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

DAIRYLAND POWER COOPERATIVE

DOCKET NO. 50-409

LA CROSSE BOILING WATER REACTOR

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 51
License No. DPR-45

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

   A. The application for amendment by Dairyland Power Cooperative (the licensee) dated September 29, 1982, as revised October 29, 1982, September 16, 1985, and April 1, 1986, 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 Provisional Operating License No. DPR-45 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A issued October 31, 1969, with Authorization No. DPRA-6, as revised through Amendment No. 51 , 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

Jack N. Donohew Jr. for
John A. Zwolinski, Director
BWR Project Directorate #1
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 30, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 51

PROVISIONAL OPERATING LICENSE NO. DPR-45

DOCKET NO. 50-409

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

REMOVE	INSERT
8	8
9	9
31	31
31a	31a
--	37t
--	37u
--	37v
--	37w
--	37x
--	37y
--	37z
--	37aa
--	37bb
5-6	5-6

2.4.4.3 The primary purification system piping, and valves from the reactor to the purification cooler and from the shell of the regenerative cooler to the forced circulation system, shall be capable of containing a maximum working pressure of 1400 psig at 595°F. Other primary purification system piping and components shall be capable of containing a maximum working pressure of 1400 psig at 150°F. The heat exchangers shall be provided with relief valves.

2.4.5 Seal Injection System

2.4.5.1 The seal injection system shall be capable of supplying the cooling and sealing water for the forced-circulation pump seals and for the reactor control rod drive mechanisms.

2.4.5.2 The cooling and sealing water shall be provided at a pressure higher than reactor pressure by two positive displacement pumps arranged in parallel, with one pump normally operating and the other on standby. If one pump or its power supply should fail, the standby pump shall be started automatically.

2.4.5.3 Injection system water supply shall normally be provided by the condensate demineralizer system. An alternate water supply from the containment overhead storage tank shall be automatically admitted to the seal water system reservoir on indication of low level in the reservoir.

2.4.5.4 Continuous blowdown of reactor water shall be provided through each control rod drive upper housing to the forced circulation system.

2.4.6 & 2.4.7 Deleted

2.4.8 Boron Injection System

2.4.8.1 The boron injection system shall be capable of injecting a minimum 17.8 weight percent of sodium pentaborate decahydrate solution directly into the reactor coolant to render the reactor subcritical in the cold clean condition with all rods out.

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4.2.2.8 Operation of the forced circulation pumps shall be as described in Section 2.3.4.3.

4.2.2.9 The reactor shall not be operated above a power level of 82.5 megawatts thermal when only one forced circulation loop is in operation.

4.2.2.10 Automatic initiation of shutdown condenser operation shall cause the shutdown condenser tube side vent control valve to open and then to close automatically after a maximum of 2 min of condenser operation. This action shall be subject to remote manual override.

4.2.2.11 The return isolation valve on the decay heat system shall be locked closed except as required during reactor shutdown.

4.2.2.12 The decay heat pump shall not be placed in service unless the reactor is subcritical by at least 0.5% delta k/k by the criteria of Section 4.2.4.6, or unless boron solution has been injected into the reactor.

4.2.2.13 The purification system shall not be operated whenever the presence of boron solution is required in the reactor.

4.2.2.14 Deleted

4.2.2.15 Deleted

4.2.2.16 Deleted

4.2.2.17 The boron injection system shall be available for remote manual operation whenever the "Control Power" key switch is in the "ON" position or whenever all control rods are not fully inserted, expect during tests specified in Sec. 5.2.9 and 5.2.24.1.

4.2.2.18 Deleted

4.2.2.19 The shutdown condenser system shall be available for automatic operation except at times when the reactor is shut down and the primary system depressurized to approximately atmospheric pressure. Manual valves in the shutdown condenser system shall be locked in that position which will not impair system capability when automatic operability is required.

4.2.2.20 The condition of low accumulator pressure in the hydraulic valve accumulator system whall be corrected within a maximum time of one hour following annunciation in the control room or the reactor shall be shut down.

