September 29, 1992

Docket Nos. 50-282
and 50-306

Mr. T. M. Parker, Manager
Nuclear Support Services
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Dear Mr. Parker:

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2 - AMENDMENT NOS. 102 AND 95 TO FACILITY OPERATING LICENSE NOS. DPR-42 AND DPR-60 (TAC NOS. M82518 AND M82519)

The Commission has issued the enclosed Amendment No102 to Facility Operating License No. DPR-42 and Amendment No. 95to 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 in response to your application dated December 13, 1991.

The amendments delete requirements related to chlorine detectors. 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

William O. Long, Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No.102to DPR-42
2. Amendment No. 95to DPR-60
3. Safety Evaluation

cc w/enclosures:
See next page

*SEE PREVIOUS CONCURRENCE

| LA:PDIII-1* | PM:PDIII-1* | OGC* | PD:PDIII-1 | AD:DRPW* |
|---|---|---|---|---|
| MShuttleworth | WLong | RBachmann | LMarsh | JZwolinski |
| 09/15/92 | 09 /15/92 | 7/28/92 | 9/29/92 | 09/15/92 |

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FILENAME: B:\AMEND.WP

Mr. T. M. Parker
Northern States Power Company

Prairie Island Nuclear Generating
Plant

cc:

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Shaw, Pittman, Potts and Trowbridge
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Mr. William Miller, Auditor
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Red Wing, Minnesota 55066

Kris Sanda, Commissioner
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790 American Center Building
150 East Kellogg Boulevard
St. Paul, Minnesota 55101

DATED: September 29, 1992

AMENDMENT NO. 102 TO FACILITY OPERATING LICENSE NO. DPR-42-PRAIRIE ISLAND UNIT 1
AMENDMENT NO. 95 TO FACILITY OPERATING LICENSE NO. DPR-60-PRAIRIE ISLAND UNIT 2

Docket File
NRC & Local PDRs
PDIII-1 Reading
PI Plant File
B. Boger, 13/E/4
J. Zwolinski, 13/H/24
L. Marsh
M. Shuttleworth
W. Long
OGC-WF
D. Hagan, 3206 MNBB
G. Hill (8), P-137
Wanda Jones, MNBB-3701
C. Grimes, 11/F/23
J. Wiggins, 7/D/4
K. Parczewski, 7/D/4
ACRS (10)
GPA/PA
OC/LFMB
W. Shafer, R-III

cc: Plant Service list

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. 102
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 December 13, 1991, 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.102 are hereby incorporated in the license The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 29, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 102

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-iv | TS-iv |
| TS.3.13-2 | --- |
| B.3.13-1 | B.3.13-1 |

TABLE OF CONTENTS (Continued)

## 3.13 CONTROL ROOM AIR TREATMENT SYSTEM

**Bases**

The Control Room Special Ventilation System is designed to filter the Control Room atmosphere during accident conditions. The system is designed to automatically start on a high radiation signal in the ventilation air or when a Safety Injection signal is received from either unit. Two completely redundant trains are provided.

Each train has a filter unit consisting of a prefilter, HEPA filters, and charcoal adsorbers. The HEPA filters remove particulates from the Control Room atmosphere and prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to remove any radioiodines from the Control Room atmosphere.

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. 95
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 December 13, 1991, 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.95, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 29, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 95

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-iv | TS-iv |
| TS.3.13-2 | --- |
| B.3.13-1 | B.3.13-1 |

TABLE OF CONTENTS (Continued)

## 3.13 CONTROL ROOM AIR TREATMENT SYSTEM

**Bases**

The Control Room Special Ventilation System is designed to filter the Control Room atmosphere during accident conditions. The system is designed to automatically start on a high radiation signal in the ventilation air or when a Safety Injection signal is received from either unit. Two completely redundant trains are provided.

Each train has a filter unit consisting of a prefilter, HEPA filters, and charcoal adsorbers. The HEPA filters remove particulates from the Control Room atmosphere and prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to remove any radioiodines from the Control Room atmosphere.

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

# SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

# RELATED TO AMENDMENT NOS. 102 AND 95 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 December 13, 1991, Northern States Power Company (the licensee) submitted an application to amend Technical Specification (TS) 3.13.B (Control Room Air Treatment System). The proposed amendments would delete requirements for a chlorine detection system.

