Mr. Roger O. Anderson, Director
Nuclear Energy Engineering
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

October 21, 1997

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS RE: COOLING WATER SYSTEM TECHNICAL SPECIFICATIONS (TAC NOS. M97332 AND M97333)

Dear Mr. Anderson:

The Commission has issued the enclosed Amendment No.131 to Facility Operating License No. DPR-42 and Amendment No.123to Facility Operating License No. DPR-60 for the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in partial response to your application dated November 6, 1996, as supplemented April 10 and October 1, 1997.

The amendments revise Technical Specifications governing the cooling water system. The changes improve plant operation based on operational experience with the vertical motor-driven cooling water pump. The changes also incorporate information obtained during the Service Water System Operational Performance Inspection (SWSOPI) that you completed in late 1995. The NRC has completed its review of your amendment requests for TS 3.3-7, TS 4.5-3, and part of TS 5.4-1, and is issuing the enclosed amendments at this time in order to support your current outage schedule. With regard to TS 5.1 and the remaining changes to TS 5.4, the staff has not yet completed its review. Accordingly, the staff will address these portions of your amendment requests in a separate licensing action.

A copy of our related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

ORIGINAL SIGNED BY

Beth A. Wetzel, Senior Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosures:
1. Amendment No.131to DPR-42
2. Amendment No.123to DPR-60
3. Safety Evaluation

cc w/encl: See next page

DISTRIBUTION: See attached page
* See previous concurrence

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DATED: October 21, 1997

AMENDMENT NO. 131 TO FACILITY OPERATING LICENSE NO. DPR-42-PRAIRIE ISLAND UNIT 1
AMENDMENT NO. 123 TO FACILITY OPERATING LICENSE NO. DPR-60-PRAIRIE ISLAND UNIT 2

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Mr. Roger O. Anderson, Director
Northern States Power Company

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Welch, Minnesota 55089

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-282

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 131
License No. DPR-42

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

   A. The application for amendment by Northern States Power Company (the licensee) dated November 6, 1996 as supplemented April 10 and October 1, 1997, 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-42 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 131 , 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 issuance, with full implementation within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Beth A. Wetzel

Beth A. Wetzel, Senior Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 21, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 131

FACILITY OPERATING LICENSE NO. DPR-42

DOCKET NO. 50-282

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

REMOVE	INSERT
TS 3.3-7	TS 3.3-7
TS 4.5-3	TS 4.5-3
TS 5.4-1	TS 5.4-1

3.3.D. Cooling Water System

1. A reactor shall not be made or maintained critical nor shall reactor coolant system average temperature exceed 200°F, unless the following conditions are satisfied (except as specified in 3.3.D.2 below).

   a. Four of the five cooling water pumps are OPERABLE, and if one diesel-driven cooling water pump is inoperable, then 121 cooling water pump shall be aligned as shown in the table below or apply 3.3.D.2.a. All changes in the valve positions shall be under direct administrative control.

Inoperable Pump	Valve Alignment	Power Supply to Bus 27 (#121 Cooling Water Pump)
#12 Cooling Water Pump	MV-32037 or MV-32036 closed; and associated Bkr Locked Off MV-32034 and MV-32035 open; and both Bkrs Locked Off	Bus 25
#22 Cooling Water Pump	MV-32034 or MV-32035 closed; and the associated Bkr Locked Off MV-32037 and MV-32036 open; and both Bkrs Locked Off	Bus 26

   b. Two safeguards traveling screens are OPERABLE.

   c. Two cooling water headers are OPERABLE.

   d. A fuel oil supply of 19,000 gallons is available for the diesel-driven cooling water pumps in the interconnected Unit 1 diesel fuel oil storage tanks. Note that the 19,000 gallon requirement is included in the 70,000 gallon total diesel fuel oil requirement of Specification 3.7.A.5 for Unit 1.

B. Component Tests

1. Pumps

a. The safety injection pumps, residual heat removal pumps and containment spray pumps shall be tested pursuant to Specification 4.2. Acceptable levels of performance shall be that the pumps start and reach their required developed head on minimum recirculation flow and the control board indications and visual observations indicate that the pumps are operating properly for at least 15 minutes.

b. A test consisting of a manually-initiated start of each diesel engine, and assumption of load within one minute, shall be conducted monthly.

c. The vertical motor-driven cooling water pump shall be operated at quarterly intervals. An acceptable level of performance shall be that the pump starts and reaches its required developed head and the control board indications and visual observations indicate that the pump is operating properly for at least 15 minutes.