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

4.2.2.21 Reactor coolant system leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE.

b. IDENTIFIED and UNIDENTIFIED LEAKAGE as shown below:

Area	Source	Max. Allowable Leakage - GPM
Lower Reactor Cavity	IDENTIFIED	0.04
	UNIDENTIFIED	0.01
Forced Circulation Pump Cubicles	IDENTIFIED	2.0
	UNIDENTIFIED	0.5
Balance of Containment Bldg.	IDENTIFIED	4.0
	UNIDENTIFIED	1.0

c. 2 gpm increase in UNIDENTIFIED LEAKAGE within any 24-hour period.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

Change No. 5
Amendment No. 34, 51

4/5.2.24 HIGH PRESSURE CORE SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

4.2.24.1 The high pressure core spray (HPCS) system shall be operable with:

a. For the high pressure core spray mode:

1. Two OPERABLE high pressure core spray pumps, and

2. An OPERABLE flow path capable of taking suction from the overhead storage tank and transferring the water through the core spray header to the reactor pressure vessel.

b. For the low pressure core spray mode:

1. An OPERABLE flow path capable of transferring water from the overhead storage tank to the reactor pressure vessel by gravity.

APPLICABILITY:

a. OPERATIONAL CONDITIONS 1, 2 and 3 for the high pressure core spray mode; except with the boron injection system operating.

b. OPERATIONAL CONDITIONS 1, 2, 3, and 4 for the low pressure core spray mode.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION:

a. For the high pressure core spray mode:

1. With one of the above required high pressure core spray pumps inoperable, POWER OPERATION may continue provided the manual depressurization system and the alternate core spray system are OPERABLE; restore two pumps to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. For the low pressure core spray mode:

1. In OPERATIONAL CONDITION 1, 2, or 3, with the low pressure core spray mode inoperable, POWER OPERATION may continue provided that the alternate core spray system is OPERABLE; restore the low pressure core spray mode to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. In OPERATIONAL CONDITION 4, with the low pressure core spray mode inoperable, suspend all operations that have a potential for draining the reactor vessel.

SURVEILLANCE REQUIREMENTS

5.2.24.1 The high pressure core spray system shall be demonstrated OPERABLE:

a. At least once per 24 hours by verifying the valve actuation nitrogen supply pressure from the regulator to be 30 $\pm$ 10 psig.

b. At least once per 31 days by verifying the valve actuation nitrogen supply bottle pressure to be greater than or equal to 100 psig.

c. For the high pressure core spray mode:

1. Each COLD SHUTDOWN, if not performed within the previous 3 months, by cycling each power operated or automatic valve in the flow path through at least one complete cycle of full travel.

d. At least once per 18 months, during shutdown by performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence, and:

1. Verifying that each automatic valve in the flow path actuates to its correct position on a:

(a) Release of a boron injection actuation signal for the high pressure core spray mode, and

(b) Low pressure core spray mode actuation signal.

2. Verifying that both HPCS pumps start automatically upon receipt of a high pressure core spray mode actuation signal.

3. Verifying that the valve actuation nitrogen supply pressure regulators operate to control valve actuation pressure at 30 $\pm$ 10 psig when cycling the associated valves.

4. Verifying that each pump runs when started manually if and only if a full scram signal exists.

5. Verifying during a test that each pump operates at a flow rate $\geq$ 50 gpm.

e. Prior to startup during each refueling shutdown by verifying that each valve, manual or automatic, in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

EMERGENCY CORE COOLING SYSTEM

MANUAL DEPRESSURIZATION SYSTEM

LIMITING CONDITION FOR OPERATION

4.2.24.2 The manual depressurization system (MDS) shall be OPERABLE with:

a. Two OPERABLE shutdown condenser steam inlet valves, and

b. Two OPERABLE shutdown condenser condensate line reactor vent valves.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

With one of the above required steam inlet valves and/or reactor vent valves inoperable, POWER OPERATION may continue provided the high pressure core spray system is OPERABLE; restore the inoperable valve(s) to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

5.2.24.2 The manual depressurization system shall be demonstrated OPERABLE:

a. At least once per 24 hours by verifying the valve actuation nitrogen supply pressure from the regulator to be 35 $\pm$ 5 psig.

b. Each COLD SHUTDOWN, if not performed within the previous 3 months, by verifying that each steam inlet valve and each reactor vent valve is manually OPERABLE from the control room by cycling each valve through at least one complete cycle of full travel.

