

JULY 18 1978

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Docket Nos. 50-282
 and 50-306

Northern States Power Company
 ATTN: Mr. L. O. Mayer, Manager
 Nuclear Support Services
 414 Nicollet Mall - 8th Floor
 Minneapolis, Minnesota 55401

Gentlemen:

In response to the portion of your request dated October 12, 1977, related to ECCS throttle valves, the Commission has issued the enclosed Amendment Nos. 30 and 24 to Facility Operating License Nos. DPR-42 and DPR-60 for the Prairie Island Nuclear Generating Plant Unit Nos. 1 and 2, respectively.

The amendments consist of changes in the Technical Specifications that incorporate surveillance requirements relating to the ECCS throttle valves. During our review of your proposed request we found that certain changes were necessary. Your staff has agreed to these changes and they have been incorporated. In addition, since condition 2.C(3)b of the licenses regarding the Spent Fuel Pool modification has been fulfilled, it has been deleted.

Copies of the related Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,



A. Schwencer, Chief
 Operating Reactors Branch #1
 Division of Operating Reactors

Enclosures:

1. Amendment No. 30 to DPR-42
2. Amendment No. 24 to DPR-60
3. Safety Evaluation
4. Notice

cc w/encl: See next page

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

July 18, 1978

Docket Nos. 50-282
and 50-306

Northern States Power Company
ATTN: Mr. L. O. Mayer, Manager
Nuclear Support Services
414 Nicollet Mall - 8th Floor
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Copies of the related Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

A handwritten signature in cursive script, appearing to read "A. Schwencer".

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:

1. Amendment No. 30 to DPR-42
2. Amendment No. 24 to DPR-60
3. Safety Evaluation
4. Notice

cc w/encl: See next page

July 18, 1978

cc: Gerald Charnoff, Esquire
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Analyses Branch (AW-459)
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Region V Office
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Area Commission
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Hudson, Wisconsin 54016



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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-282

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 30
License No. DPR-42

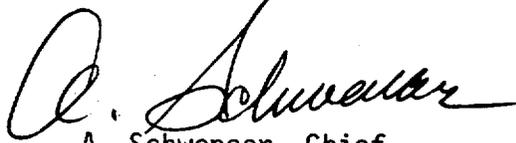
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated October 12, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules 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 deleting of paragraph 2.C(3)b of Facility License No. DPR-42 and by changes to the Technical Specifications as indicated in the attachment to this license amendment; paragraph 2.C.(2) of Facility License No. DPR-42 is hereby amended to read as follows:

"(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 30, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division fo Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 18, 1978



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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-306

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 24
License No. DPR-60

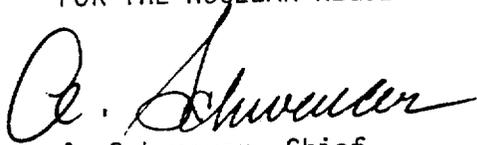
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Northern States Power Company (the licensee) dated October 12, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 deletion of paragraph 2.C(3)b of Facility License No. DPR-60 and by changes to the Technical Specifications as indicated in the attachment to this license amendment; paragraph 2.C(2) of Facility License No. DPR-60 is hereby amended to read as follows:

"(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 24, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 18, 1978

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 30 TO FACILITY OPERATING LICENSE NO. DPR-42

AMENDMENT NO. 24 TO FACILITY OPERATING LICENSE NO. DPR-60

DOCKET NOS. 50-282 AND 50-306

Replace the following pages of the Technical Specifications contained in Appendix A of the above indicated licenses with the attachment pages bearing the same numbers, except as otherwise indicated. The changed areas on the revised pages are reflected by a marginal line.

<u>Remove</u>	<u>Insert</u>
TS. 4.5-3	TS 4.5-3
	TS 4.5-3a
TS. 4.5-4	TS 4.5-4

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 performing the pump tests.
- 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 at intervals of one month.
- d. The spray chemical additive tank valves shall be cycled by operator action at intervals of one month.
- e. Actuation circuits for cooling water system valves that isolate the non-essential equipment from the system shall be tested monthly.
- 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.
- g. The correct position of the throttle valves below shall be verified as follows:
 1. Within 4 hours following completion of each valve stroking operation,
 2. Within 4 hours following maintenance on the valve when the Safety Injection System is required to be operable, and
 3. Periodically at least once per 18 months to the extent not verified in accordance with 1 and 2 above within this time period.