2. Containment Fan Motors

The Containment Fan Coil Units shall be run on low motor speed for at least 15 minutes at intervals of one month. Motor current shall be measured and compared to the nominal current expected for the test conditions.

3. Valves

a. The refueling water storage tank outlet valves shall be tested in accordance with Section 4.2.

b. The accumulator check valves will be checked for OPERABILITY during each refueling shutdown.

c. The boric acid tank valves to the Safety Injection System shall be tested in accordance with Section 4.2.

d. The spray chemical additive tank valves shall be tested in accordance with Section 4.2.

e. Actuation circuits for Cooling Water System valves that isolate non-essential equipment from the system shall be tested each refueling outage. Unit 1 SI actuation circuits for Train A and Train B valves shall be tested during Unit 1 refueling outages. Unit 2 SI actuation circuits for Train A and Train B valves shall be tested during Unit 2 refueling outages.

f. All motor-operated valves in the SIS, RHR, Containment Spray, Cooling Water, and Component Cooling Water System that are designed for operation during the safety injection or recirculation phase of emergency core cooling, shall be tested for OPERABILITY at each refueling shutdown.

5.4 ENGINEERED SAFETY FEATURES

The engineered safety features include the containment system described in Specification 5.2, the emergency core cooling system, the containment air cooling system, the containment spray system, the post-accident combustible gas control system, emergency power supplies, component cooling water system, and the cooling water system. These systems are designed to applicable industry codes, the NRC General Design Criteria in Appendix A to 10CFR50, and NRC Safety Guides. Particular features for the Prairie Island plant include the following:

1. Several of the features are shared between the two units, including the onsite diesel generators, the cooling water system, and the motor-driven pumps of the auxiliary feedwater system. Shared systems are designed to mitigate the effects of an accident in one unit and simultaneously provide for a hot shutdown in the other unit (Reference 1).

2. The emergency cooling water pumps are driven by diesel engines. These diesel engines are designed and will be tested to the same reliability criteria as those for the diesel generators that supply emergency electrical power (Reference 2).

3. The cooling water system is automatically divided into two (2) redundant loops by motor-driven valves which are actuated by a safety injection signal. Branches serving non-safety related equipment in the turbine rooms are isolated from the class I cooling water loops by motor operated valves. These valves are closed by an SI signal coincident with low header pressure.

Reference

1. FSAR, Table 1.2-2
2. USAR, Section 10.4

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-306

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 123
License No. DPR-60

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

   A. The application for amendment by Northern States Power Company (the licensee) dated November 6, 1996 as supplemented April 10 and October 1, 1997, 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-60 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.123 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 issuance, with full implementation within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Beth A. Wetzel

Beth A. Wetzel, Senior Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 21, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 123

FACILITY OPERATING LICENSE NO. DPR-60

DOCKET NO. 50-306

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

REMOVE	INSERT
TS 3.3-7	TS 3.3-7
TS 4.5-3	TS 4.5-3
TS 5.4-1	TS 5.4-1

3.3.D. Cooling Water System

1. A reactor shall not be made or maintained critical nor shall reactor coolant system average temperature exceed 200°F, unless the following conditions are satisfied (except as specified in 3.3.D.2 below).

   a. Four of the five cooling water pumps are OPERABLE, and if one diesel-driven cooling water pump is inoperable, then 121 cooling water pump shall be aligned as shown in the table below or apply 3.3.D.2.a. All changes in the valve positions shall be under direct administrative control.