EMERGENCY CORE COOLING SYSTEM

ALTERNATE CORE SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

4.2.24.3 The alternate core spray (ACS) system shall be OPERABLE with:

a. Two OPERABLE diesel driven ACS pumps, each with a separate fuel storage tank containing a minimum of 270 gallons of fuel for pump 1A and 108 gallons of fuel for pump 1B.

b. OPERABLE redundant control valves, and

c. An OPERABLE flow path capable of taking suction from the Mississippi River and transferring the water to the reactor pressure vessel.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one of the above required diesel driven ACS pumps and/or redundant control valves inoperable, POWER OPERATION may continue provided that the high pressure core spray system is OPERABLE; restore two pumps and both redundant control valves to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In the event the ACS system is actuated and injects water into the reactor coolant system, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.

SURVEILLANCE REQUIREMENTS

5.2.24.3 The alternate core spray system shall be demonstrated OPERABLE:

a. Each COLD SHUTDOWN, if not performed within the previous 3 months, by cycling each power operated or automatic valve in the flow path through at least one complete cycle of full travel.

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 18 months, during shutdown, by:

1. Performing a system functional test which excludes actual injection of coolant into the reactor vessel, but which includes simulated automatic actuation of the system throughout its emergency operating sequence, and:

(a) Verifying that each:

(1) Automatic valve in the flow path actuates to its correct position upon actuation of a low reactor water level signal coincident with a high containment pressure signal,

(2) Automatic valve closes upon deactuation of the low reactor water level signal, and

(3) Automatic valve reopens upon reactuation of the low reactor water level signal.

(b) Verifying that each diesel driven ACS starts automatically upon receipt of a high containment pressure signal.

2. Verifying that each diesel driven ACS pump operates for greater than or equal to 20 minutes with a pressure greater than or equal to 90 psig, as measured by PI-38-35-801, at a flow rate greater than or equal to 900 gpm.

c. Prior to startup during each refueling shutdown by verifying that each valve, manual or automatic, in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

EMERGENCY CORE COOLING SYSTEM

OVERHEAD STORAGE TANK

LIMITING CONDITION FOR OPERATION

4.2.24.4 The overhead storage tank shall be OPERABLE with:

a. A minimum contained water volume of 15,000 gallons, equivalent to a level of 40 inches.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and 4.

ACTION:

a. With the overhead storage tank inoperable:

(1) In OPERATIONAL CONDITION 1, 2 or 3, declare the HPCS system high pressure core spray mode inoperable and be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 30 hours.

(2) In OPERATIONAL CONDITION 4, declare the HPCS system low pressure core spray mode inoperable and suspend all operations that have a potential for draining the reactor vessel.

SURVEILLANCE REQUIREMENTS

5.2.24.4 The overhead storage tank shall be demonstrated OPERABLE by:

a. At least once per 7 days, verifying the minimum contained water volume in the tank.

b. At least once per 18 months, verifying that the demineralized water makeup valve opens when tank level is:

(1) Greater than or equal to 80 inches with the makeup valve control switch in the open position, and

(2) Greater than or equal to 50 inches with the makeup valve control switch in the closed position.

4/5.2.24 EMERGENCY CORE COOLING SYSTEMS

The OPERABILITY of two independent ECCS systems, the high pressure core spray (HPCS) system and the alternate core spray (ACS) system with the manual depressurization system (MDS), ensures that sufficient emergency core cooling capability will be available in the event of a loss-of-coolant accident (LOCA) assuming the loss of one ECCS system through any single failure consideration. Either system is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest reactor coolant system cold leg pipe downward.

4/5.2.24.1 HIGH PRESSURE CORE SPRAY SYSTEM

The high pressure core spray (HPCS) system high pressure core spray mode is provided to assure that the reactor core is adequately cooled to limit fuel clad temperature in the event of a small break in the reactor coolant system and a loss-of-coolant which does not result in rapid depressurization of the reactor vessel. The HPCS system high pressure core spray mode permits the reactor to be shut down while maintaining sufficient reactor vessel water level inventory until the vessel is depressurized. The HPCS system high pressure core spray mode continues to operate until reactor vessel pressure is below the pressure at which alternate core spray system operation maintains core cooling. The HPCS system high pressure core spray mode consists of two pumps, and associated valves and piping. The pumps each have the capacity to deliver 50 gallons per minute to the reactor at a pressure in excess of reactor operating pressure. The system is actuated by automatically starting the pumps on a signal from either one of two reactor water level sensing channels.

A function of the HPCS system is the low pressure core spray mode which provides, by gravity feed which bypasses the HPCS pumps, water from the OHST to the reactor vessel when the reactor is at low pressure or the reactor vessel head is removed, to provide a source for flooding of the core in case of accidental draining. The HPCS system low pressure core spray mode is actuated on a coincidence signal from the reactor pressure and reactor water level sensing channels.

4/5.2.24.2 MANUAL DEPRESSURIZATION SYSTEM
AND 4/5.2.24.3 ALTERNATE CORE SPRAY SYSTEM

Along with the HPCS system, adequate core cooling is assured by the demonstrated OPERABILITY of the manual depressurization system (MDS) and the alternate core spray (ACS) system.

The MDS is manually initiated. It serves to reduce reactor pressure rapidly so that the ACS system can perform its function. The MDS provides the ACS system with the capability of performing its function in both long-term and short-term cooling modes.

The ACS system is provided to assure that the core is adequately cooled following a loss-of-coolant accident. The system is comprised of two diesel-driven pumps and associated valves and piping. The water supply for the ACS system is the Mississippi River. The ACS system is capable of providing 900 gpm of cooling water to the reactor when reactor pressure drops to approximately 50 psig.

Two Containment Building pressure sensors and two reactor water level sensors provide the signals to actuate operation of the ACS system. A containment pressure of 5 psig will cause a sensor to generate a signal to actuate and automatically start its respective pump. A motor operated valve associated with each pump will be opened on a low reactor water level signal from either of two reactor water level sensors coincident with high Containment Building pressure. Similarly the second pump will start and the valve will open when the respective set of instruments generate the required signals. The motor operator for one valve is supplied with a-c power from an essential power bus, the motor operator for the other valve is supplied with d-c power. The ACS system is capable of remote manual start from the control room.

The surveillance requirements provide adequate assurance that MDS will be OPERABLE when required. A complete functional test results in reactor blowdown and therefore is only performed during shutdown.

The surveillance requirements provide adequate assurance that the ACS system will be OPERABLE when required. All active components are not testable and a full functional test requires reactor shutdown.

4/5.2.24.4 OVERHEAD STORAGE TANK

The OPERABILITY of the Containment Building overhead storage tank (OHST) as part of the ECCS ensures that a sufficient supply of water is available for injection by the HPCS system in the event of a LOCA. Demineralized water for the high pressure core spray system is supplied from the 42,000-gallon overhead storage tank, located in the dome of the Containment Building. The high pressure core spray cooling system is connected near the bottom of the tank. The containment building spray system is connected to a standpipe within the tank with the top of the standpipe located so that 15,000 gallons are reserved for the high pressure core spray system. The demineralized water system replenishes the OHST for long term cooling. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

5.2.3 The exterior surfaces of the LACBWR ventilation stack and the smoke stack of the conventional steam power generating station, Genoa 3, adjacent to the LACBWR plant shall be inspected for structural integrity at an interval no longer than 5 years following the initial construction inspection, and at subsequent intervals no longer than 5 years apart.

5.2.4 The reactor vessel shall be hydrostatically tested at 1400 psig after any of its gasketed joints have been opened and resealed. All hydrostatic tests shall be performed with the vessel at a temperature no lower than that specified in Section 4.2.2.4.

5.2.5 The forced circulation system controls and automatically-operated valves shall be tested for proper operation at each refueling shutdown with test intervals not to exceed 18 months.

5.2.6 The shutdown condenser system control valves shall be tested at least quarterly to demonstrate their operability. The integrated system shall be tested for proper operation at each refueling shutdown with test intervals not to exceed 18 months. In addition, the condenser tube bundle shall be pressurized to greater than 1250 psig and tested for leakage at each refueling shutdown.

5.2.7 Deleted

5.2.8 Deleted

5.2.9 The boron-injection system controls and the remotely-operated valves shall be tested for proper operation during cold shutdowns but not required more often than every 92 days.

5.2.10 The door seals on the containment personnel and emergency airlocks will be visually inspected for degradation every 72 hours.

5.2.11 The door seals on the containment personnel and emergency airlocks will be replaced periodically in accordance with manufacturers recommendations.