

September 7, 1994

Docket Nos. 50-282
and 50-306

Mr. Roger O. Anderson, Director
Licensing and Management Issues
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Dear Mr. Anderson::

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2 -
ISSUANCE OF AMENDMENTS RE: CORE EXIT THERMOCOUPLE ACTION STATEMENTS
(TAC NOS. M85723 AND M85724)

The Commission has issued the enclosed Amendment No. 112 to Facility Operating License No. DPR-42 and Amendment No. 105 to the Facility Operating License No. DPR-60 for the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated January 29, 1993, as revised June 15, 1994.

The amendments request changes to core exit thermocouple action statements.

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

Marsha Gamberoni, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 112 to DPR-42
2. Amendment No. 105 to DPR-60
3. Safety Evaluation

NRC FILE CENTER COPY

cc w/enclosures:

See next page

*See previous concurrence

OFFICE	LA:PD31	PM:PD31	*BC:HICB	BC:OTS <i>CS</i>	OGC <i>CS</i>	D:PD31 <i>M</i>
NAME	<i>Jamerson</i>	<i>MGamberoni</i> :gll <i>MP</i>	JWermiel	CGrimes #94165	<i>RBachmann</i>	LMarsh
DATE	08/10/94	08/31/94	08/22/94	08/15/94	08/15/94	08/31/94

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

Prairie Island Nuclear Generating
Plant

cc:

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DATED: September 7, 1994

AMENDMENT NO. 112 TO FACILITY OPERATING LICENSE NO. DPR-42-PRAIRIE ISLAND UNIT 1
AMENDMENT NO. 105 TO FACILITY OPERATING LICENSE NO. DPR-60-PRAIRIE ISLAND UNIT 2

Docket File

NRC & Local PDRs

PDIII-1 Reading

J. Roe, 0-13E4

J. Zwolinski, 0-13H24

L. B. Marsh

C. Jamerson

M. Gamberoni (2)

OGC-WF

D. Hagan

G. Hill (2)

C. Grimes, 0-11F23

T. Huang, 0-8F14

M. Waterman, 0-8H5

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W. Kropp, RIII

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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. 112
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 January 29, 1993, as revised June 15, 1994, 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:

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Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 112, 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



L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 7, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 112

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

TS.3.15-1
B.3.15-1

INSERT

TS.3.15-1
B.3.15-1

3.15 EVENT MONITORING INSTRUMENTATION

Applicability

Applies to plant instrumentation which does not perform a protective function, but which provides information to monitor and assess important parameters during and following an accident.

Objective

To ensure that sufficient information is available to operators to determine the effects of and determine the course of an accident to the extent required to carry out required manual actions.

SpecificationA. Process Monitors

1. The event monitoring instrumentation channels specified in Table TS.3.15-1 shall be OPERABLE.
2. With the number of OPERABLE event monitoring instrumentation channels, except the core exit thermocouples, less than the Required Total Number of Channels shown on Table TS.3.15-1, either restore the inoperable channels to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 6 hours.
3. With the number of OPERABLE channels for the core exit thermocouples less than the Required Total Number of Channels shown on Table TS.3.15-1, but with greater than or equal to 4 core exit thermocouples OPERABLE in the center core region and greater than or equal to one core exit thermocouple OPERABLE in each quadrant of the outside core region, restore the inoperable channels to OPERABLE status within 30 days, or prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.7.B.2 within the next 14 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status. As a minimum, the Required Total Number of Channels will be restored prior to startup following the next refueling outage.
4. With the number of OPERABLE channels for the core exit thermocouples less than the Required Total Number of Channels shown on Table TS.3.15-1, and with either less than 4 core exit thermocouples OPERABLE in the center region or less than one core exit thermocouple OPERABLE in each quadrant of the outside core region, restore the inoperable channels to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 6 hours.
5. With the number of OPERABLE event monitoring instrumentation channels less than the Minimum Channels Operable requirements of Table TS.3.15-1, either restore the minimum number of channels to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 6 hours.

