, the reactor may remain in operation for a period not to exceed seven (7) days. The remaining valves and

4.1.5 REACTOR DEPRESSURIZATION SYSTEM

Applicability:

Applies to periodic testing requirements for the RDS and the attached mechanical snubbers.

Objective:

To verify operability of the RDS.

Specification:

A. The isolation valves shall be test-operated at least once every three months.

B. The depressurizing valves shall be test-operated during each cold shutdown; however, in the case of frequent cold shutdowns, these valves need not be exercised more often than once every three months per Section IWV-3410 Summer 1973 Addenda of the ASME B&PV Code Section XI.

C. The instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.5.2.h.

Amendment No. 10, 56, 64, 78

Limiting Conditions for Operation	Surveillance Requirement

3.1.5 REACTOR DEPRESSURIZATION SYSTEM (Contd)

actuating circuitry shall be demonstrated to be operable within 4 hours and at least once each 72 hours until the system is restored to operable status.

2. Should one isolation valve or depressurizing valve become inoperable in the open position during power operation, the plant will be brought to the cold shutdown condition within 12 hours.

3. Only one RDS valve train, one input channel, one output channel and one UPS power supply may be out of service at any one time. If these components are not returned to operable status within seven (7) days, a normal orderly shutdown shall be initiated within one (1) hour and the reactor shall be shutdown as described in Section 1.2.5(a) within twelve (12) hours and shutdown as described in Section 1.2.5(a) and (b) within the following 24 hours.

4. If the RDS is declared inoperable because of a snubber defect and is not returned to an operable status within 72 hours, the plant shall be brought in a normal and orderly manner to a cold shutdown condition within 12 hours and be maintained in cold shutdown until RDS can be declared operable. If the plant is already in a cold shutdown condition, it shall not be started up until all snubbers are operable.

5. Should two or more RDS valve trains become inoperable the plant shall be brought to the shutdown condition within 12 hours and to the cold shutdown condition within the following 24 hours.

4.1.5 REACTOR DEPRESSURIZATION SYSTEM (contd)

D. System Logic shall also be functionally tested as indicated in Table 4.5.2.h.

E. Should one input or output channel fail, the remaining three channels shall be tested within 4 hours and at least once each 72 hours until the system is restored to normal.

F. The UPS battery surveillance is described in Section 11.4.5.3.

G. The RDS containment penetration assemblies seal pressure shall be examined at six-month intervals.

H. A visual inspection of 10% (2) of the thirteen mechanical snubbers on the RDS shall be performed at each refueling outage but not to exceed 18 months. Visual inspections shall be used to verify that there are no visible indications of damage or impaired operability to the snubbers or their attachments.

I. A functional test of 10% (2) of the thirteen mechanical snubbers on the RDS shall be performed at each refueling outage but not to exceed 18 months. Functional tests shall be used to verify that the force that initiates free movement of the snubber rod, in tension and compression, is less than the vendor specified maximum drag force. Activation restraining action shall be achieved within the vendor specified range of velocity or acceleration in both tension and compression.

Amendment No. 10, 64, 78

Limiting Conditions for Operation	Surveillance Requirement
11.3.3.4 CONTAINMENT SPRAY SYSTEM	11.4.3.4 CONTAINMENT SPRAY SYSTEM
Applicability:	Applicability:
Applies to the operating status of the containment spray system.	Applies to the testing of the containment spray system.
Objective:	Objective:
To assure the capability of the containment spray system to reduce containment pressure in the event of a Loss of Coolant Accident.	To verify the operability of the containment spray system.
Specification:	Specification:
A. During power operation, both of the two containment spray systems shall be operable.	A. Once each operating cycle, the following shall be performed: 1. Automatic actuation of the containment spray valve MO-7064 (with water flow manually blocked). 2. Calibration of flow instrumentation.
B. If Specification A is not met, a normal orderly shutdown shall be initiated within 24 hours and the reactor shall be shut down as described in Section 1.2.5(a) within 12 hours and shut down as described in Section 1.2.5(a) and (b) within the following 24 hours.	B. At least once every refueling outage, not to exceed eighteen (18) months, the following shall be performed prior to start-up. Verify operability of power-operated valves required for proper system actuation.
C. Operability of the fire water supply and recirculation systems is governed by Specification 11.3.1.4.	C. Surveillance of fire water supply and recirculation systems is governed by Specification 11.4.1.4.
D. If both containment spray systems become inoperable the plant shall be brought to shutdown condition within 12 hours and to the cold shutdown condition within the following 24 hours.	D. Instrument channels shall be tested and calibrated as listed in Table 11.4.3.4(a).
	E. (Deleted)

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