Inoperable Pump	Valve Alignment	Power Supply to Bus 27 (#121 Cooling Water Pump)
#12 Cooling Water Pump	MV-32037 or MV-32036 closed; and associated Bkr Locked Off MV-32034 and MV-32035 open; and both Bkrs Locked Off	Bus 25
#22 Cooling Water Pump	MV-32034 or MV-32035 closed; and the associated Bkr Locked Off MV-32037 and MV-32036 open; and both Bkrs Locked Off	Bus 26

   b. Two safeguards traveling screens are OPERABLE.

   c. Two cooling water headers are OPERABLE.

   d. A fuel oil supply of 19,000 gallons is available for the diesel-driven cooling water pumps in the interconnected Unit 1 diesel fuel oil storage tanks. Note that the 19,000 gallon requirement is included in the 70,000 gallon total diesel fuel oil requirement of Specification 3.7.A.5 for Unit 1.

B. Component Tests

1. Pumps

a. The safety injection pumps, residual heat removal pumps and containment spray pumps shall be tested pursuant to Specification 4.2. Acceptable levels of performance shall be that the pumps start and reach their required developed head on minimum recirculation flow and the control board indications and visual observations indicate that the pumps are operating properly for at least 15 minutes.

b. A test consisting of a manually-initiated start of each diesel engine, and assumption of load within one minute, shall be conducted monthly.

c. The vertical motor-driven cooling water pump shall be operated at quarterly intervals. An acceptable level of performance shall be that the pump starts and reaches its required developed head and the control board indications and visual observations indicate that the pump is operating properly for at least 15 minutes.

2. Containment Fan Motors

The Containment Fan Coil Units shall be run on low motor speed for at least 15 minutes at intervals of one month. Motor current shall be measured and compared to the nominal current expected for the test conditions.

3. Valves

a. The refueling water storage tank outlet valves shall be tested in accordance with Section 4.2.

b. The accumulator check valves will be checked for OPERABILITY during each refueling shutdown.

c. The boric acid tank valves to the Safety Injection System shall be tested in accordance with Section 4.2.

d. The spray chemical additive tank valves shall be tested in accordance with Section 4.2.

e. Actuation circuits for Cooling Water System valves that isolate non-essential equipment from the system shall be tested each refueling outage. Unit 1 SI actuation circuits for Train A and Train B valves shall be tested during Unit 1 refueling outages. Unit 2 SI actuation circuits for Train A and Train B valves shall be tested during Unit 2 refueling outages.

f. All motor-operated valves in the SIS, RHR, Containment Spray, Cooling Water, and Component Cooling Water System that are designed for operation during the safety injection or recirculation phase of emergency core cooling, shall be tested for OPERABILITY at each refueling shutdown.

5.4 ENGINEERED SAFETY FEATURES

The engineered safety features include the containment system described in Specification 5.2, the emergency core cooling system, the containment air cooling system, the containment spray system, the post-accident combustible gas control system, emergency power supplies, component cooling water system, and the cooling water system. These systems are designed to applicable industry codes, the NRC General Design Criteria in Appendix A to 10CFR50, and NRC Safety Guides. Particular features for the Prairie Island plant include the following:

1. Several of the features are shared between the two units, including the onsite diesel generators, the cooling water system, and the motor-driven pumps of the auxiliary feedwater system. Shared systems are designed to mitigate the effects of an accident in one unit and simultaneously provide for a hot shutdown in the other unit (Reference 1).

2. The emergency cooling water pumps are driven by diesel engines. These diesel engines are designed and will be tested to the same reliability criteria as those for the diesel generators that supply emergency electrical power (Reference 2).

3. The cooling water system is automatically divided into two (2) redundant loops by motor-driven valves which are actuated by a safety injection signal. Branches serving non-safety related equipment in the turbine rooms are isolated from the class I cooling water loops by motor operated valves. These valves are closed by an SI signal coincident with low header pressure.

Reference

1. FSAR, Table 1.2-2
2. USAR, Section 10.4

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 131 AND 123 TO

FACILITY OPERATING LICENSE NOS. DPR-42 AND DPR-60

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-282 AND 50-306

1.0 INTRODUCTION

By letter dated November 6, 1996, as supplemented April 10 and October 1, 1997, the Northern States Power Company (NSP or the licensee) requested amendments to the Technical Specifications (TS) appended to Facility Operating License Nos. DPR-42 and DPR-60 for the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2. The proposed amendments involve use of the swing motor-driven safeguards cooling water pump, the testing frequency of cooling water isolation valve actuation circuits, revision of site descriptive information, and removal of certain requirements contained in the Site and Engineered Safety Features sections of the TS. This evaluation pertains only to the proposed requirements for the swing motor-driven safeguards cooling water pump and the testing frequency of cooling water isolation valve actuation circuits. More information is needed prior to staff approval of the changes requested by the licensee to TS 5.1 and the remainder of TS 5.4. These changes will be addressed in a separate licensing action.