3.15 EVENT MONITORING INSTRUMENTATION

Bases

The OPERABILITY of the event monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables during and following an accident. This capability is consistent with the recommendations of NUREG-0578 and NUREG-0737.

The following core exit thermocouples are included in the center core region referenced in Specification 3.15.A.3. If a thermocouple is not listed below, it is located in the outside core region.

<u>Thermocouple Number</u>	<u>Core Location</u>
9	D-5
10	D-7
12	E-4
13	E-6
14	E-10
16	F-7
18	G-4
19	G-6
22	H-5
23	H-9
28	I-4
29	I-8
30	I-10
32	J-6
33	J-8
34	J-9

Core exit thermocouple readings necessary to meet the requirements of Specification 3.15.A are available from the Plant Process Computer, the Control Room Core Exit Thermocouple Display or if no other readout is available, from test equipment readings from the Core Exit Thermocouple Junction Boxes.



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. 105
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 January 29, 1993, as revised June 15, 1994, 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. 105, 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



L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 7, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 105

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

TS.3.15-1
B.3.15-1

INSERT

TS.3.15-1
B.3.15-1

3.15 EVENT MONITORING INSTRUMENTATION

Applicability

Applies to plant instrumentation which does not perform a protective function, but which provides information to monitor and assess important parameters during and following an accident.

Objective

To ensure that sufficient information is available to operators to determine the effects of and determine the course of an accident to the extent required to carry out required manual actions.

SpecificationA. Process Monitors

1. The event monitoring instrumentation channels specified in Table TS.3.15-1 shall be OPERABLE.
2. With the number of OPERABLE event monitoring instrumentation channels, except the core exit thermocouples, less than the Required Total Number of Channels shown on Table TS.3.15-1, either restore the inoperable channels to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 6 hours.
3. With the number of OPERABLE channels for the core exit thermocouples less than the Required Total Number of Channels shown on Table TS.3.15-1, but with greater than or equal to 4 core exit thermocouples OPERABLE in the center core region and greater than or equal to one core exit thermocouple OPERABLE in each quadrant of the outside core region, restore the inoperable channels to OPERABLE status within 30 days, or prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.7.B.2 within the next 14 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status. As a minimum, the Required Total Number of Channels will be restored prior to startup following the next refueling outage.
4. With the number of OPERABLE channels for the core exit thermocouples less than the Required Total Number of Channels shown on Table TS.3.15-1, and with either less than 4 core exit thermocouples OPERABLE in the center region or less than one core exit thermocouple OPERABLE in each quadrant of the outside core region, restore the inoperable channels to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 6 hours.
5. With the number of OPERABLE event monitoring instrumentation channels less than the Minimum Channels Operable requirements of Table TS.3.15-1, either restore the minimum number of channels to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 6 hours.

3.15 EVENT MONITORING INSTRUMENTATIONBases

The OPERABILITY of the event monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables during and following an accident. This capability is consistent with the recommendations of NUREG-0578 and NUREG-0737.

The following core exit thermocouples are included in the center core region referenced in Specification 3.15.A.3. If a thermocouple is not listed below, it is located in the outside core region.

<u>Thermocouple Number</u>	<u>Core Location</u>
9	D-5
10	D-7
12	E-4
13	E-6
14	E-10
16	F-7
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19	G-6
22	H-5
23	H-9
28	I-4
29	I-8
30	I-10
32	J-6
33	J-8
34	J-9

Core exit thermocouple readings necessary to meet the requirements of Specification 3.15.A are available from the Plant Process Computer, the Control Room Core Exit Thermocouple Display or if no other readout is available, from test equipment readings from the Core Exit Thermocouple Junction Boxes.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATING TO AMENDMENT NOS. 112 AND 105 TO

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

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

DOCKET NOS. 50-282 AND 50-306

1.0 INTRODUCTION

By letter dated January 29, 1993, as revised June 15, 1994, 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 would involve the core exit thermocouple action statements in TS 3.15.A.