The licensee found that because no chlorine is stored on the plant site, and the quantity of chlorine transported within a five mile distance from the plant is very small, the probability of the accident which would cause the chlorine to exceed safe concentrations in the control room is below the limit for which the Standard Review Plan (SRP) requires a safety analysis to be performed.

Standard Review Plan, Section 2.2.3,II establishes that if the probability of an off-site occurrence leading to potential radiological consequences in excess of 10 CFR Part 100 exposure guidelines is less than 1.0E-6 per year, then the occurrence falls within the low probability of occurrence criterion of 10 CFR Part 100.10. This frequency of occurrence must be combined with reasonable qualitative arguments.

Based on the probabilistic study and qualitative arguments, the licensee concluded that the chlorine transported in the vicinity of the plant does not pose safety hazard to the habitability of the control room and there is no need for having a chlorine detection capability at the plant.

## 2.0 EVALUATION

Chlorine is transported within a five mile radius from the plant by two railroads, SOO and Burlington Northern. The Burlington Northern line travels past the Prairie Island plant on the opposite side of the Mississippi River. Its point of closest approach is approximately two miles. The SOO line comes within approximately 0.5 miles of the plant. The licensee has performed an analysis of the effect of an accidental release of chlorine transported by

these railroads using the methodology described in NUREG/CR-1741. The results of this analysis have indicated that accidental release of chlorine transported by the Burlington Northern railroad would not produce toxic concentrations in the control room for at least two minutes, giving enough time for the operators to don their protective equipment. However, the same type of analysis performed for the release of chlorine transported by the SOO railroad has indicated that for certain atmospheric conditions, chlorine concentration in the control room may reach toxic limits before an elapse of two minutes. We have reviewed these analyses and performed our independent verifications using the EXTRAN/CRH computer codes and find that the licensee's approach is conservative.

In view of an unacceptable chlorine buildup in the control room during its accidental release from the SOO trains, the licensee justified deletion of the chlorine detection system by demonstrating that the probability of occurrence of this event is below the value which would require safety protection for the plant.

The licensee performed a probabilistic analysis in which he considered the combined probability of several different events which have to take place before the concentration of chlorine in the control room could reach toxic limits in less than two minutes. The probability of hazardous chemical release per train-mile traveled was determined from the average national data to be 5.01E-8. The number of track miles where an accident will result in buildup of toxic concentration of chlorine in the control room in less than two minutes was calculated from the plant location relative to the SOO rail lines and from the local atmospheric conditions. Its value is 1.03E-1 per shipment. Finally, shipment of chlorine was conservatively estimated at 196 shipments per year. Combining these probabilities, the total probability for incapacitating the control room operators due to inability to don their respiratory equipment was determined to be 1.0E-6 per year. We performed verifications of the assumptions used by the licensee in his analysis and found them to be conservative. The licensee further considered the probability of exceeding the radiation exposure requirements of 10 CFR Part 100, Subsection 100.10, when the control room operators become incapacitated and unable to intervene should an accident occur. The value of 0.1, chosen by the licensee, was based on the information from NUREG/CR-2650 and the data from the analysis for the Monticello plant. We compared this value to the data available from other sources and find it to be a very conservative estimate of the probability. Combining this probability with the probability for the incapacitation of control room operators determined previously, the total probability for the plant not meeting the requirements of 10 CFR Part 100, Subsection 100.10 is equal to 1.0E-7 per year. Section 2.2.3 of the Standard Review Plan states that the rate of occurrence of potential exposures in excess of 10 CFR Part 100 guidelines of approximately 1.0E-6 per year is acceptable if, when combined with reasonable qualitative arguments, the realistic probability can be shown to be lower. The licensee meets this condition because his analysis was based on several conservative assumptions.

## 3.0 CONCLUSIONS

The staff has reviewed the licensee's request for deletion of the chlorine detection system. In order to support his request, the licensee presented the analyses indicating that because of a very low probability, there is no concern that the exposure requirements of 10 CFR Part 100, Subsection 100.10 will not be met in the Prairie Island plant. Based on the review, the staff concludes that the licensee's analyses are acceptable and deletion of the chlorine detection system would not cause unacceptable safety concerns.

## 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State Official was notified of the proposed issuance of the amendment. The State Official discussed the amendment with the licensee and has no objection.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements 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 (57 FR 4490). 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.

## 6.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: K. Parczewski

Date: September 29, 1992