Unit 1 Valves

SI-15-6
SI-15-7
SI-15-8
SI-15-9

Unit 2 Valves

2SI-15-6
2SI-15-7
2SI-15-8
2SI-15-9

h. Following completion of high head safety injection system or RHR system modifications that alter system flow characteristics a flow balance test shall be performed during shutdown to confirm the following injection flow rates are achieved:

1. High Head Safety Injection System:

- (a) Flow through all four injection lines plus miniflow shall not exceed 835 gpm with one pump in operation.
- (b) The minimum flow through loop A & B cold legs shall be 670 gpm with one pump in operation. The flow rates in each leg shall be within 20 gpm of each other with one pump in operation.
- (c) Flow orifices and throttling valves will be used to limit and balance flow through the reactor vessel injection lines to a maximum of the total flow limit in Specification 4.5.B.3.h.1.(a) above, with one pump in operation. During this flow test the flow rates in each leg shall be within 50 gpm of each other.

2. RHR System:

The minimum flow through each RHR Reactor Vessel Injection line shall be at least 1800 gpm with one pump in operation.

Basis

The Safety Injection System and the Containment Spray System are principal plant Safety Systems that are normally inoperative during reactor operation. Complete systems tests cannot be performed when the reactor is operating because a safety injection signal causes containment isolation and a Containment Spray System test requires the system to be temporarily disabled. The method of assuring operability of these systems is therefore to combine systems tests to be performed during refueling shutdowns, with more frequent component tests which can be performed during reactor operation.

The systems tests demonstrate proper automatic operation of the Safety Injection and Containment Spray Systems. With the pumps blocked from starting, a test signal is applied to initiate automatic action and verification made that the components receive the safety injection in the proper sequence. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.

Basis (Continued)

During reactor operation, the instrumentation which is depended on to initiate safety injection and containment spray is generally checked weekly, and the initiating circuits are tested monthly (in accordance with Specification 4.1).

The program of pump and valve testing for safety related equipment conforms to the requirements of 10 CFR 50, Section 50.55a(g). Where practical, tests of ASME Code Class 1, Class 2, and Class 3 pumps and valves are performed in accordance with Section XI of the ASME Code. If a code required test is impractical for the Prairie Island facility, a request for a deviation from that requirement is submitted to the Commission in accordance with 10 CFR 50, Section 50.55a(g)(6)(i).

Deviations which are needed from the procedures prescribed in Section XI of the ASME Code and applicable Addenda will be reported to the Commission prior to the beginning of each 20-month inspection period if they are known to be required at that time. Deviations which are identified during the course of inspection will be reported quarterly throughout the 20-month inspection period. Negative reports will not be made.

Other systems that are also important to the emergency cooling function are the accumulators, the component cooling system, the Cooling Water System and the containment fan coolers. The accumulators are a passive safeguard. In accordance with Specification 4.1, the water volume and pressure in the accumulators are checked periodically. The other systems mentioned operate when the reactor is in operation and by these means are continuously monitored for satisfactory performance.

The purpose of the surveillance requirements on ECCS throttle valves is to provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point in the High Head Safety Injection System is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

References

- (1) FSAR, Section 6.2



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 30 TO FACILITY LICENSE NO. DPR-42

AMENDMENT NO. 24 TO FACILITY LICENSE NO. DPR-60

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNIT NOS. 1 AND 2

DOCKET NOS. 50-282 AND 50-306

Introduction

By letter dated October 12, 1977, Northern States Power Company (NSP) responded to our letter dated August 1, 1977 and requested amendments to Facility License Nos. DPR-42 and DPR-60 for the Prairie Island Nuclear Generating Plant Unit Nos. 1 and 2 (PINGP). The proposed amendments would incorporate surveillance requirements relating to the ECCS throttle valves. During our review of the proposed amendment request we found that certain changes were necessary to satisfy staff requirements. The NSP staff has agreed to these changes and they have been incorporated. In addition since condition 2.C.(3)b of the licenses, regarding the spent fuel pool modification has been fulfilled, its deletion is appropriate.