2.0 EVALUATION

The requested TS changes include:

(1) Specification 3.15.A.2

"An exception to the requirements of 3.15.A.2 for the core exist thermocouples" is incorporated into the existing action statement.

(2) Specification 3.15.A.3

The new action statement 3.15.A.3 specifies the action to be taken if the number of core exit thermocouples is less than the required total number of channels specified in Table TS.3.15-1 (four per quadrant). Continued operation would be allowed provided:

- (a) Greater than or equal to four core exit thermocouples are operable in the center core region,
- (b) Greater than or equal to one core exit thermocouple is operable in each quadrant of the outside core region,
- (c) The minimum channels operable requirement (two thermocouples per quadrant) is met, and
- (d) The inoperable channels are returned to operable status within 30 days or a special report to the Commission is prepared and submitted pursuant to TS 6.7.B.2 within the next 14 days outlining the action

taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status. As a minimum, the required total number of channels will be restored prior to startup following the next refueling outage.

(3) Specification 3.15.A.4

With the number of OPERABLE channels for the core exit thermocouples less than the Required Total Number of Channels shown on Table TS.3.15-1 and with either less than four core exit thermocouples OPERABLE in the center region or less than one core exit thermocouple OPERABLE in each quadrant of the outside core region, restore the Inoperable channels to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 6 hours.

The Specifications (Item 1 through 3) are the requested changes to the action statements to be taken if the number of core exit thermocouples (CET) is less than the required total number of channels specified in Table TS.3.15-1 (four per quadrant). These changes deviate from the TS requirements stated in Item II.F.2 of NUREG-0737 (Generic Letter 83-37). However, the licensee has provided their justifications for these deviations as follows:

- (a) Prairie Island is a two loop plant with a core exit thermocouple system consisting of 36 thermocouples which monitor 121 fuel assemblies in a core area of 52 ft². In comparison, a Westinghouse four-loop plant has 51 core exit thermocouples which monitor 193 fuel assemblies in a core area of 96 ft². Even though the area of the Prairie Island reactor core is approximately half the size of the four-loop plant, the number of thermocouples per unit of core area is higher.
- (b) Thermocouple failures occurred in 1992 on both units. While enough thermocouples remained operable to meet the Technical Specifications of four thermocouples per core quadrant, there was a high potential for additional failures which could have reduced the number of thermocouples below the required total number of channels limit in some quadrants. During the November 1992 dual unit outage, ABB/CE (CET system designer) was contracted to assess the condition of the CET head connectors, troubleshoot the entire system (including the cables in containment) and replace the head connector if necessary. The following repairs were made during this outage: eight head connectors replaced on Unit 1; four head lift rig cable assemblies replaced on Unit 1; and one head lift rig cable assembly replaced on Unit 2. A modification was initiated in 1993 to replace all head connectors with a newer, sturdier model and to install a transition cable to reduce the chance of damaging the head connector. This modification was completed on Unit 2 during the November 1993 refueling outage and was completed on Unit 1 during the May 1994 refueling outage.

The staff has reviewed the licensee's proposed TS changes to the action statements to be taken if the number of core exit thermocouples is less than the required total number of channels specified in Table TS.3.15-1 (four per

quadrant), and has found that the requested TS changes to the action statements are acceptable since the Prairie Island Plants have a higher density of thermocouples per unit of core area; the required total number of channels will be restored prior to startup following the next refueling outage; conditions for continued operation are established in TS 3.15.A.3; and a new HOT SHUTDOWN action statement TS 3.15.A.4 is established to deal with the operable requirement for four core exit thermocouples in the center core or one in each quadrant of the outside core region in addition to the old action statement for Specification 3.15.A.5 which is "With the number of OPERABLE event monitoring instrumentation channels less than the Minimum Channels Operable requirements of Table TS.3.15-1, either restore the minimum number of channels to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 6 hours."

The staff has reviewed the request by Northern States Power Company to revise the TS of the Prairie Island Nuclear Generating Plant, Units 1 and 2. Based on the review, the staff concludes that these revisions 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. 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 (59 FR 39594). 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 Contributor: T. Huang

Date: September 7, 1994