The April 10 and October 1, 1997, letters provided clarifying information within the scope of the original application and did not change the staff's initial proposed no significant hazards considerations determination.

2.0 EVALUATION

2.1 Swing Cooling Water Pump

Section 3.3.D.1.a of the existing Prairie Island TS require that four of five cooling water pumps be operable and states requirements for aligning the motor-driven (swing) safeguards cooling water pump if one of the two diesel-driven safeguards cooling water pumps become inoperable. However, Section 3.3.D.2.a of the Prairie Island TS allows two of the three safeguards cooling water pumps to be inoperable for up to 7 days provided that certain conditions are met. The licensee proposes to change Section 3.3.D.1.a to include an option to enter TS Section 3.3.D.2.a (i.e., 7-day action requirement) in lieu of aligning the motor-driven safeguards cooling water pump as currently required by TS 3.3.D.1.a.

The licensee originally upgraded the motor-driven safeguards cooling water pump and established the requirement stated in TS 3.3.D.1.a (submittal dated March 20, 1992) in order to increase the availability of the cooling water system and to provide additional operational capability during periods when one of the two diesel-driven safeguards cooling water pumps is inoperable. The licensee's proposed change to TS Section 3.3.D.1.a provides additional operational flexibility without diminishing the cooling water system performance and operational capability below what is currently allowed by TS 3.3.D.2.a, which states the allowed outage time requirements for the cooling water system pumps. Therefore, the proposed change to TS Section 3.3.D.1.a is acceptable.

2.2 Cooling Water Isolation Valves

The existing Prairie Island TS 4.5.B.3.e requires that the actuation circuits for the Cooling Water System valves that isolate non-essential equipment to be tested in accordance with Section 4.2 of the TS, which requires quarterly testing. TS 5.4-3 also describes the logic for the cooling water isolation valves. Currently, the turbine building cooling water loads are isolated if the header experiences high flow coincident with low pressure. Recent system assessment activities performed by the licensee determined that system performance could be improved if the valve actuation logic were modified to isolate on an SI [safety injection] signal coincident with low header pressure. The licensee plans to install a modification that would implement the above cooling water isolation valve logic during the next refueling outage. However, due to the SI circuit inputs into this logic, it can be tested only during outages. Therefore, the licensee has proposed the change to TS 4.5.B.3.e to require testing of the cooling water isolation valves circuitry during refueling outages. The licensee has also proposed the change to TS 5.4-3 which describes the isolation logic.

The licensee has determined that by changing the logic for the actuation circuitry for the cooling water isolation valves from high flow coincident with low header pressure to an SI signal coincident with low header pressure plant safety will be improved. In 1995 Prairie Island performed a self-assessment Service Water System Operational Performance Inspection (SWSOPI) and determined that plant safety would be improved by making the turbine building cooling water isolation header directly responsive to an SI signal. Current inputs to the isolation logic are not positive indicators that an accident is in progress.

The original plant design isolated the turbine building cooling water header on an SI signal to assure that essential loads were supplied with cooling water during an accident. However, the isolation logic was modified during plant construction due to concerns with spurious SI signals. The earlier concerns with spurious SI signals are addressed by retaining the low header pressure input. The low header pressure input will also be raised during the plant modification which will cause the isolation to occur sooner. These changes do not fall under the guidance for increased surveillance interval instrument drift contained in Generic Letter 91-04, "Changes to Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," because the pressure switches within the circuitry will continue to be calibrated in accordance with their current surveillance schedules. These changes will assure that essential loads are supplied with cooling water during an accident. Therefore, the proposed changes to TS 4.5-3 and TS 5.4-1 are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, 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 the amendments involve no significant hazards consideration and there has been no public comment on such finding (62 FR 4338). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 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 the amendments.

5.0 CONCLUSION

The Commission has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: J. Tatum
B. Wetzel

Date: October 21, 1997