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

CONSUMERS POWER COMPANY

DOCKET NO. 50-155

BIG ROCK POINT NUCLEAR PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 28
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 March 26, 19[illegible], 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. 28 , 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

Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 26, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 28

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 include the captioned amendment number and contain vertical lines indicating the area of change.

PAGES

4-6
11-1
11-2
11-4
11-5

4.1.2 (Contd)

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 or its equivalent shall be used during all reactor power operations. 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. 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. 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

Change No. 26, 44,
Amendment No. 10, 15,

Limiting Conditions for Operation	Surveillance Requirement

11.3.1.h EMERGENCY CORE COOLING SYSTEM

Applicability:

Applies to the operating status of the emergency core cooling system.

Objective:

To assure the capability of the emergency core cooling system to cool reactor fuel in the event of a Loss of Coolant Accident.

Specification:

A. The two core spray systems (original and redundant) shall be operable whenever the plant is in a power operation condition. The original core spray system shall also be operable during refueling operations. The fire suppression system can be used for routine purposes without declaring the core spray system inoperable provided total flow drawn from the system is limited to 400 gpm and provided such routine uses do not exceed 30 hours/year. The fire suppression system can be used for fire fighting or for tests involving only flow through the fire suppression system relief valves without declaring the core spray system inoperable and without a flow and annual time restriction.

B. The core spray recirculation system shall be operable whenever the plant is in a power operation condition.

C. The core spray recirculation heat exchanger shall not be taken out of service during power operation for periods exceeding four (4) hours. The heat exchanger shall be considered inoperable and out of service if tube bundle leakage exceeds 0.2 gpm.

11.4.1.h EMERGENCY CORE COOLING SYSTEM

Applicability:

Applies to periodic testing requirements for the emergency core cooling systems.

Objective:

To verify operability of the emergency core cooling systems.

Specification:

A. Each month the following shall be performed:

Verify the operability of MO-7051, -7061, -7071 and -7066 by remote manual actuation.

Leak testing of the core spray heat exchanger.

Automatic actuation of both fire pumps.

Verify that valve MO-7069 is locked or sealed open position.

Verify that the fire system transformer deluge valve is shut and its upstream isolation valve is locked or sealed in the shut position.

Verify that the hose required for backup cooling water to the core spray recirculation heat exchanger is installed on a designated rack in the screenhouse.

Limiting Conditions for Operation	Surveillance Requirement
11.3.1.4 EMERGENCY CORE COOLING SYSTEM (Contd)	11.4.1.4 EMERGENCY CORE COOLING SYSTEM (Contd)
D. Both fire pumps (electric and diesel) and the piping system to the core spray system tie-ins shall be operable whenever the plant is in a power operation condition and refueling.	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 flow tank flow path. 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 screenhouse fire water connection and the core spray recirculation heat exchanger.
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".	C. Instruments shall be checked, tested and calibrated at least as frequently as listed in Table 11.4.1.4(a).
F. Deleted.	
G. Instrument set points shall be as specified in Table 11.3.1.	

Bases:

The core spray system consists of two automatically actuated independent double capacity piping headers capable of cooling reactor fuel for a range of Loss of Coolant Accidents. Either system by itself is capable of providing adequate cooling for postulated large breaks in all locations. When adequate depressurization rates are achieved in the postulated small-break situation, either core spray system provides adequate cooling. For the largest possible pipe break, a flow rate of approximately 400 gpm is required after about 20 seconds.

Each core spray system has 100% cooling capacity from each spray header and each pump set. Thus, specifying both systems to be fully operational will assure, to a high degree, core cooling if the core spray system is required. In addition, the primary core spray is required to be operable during refueling operations to provide fuel cooling in the unlikely event of an inadvertent draining of the reactor vessel. Water flow from the fire suppression system for fire suppression or for normal uses and testing for which the time and flow are restricted has a negligible effect on availability and is not a cause for declaring the systems inoperable.

The core spray systems receive their water supply from the plant fire system. The plant fire system supply is from Lake Michigan via two redundant 1,000 gpm fire pumps, one electric and one diesel driven. These pumps start automatically on decaying fire system pressure. If a passive failure of underground fire main piping should occur during the long-term cooling phase, the capability exists to bypass the affected portion of piping utilizing a fire hose to ensure the continuation of long-term ECCS cooling.

The core spray recirculation system is provided to prevent excessive water buildup in the containment sphere and to provide for long-term, post-accident cooling. The system consists of two pumps (400 gpm each) and a heat exchanger. The pumps take a suction from the lower levels of containment and discharge to the core spray headers. The system is actuated manually when the water level in the containment rises to elevation 587 feet. The 587-foot elevation will be achieved between 6 to 24 hours operation of one core spray and one containment spray system.

A test tank and appropriate valving is provided in the core spray recirculation system so the pump suction conditions and the flow characteristics of the system can be periodically tested.

One core spray recirculation pump has adequate capacity to provide fuel cooling at anytime following a Loss of Coolant Accident. Continuous containment spray operation is not required during the post-accident recirculation phase if only one recirculation pump is available.

Bases: (Contd)

The operable status of the various systems and components is to be demonstrated by periodic tests. Some of these tests will be performed while the reactor is operating in the power range. If a component is found to be inoperable, it will be possible in most cases to effect repairs and restore the system to full operability within a relatively short time. For a single component to be inoperable does not negate the ability of the system to perform its function, but it reduces the redundancy provided in the reactor design and thereby limits the ability to tolerate additional equipment failures. If it develops that: (a) The inoperable component is not repaired within the specified allowable time period, or (b) a second component in the same or related system is found to be inoperable, the reactor will initially be removed from service which will provide for a reduction of the decay heat from the fuel and consequential reduction of cooling requirements after a postulated Loss of Coolant Accident. If the malfunction cannot be rapidly corrected, the reactor will be cooled to the shutdown condition using normal cooldown procedures. In this condition, release of fission products or damage of the fuel elements is not considered possible.

The plant operating procedures require immediate action to effect repairs of an inoperable component and, therefore, in most cases, repairs will be completed in less than the specified allowable repair times. The limiting times to repair are intended to: (1) Assure that operability of the component will be restored promptly and, yet, (2) allow sufficient time to effect repairs using safe and proper procedures.

The leakage rate limit for the core spray recirculation system heat exchanger has been established to assure detection of any degradation of the integrity of the heat exchanger.

By Commission Memorandum and Order dated May 26, 1976, Consumers Power Company was granted a plant life exemption from the single failure criterion requirements of 10 CFR Part 50, 50.46 and Appendix K, Paragraph I.D.1, for the specific case of a Loss of Coolant Accident (LOCA) caused by a break in either core spray line. This exemption was based on conditions specified in the Memorandum and Order and supporting NRC staff documents with which Consumers Power Company has complied.