Following an Atomic Safety and Licensing Board Initial Decision dated August 12, 1977, regarding expansion of the capacity of the PINGP spent fuel pool, we issued Amendment Nos. 22 and 16 to the PINGP Unit 1 and 2 licenses respectively, on August 16, 1977. These amendments, which authorized the expansion, included two conditions, 2.C.(3)a and 2.C.(3)b, which related to the spent fuel pool modifications. Following a September 21, 1977 ASLB Order one of these conditions, 2.C.(3)a, was removed (by Amendment Nos. 23 and 17 dated October 11, 1977). The remaining condition, 2.C.(3)b, required:

"Before work begins on the project, the licensee shall measure and record ambient radiation levels around the fuel pool. After the replacement of the storage racks and the fuel elements currently stored in them, the licensee shall again measure radiation levels around the pool, monitoring such levels and operating the cleanup system until the levels return to those typical of the period before the rack modification work was begun. No further activities which would increase the radioactive content of the pool (activities, for example, such as refueling) shall be carried out until the levels return to those typical of the period before the modification."

The above condition has been satisfied as reported in NSP's "Annual Report of Occupational Exposure and Changes Test and Experiments January 1, December 31, 1977" dated February 28, 1978 and in our NRC Office of Inspection and Enforcement (I&E) report (50-282/78-5, 50-306/78-7).

The ambient radiation levels around the fuel pool were measured before the modification work was begun and after it was completed. The radiation levels have returned to those typical of the period before the modification. The records of those measurements were retained at the plant and subsequent I&E inspections on April 25, April 26, May 4 and May 5, 1978 (See I&E Reports 50-282/78-5, 50-306/78-7) verified that the records exist and that the radiation levels were as required by the ASLB Order before the refueling activities were carried out. Based on the above verification that NSP has fulfilled condition 2.C.(3)b of the licenses, its deletion is appropriate.

Discussion and Evaluation

The High and Low Pressure Safety Injection system (HPSI and LPSI) designs of many Pressurized Water Reactors (PWR) use a common low pressure and a common high pressure header to feed the several cold (and in some cases hot) leg injection points. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration; (2) provide a proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses. On many plants, there are motor operated valve(s) in the lines to each injection point that have stops which are set during pre-operational flow testing of the plant to insure that these flow requirements are satisfied. On other plants, electrical or mechanical stops on the Safety Injection System's isolation valve(s) are used for this purpose. The PINGP uses mechanical stops to satisfy these ECCS flow requirements.

While pre-operational HPSI/LPSI flow testing assured that the valves used to throttle flow have been properly set initially, we have concluded that periodic surveillance requirements are needed to assure that these settings are maintained. Consequently, we requested all PWR licensees including NSP to propose appropriate Technical Specification changes to incorporate periodic surveillance requirements for these valves. We provided sample surveillance requirements to licensees for guidance in developing proposed changes. Our sample included periodic verification of throttle valve position stop settings, and verification of proper ECCS flow rates whenever system modifications are made that could alter flow characteristics.

NSP responded to our request with respect to PINGP by letter dated October 12, 1977. Based on our review of that submittal, and subsequent discussions with the licensee, we have concluded that NSP's proposed increased surveillance requirements will provide sufficient additional assurance that proper valve settings for ECCS flows and flow distributions will be maintained throughout plant life; and thus, the proposed changes are acceptable.

Environmental Consideration

We have determined that the amendments will not authorize a change in effluent types or total amounts nor an increase in power levels and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact, and pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: July 18, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-282 AND 50-306

NORTHERN STATES POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 30 and 24 to Facility Operating License Nos. DPR-42 and DPR-60, issued to the Northern States Power Company (the licensee) which revised Technical Specifications for operation of Unit Nos. 1 and 2 of the Priarie Island Nuclear Generating Plant (the facilities) located in Goodhue County, Minnesota. The amendments will become effective as of the date of issuance.

The amendments revised the Technical Specifications for the facilities to incorporate surveillance requirements relating to the ECCS throttle valves and delete fulfilled condition 2.C.(3)b of the licenses regarding the spent fuel pool radiation levels.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated October 12, 1977, (2) Amendment Nos.

30 and 24 to License Nos. DPR-42 and DPR-60, respectively, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C., and at the Environmental Conservation Library of the Minneapolis Public Library, 300 Nicollet Mall, Minneapolis, Minnesota 55401. A single copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 18th day of July 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors