

May 10, 1982

(w/o TER) DISTRIBUTION Docket File

Docket No. 50-263

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w/o encls. K.Eccleston  
EXTEND

Dear Mr. Mayer:

The Commission has issued the enclosed Amendment No. 10 to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant. This amendment consists of changes to the Technical Specifications as proposed in your application dated October 10, 1980, as modified by subsequent discussions with your staff.

The amendment expands the Technical Specifications on the Scram Discharge Volume (SDV) to include:

1. Surveillance requirements for the SDV vent and drain valves;
2. Limiting Conditions of Operation/Surveillance requirements for the Reactor Protection System and Control Rod Block SDV limit switches; and
3. Editorial changes which were agreed to by your staff.

We have also enclosed copies of the Safety Evaluation and the Notice of Issuance.

Sincerely,

ORIGINAL SIGNED BY

Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing

- Enclosures:
1. Amendment No. 10 to DPR-22
  2. Safety Evaluation
  3. Technical Evaluation Report
  4. Notice

*Attachments 1, 2 + 4 are not already on DCS.*

*FR NOTICE + AMENDMENT*

cc: w/enclosures  
See next page

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|         |         |            |         |            |           |         |            |
|---------|---------|------------|---------|------------|-----------|---------|------------|
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Mr. L. O. Mayer  
Northern States Power Company

cc:

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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 10  
License No. DPR-22

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Northern States Power Company (the licensee) dated October 10, 1980 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-22 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B as revised through Amendment No. 10 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 20, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 10

FACILITY OPERATING LICENSE NO. DPR-22

DOCKET NO. 50-263

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

| <u>Remove</u> | <u>Insert</u> |
|---------------|---------------|
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| 32            | 32            |
| 57            | 57            |
| 61            | 61            |
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TABLE 4.1.1

SCRAM INSTRUMENT FUNCTIONAL TESTS

MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENTATION AND CONTROL CIRCUITS

| <u>INSTRUMENT CHANNEL</u>               | <u>GROUP*</u> | <u>FUNCTIONAL TEST</u>        | <u>MINIMUM FREQUENCY (4)</u> |
|---|---------------|-------------------------------|------------------------------|
| High Reactor Pressure                   | A             | Trip Channel and Alarm        | Note 1                       |
| High Drywell Pressure                   | A             | Trip Channel and Alarm        | Note 1                       |
| Low Reactor Water Level (2)             | A             | Trip Channel and Alarm        | Note 1                       |
| High Water Level in Scram Discharge     | A             | Trip Channel and Alarm        | Once Each Month              |
| Condenser Low Vac.                      | A             | Trip Channel and Alarm        | Note 1                       |
| Main Steam Line Isolation Valve Closure | A             | Trip Channel and Alarm        | Note 1                       |
| Turbine Stop Valve Closure              | A             | Trip Channel and Alarm        | Note 1                       |
| Manual Scram                            | A             | Trip Channel and Alarm        | Note 1                       |
| Turbine Control Valve Fast Closure      | A             | Trip Channel and Alarm        | Note 1                       |
| APRM/Flow Reference (5)                 | B             | Trip Output Relays            | Once each week               |
| IRM (5)                                 | C             | Trip Channel and Alarm        | Note 3                       |
| High Steam Line Rad. (5)                | B             | Trip Channel and Alarm        | Once each week               |
| Mode Switch in Shutdown                 | C             | Place mode switch in shutdown | Each refueling outage        |

3.1/4.1

Table 3.2.3 - Continued  
Instrumentation That Initiates Rod Block

| Function                         | Trip Settings         | Reactor Modes in Which Function Must Be Operable or Operating and Allowable Bypass Conditions** |         |      | Total No. of Instrument Channels per Trip system | Min. No. of Operable or Operating Instrument Channels Per Trip System (Notes 1,6) | Required Conditions* |
|----------------------------------|-----------------------|---|---------|------|--|---|----------------------|
|                                  |                       | Refuel  | Startup | Run  |  |   |                      |
| 4. <u>RBM</u>                    |                       |   |         |      |  |   |                      |
| a. Upscale<br>(flow referenced)  | <65W + 43<br>(Note 2) |   |         | X(c) | 1  | 1 (Note 5)  | D or E               |
| b. Downscale                     | >3/125 full           |   |         | X(c) | 1  | 1 (Note 5)  | D or E               |
| 5. <u>Scram Discharge Volume</u> |                       |   |         |      |  |   |                      |
| Water Level-<br>High             | <18 gal               |   | X       | X    | 1  | 1   | B and D, or A        |

Notes:

- (1) There shall be two operable or operating trip systems for each function. If the minimum number of operable or operating instrument channels cannot be met for one of the two trip systems, this condition may exist up to seven days provided that during this time the operable system is functionally tested immediately and daily thereafter. This note is not applicable to the Scram Discharge Volume Rod Block since it exists in only one trip system.
- (2) "W" is the reactor recirculation driving flow in percent.
- (3) Only one of the four SRM channels may be bypassed.
- (4) There must be at least one operable or operating IRM channel monitoring each core quadrant.
- (5) One of the two RBMs may be bypassed for maintenance and/or testing for periods not in excess of 24 hours in any 30 day period. An REM channel will be considered inoperable if there are less than half the total number of normal inputs from any LPRM level.

Table 4.2.1  
Minimum Test and Calibration Frequency For Core Cooling  
Rod Block and Isolation Instrumentation

| Instrument Channel                         | Test (3)         | Calibration (3)  | Sensor Check (3) |
|--|------------------|------------------|------------------|
| <u>ECCS INSTRUMENTATION</u>                |                  |                  |                  |
| 1. Reactor Low-Low Water Level (Note 7)    | once/month       | Once/3 months    | Once/Shift       |
| 2. Drywell High Pressure (Note 7)          | once/month       | Once/3 months    | None             |
| 3. Reactor Low Pressure (Pump Start)       | Note 1           | Once/3 months    | None             |
| 4. Reactor Low Pressure (Valve Permissive) | Note 1           | Once/3 months    | None             |
| 5. Undervoltage Emergency Bus              | Refueling Outage | Refueling Outage | None             |
| 6. Low Pressure Core Cooling Pumps         | Note 1           | Once/3 months    | None             |
| Discharge Pressure Interlock               | Refueling Outage | Refueling Outage | None             |
| 7. Loss of Auxiliary Power                 |                  |                  |                  |
| <u>ROD BLOCKS</u>                          |                  |                  |                  |
| 1. APM Downscale                           | Notes (1,5)      | Once/3 months    | None             |
| 2. APM Flow Variable                       | Notes (1,5)      | Once/3 months    | None             |
| 3. IIM Upscale                             | Notes (2,5)      | Note 2           | Note 2           |
| 4. IIM Downscale                           | Notes (2,5)      | Note 2           | Note 2           |
| 5. RIM Upscale                             | Notes (1,5)      | Once/3 months    | None             |
| 6. RIM Downscale                           | Notes (1,5)      | Once/3 months    | None             |
| 7. SIM Upscale                             | Notes (2,5)      | Note 2           | Note 2           |
| 8. SIM Detector not in Start-up Position   | Note 2           | Note 2           | Note 2           |
| 9. Scram Discharge Volume-High Level       | Once/3 months    | Refueling Outage | None             |
| <u>MAIN STEAM LINE ISOLATION</u>           |                  |                  |                  |
| 1. Steam Tunnel High Temperature           | Refueling Outage | Refueling Outage | None             |
| 2. Steam Line High Flow                    | Note 1           | Once/3 months    | Once/Shift       |

Table 3.2.7 - Continued  
Trip Function and Deviations

|  | Trip Function   | Deviation   |
|--|---|---|
| Instrumentation That Initiates Emergency Core Cooling Systems<br>Table 3.2.2 | Low-Low Reactor Water Level                                       | -3 Inches   |
|  | Reactor Low Pressure (Pump Start) Permissive                      | -10 psi   |
|  | High Drywell Pressure   | +1 psi  |
|  | Low Reactor Pressure (Valve Permissive)                           | -10 psi   |
| Instrumentation That Initiates Rod Block<br>Table 3.2.3                      | IRM Downscale<br>IRM Upscale                                      | -2/125 of Scale<br>+2/125 of Scale                    |
|  | APRM Downscale<br>APRM Upscale                                    | -2/125 of Scale<br>See Basis 2.3                      |
|  | RBM Downscale<br>RBM Upscale<br>Scram Discharge Volume-High Level | -2/125 of Scale<br>Same as APRM Upscale<br>+ 1 gallon |
| Instrumentation That Initiates Recirculation Pump Trip                       | High Reactor Pressure   | + 12 psi  |
|  | Low Reactor Water Level   | - 3 Inches  |

A violation of this specification is assumed to occur only when a device is knowingly set outside of the limiting trip settings, or, when a sufficient number of devices have been affected by any means such that the automatic function is incapable of operating within the allowable deviation while in a reactor mode in which the specified function must be operable or when actions specified are not initiated as specified.

### 3.0 LIMITING CONDITIONS FOR OPERATION

#### E. Reactivity Anomalies

At a specific steady state base condition of the reactor actual control rod inventory will be periodically compared to a normalized computed prediction of the inventory. If the difference exceeds one per cent,  $\Delta k$ , reactor power operation shall not be permitted until the cause has been evaluated and appropriate corrective action has been completed.

#### F. Scram Discharge Volume

The scram discharge volume drain and vent valves shall be operable whenever more than one operable control rod is withdrawn (not including rods removed per Specification 3.10.E, or inoperable rods allowed by 3.3.A.2).

2. If the scram discharge volume drain or vent valve is made or found inoperable, at least all but one operable control rods (not including rods removed per Specification 3.10.E or inoperable rods allowed by 3.3.A.2) shall be fully inserted within ten hours.

3.3/4.3

Amendment No. 10

### 4.0 SURVEILLANCE REQUIREMENTS

#### E. Reactivity Anomalies

During the startup test program and at each startup following refueling outages, the actual rod inventory shall be compared to a normalized computed prediction of the inventory. These comparisons will be used as base data for reactivity monitoring during subsequent power operation throughout the fuel cycle. At specific power operating conditions, the actual rod configuration will be compared to the configuration expected based upon appropriately corrected past data. This comparison will be made at least every equivalent full power month.

#### F. Scram Discharge Volume

1. The scram discharge volume drain and vent valves shall be verified open at least once per month. Each valve shall be cycled quarterly. These valves may be closed intermittently for testing under administrative control.

During each refueling outage verify the scram discharge volume drain and vent valves,

- a. Close within 30 seconds after receipt of a reactor scram signal and
- b. Open when the scram is reset.

3.0 LIMITING CONDITIONS FOR OPERATION

4.0 SURVEILLANCE REQUIREMENTS

G. Required Action

If Specifications 3.3.A through D above are not met, an orderly shutdown shall be initiated and have reactor in the cold shutdown condition within 24 hours.

3.3/4.3

83A

Bases Continued:3.3 and 4.3:

Deviations beyond this magnitude would not be expected and would require thorough evaluation. One per cent reactivity limit is considered safe since an insertion of this reactivity into the core would not lead to transients exceeding design conditions of the reactor system.

As was noted above reactivity anomalies can be found by comparison of the actual control rod inventory to the predicted inventory at a selected base condition. For example, the predicted control rod inventory at 100% power at a specified point in time can be compared to the actual control rod inventory at 100% power and at the specified time to determine if a reactivity anomaly exists. The Monticello Plant has been designed to increase or decrease power level as the system load demand changes. For this type of plant an equilibrium condition of the variables important to making a control rod inventory prediction, specifically the reactivity effects of the xenon, is rarely achieved. The uncertainties of calculating the control rod inventory with non-equilibrium xenon conditions can result in errors which can be misconstrued as reactivity anomalies. Therefore, this specification calls for performing of rod inventory comparisons at a time when xenon will not be a source of error.

- F. The closure time of 30 seconds was based on a letter dated 7/25/80 to J. G. Keppler (Region III) from D. E. Gilberts (NSP) concerning IE Bulletin No. 80-14. Ten hours to insert the required rods will allow time to shutdown in a controlled manner without causing an undue rate of change of the discharge channel temperature.
- G. Whenever a specification (or specifications) can not be met for a particular mode of operation, the reactor would be placed in a mode for which the specification (or specifications) are not required. This requires immediate initiation of a reactor shutdown upon discovery that specifications 3.3A through 3.3D are not met.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 10 TO FACILITY OPERATING

LICENSE NO. DPR-22

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

Principal Contributor: K. Eccleston

INTRODUCTION

As a result of numerous events involving similar failures of the Scram Discharge Volume (SDV) limit switches and SDV drain valve operability, the staff of the U.S. Nuclear Regulatory Commission (NRC) issued the IE Bulletin 80-14, "Degradation of BWR Scram Discharge Volume Capability," on June 12, 1980. After issuing the Bulletin, we sent a July 7, 1980 letter to all licensees of operating boiling water reactors and requested that they propose the following changes to the Technical Specifications (TS):

1. Surveillance requirements for SDV vent and drain valves;
2. Limiting Conditions of Operation (LCO)/surveillance requirements for the reactor protection system SDV limit switches; and
3. LCO/surveillance requirements for the control rod withdrawal block SDV limit switches.

Model Technical Specifications were enclosed with the letter to guide licensees when preparing their submittals. In a letter dated October 10, 1980 Northern States Power Company (the licensee) submitted the proposed changes to the Technical Specifications.

As part of our technical assistance program, Franklin Research Center (FRC) compared the licensee's submittal to the NRC criteria and model TSs. FRC has summarized its findings into a Technical Evaluation Report (TER). We have enclosed a copy of the report (TER-C5506-60).

EVALUATION

FRC notes in its evaluation that, in the following case, the licensee's response does not meet the explicit requirements of paragraph 3.3-6 and Table 3.3.6-1 of the NRC staff's Model TSs. However, the FRC report concludes that the technical bases are defined on page 50 of our report, "Generic Safety Evaluation Report on BWR Scram Discharge Systems" dated December 1, 1980 which permit consideration of this departure from the explicit requirements of the Model TSs. We conclude that these technical bases justify a deviation from the explicit requirements of the Model TSs.

After comparing the licensee's submittal and evaluating any deviations, FRC has concluded that the licensee's proposed TS changes (as modified by subsequent discussions) meet our criteria without requiring further submittals.

After reviewing and discussing the report with FRC, we conclude that the licensee's proposed changes to the TSs satisfy our requirements for:

1. Surveillance of SDV vent and drain valves;
2. LCO/surveillance requirements for the reactor protection system and control rod block SDV level switches.

Consequently, we find the licensee's proposed TS (as further modified by subsequent discussions) acceptable.

#### ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves 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 this amendment.

#### CONCLUSIONS

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does 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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: May 20, 1982

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-263

NORTHERN STATES POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 10 to Facility Operating License No. DPR-22, issued to Northern States Power Company, which revised Technical Specifications for operation of the Monticello Nuclear Generating Plant (the facility) located in Wright County, Minnesota. The amendment is effective as of its date of issuance.

The amendment modifies the Technical Specifications on the Scram Discharge Volume to include surveillance requirements for the Scram Discharge Volume vent and drain valves, Limiting Condition Operation/Surveillance Requirements for the Reactor Protection System and Control Rod Block Scram Discharge Volume limit switches. Certain editorial changes are also included.

The application for the amendment complies with 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 amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative

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declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated October 10, 1980, (2) Amendment No. 10 to License No. DPR-22, 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, N.W., Washington, D.C. and at the Environmental Conservation Library, Minneapolis Public Library, 300 Nicollet Mall, Minneapolis, Minnesota. A 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 Licensing.

Dated at Bethesda, Maryland, this 10th day of May 1982.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing